COMPETENCE BASED EDUCATION

SENIOR SCHOOL CURRICULUM

GRADE 10

APRIL 2026

Holiday Assignments

... Striving for Excellence Through Competence ...

AD AUTHORS: COMPETENCE EDUCATION GROUP

THIS HOMEWORK BOOK CONTAINS THE FOLLOWING SUBJECTS:

- Applied Agriculture
- Aviation Technology
- Biology
- Building Construction
- Business Studies
- Chemistry
- Computer Science
- Core Mathematics
- Ch… …ligious Education
- C… …ligious
- E…
- Co… …ty Service Learning
- Electrical Technology
- English
- Literature
- Essential Mathematics
- Fine Arts
- Homescience
- Hindu Religious Education
- Information Communication Technology
- Islamic Religious Education

- Applied Agriculture
- Aviation Technology
- Biology

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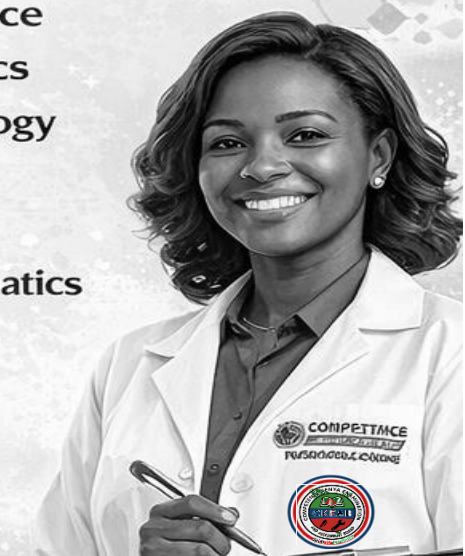
- Chemistry
- Computer Science
- Core Mathematics
- Electrical Technology
- English
- Literature
- Essential Mathematics
- Fine Arts
- French
- General Science
- Geography
- German
- History and Citizenship
- Kiswahili Lugha Fasihi ya Kiswahili
- Mandarin
- Marine Technology
- Media Technology
- Music and Dance
- Physical Education
- Physics



COMPETENCE EDUCATION GROUP

SENIOR SCHOOL

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 – APPLIED AGRICULTURE (THEORY)

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

1. Fill in the blanks

a) Soil particles removed by water or wind

Possible answers:

1. Soil erosion

b) Uppermost soil layer rich in organic matter

1. Topsoil

c) Legal agreement allowing temporary land use

1. Leasing
2. Lease agreement
3. Land lease
4. Agricultural lease
5. Temporary land lease
6. Land rental agreement
7. Lease contract
8. Land tenancy
9. Farming lease
10. Agricultural tenancy
11. Land hiring
12. Leasehold agreement
13. Land occupation contract
14. Temporary land rights
15. Farming tenancy
16. Land use contract
17. Agricultural renting
18. Leasehold farming
19. Contract farming land
20. Agricultural land rent
21. Land lease contract
22. Farm leasing

23. Temporary land ownership rights
24. Land hire agreement
25. Farm land lease
26. Agricultural land tenancy
27. Leasehold farming agreement
28. Land leasing contract
29. Cultivation lease
30. Temporary agricultural rights

Correct: **Leasing**

d) Growing different crops in seasons

1. Crop rotation
2. Seasonal crop rotation
3. Rotational cropping
4. Crop alternation
5. Crop cycling
6. Rotational agriculture
7. Crop sequence farming
8. Rotational planting
9. Crop change system
10. Seasonal crop change
11. Sequential cropping
12. Alternating crops
13. Field rotation
14. Soil fertility rotation
15. Rotational cultivation
16. Rotational field cropping
17. Crop diversification rotation
18. Crop shifting rotation
19. Multi-season cropping
20. Field crop rotation
21. Rotational planting system
22. Alternating crop farming
23. Crop pattern rotation
24. Farm crop rotation
25. Sequential farming

26. Land rotation cropping
27. Seasonal crop cycle
28. Agricultural crop rotation
29. Cropping rotation system
30. Rotational crop management

Correct: **Crop rotation**

e) Removal of excess water

1. Drainage
2. Land drainage
3. Farm drainage
4. Soil drainage
5. Agricultural drainage
6. Surface drainage
7. Field drainage
8. Subsurface drainage
9. Water removal
10. Land water control
11. Water management drainage
12. Soil water drainage
13. Excess water control
14. Agricultural water drainage
15. Drainage system
16. Water evacuation
17. Soil moisture removal
18. Field water control
19. Irrigation drainage balance
20. Water outlet management
21. Flood control drainage
22. Land reclamation drainage
23. Soil water release
24. Farm water removal
25. Moisture drainage
26. Water runoff control
27. Land water release
28. Water drainage channeling
29. Field runoff drainage

30. Agricultural drainage system

Correct: **Drainage**

2. Matching

Correct matches:

i) Mulching → **B**

ii) Crop rotation → **D**

iii) Green manuring → **A**

iv) Harrowing → **C**

v) Leasing → **E**

3a. Characteristics of fertile soil

1. High organic matter
2. Good drainage
3. Good aeration
4. Adequate nutrients
5. Balanced pH
6. Good water retention
7. Presence of microorganisms
8. Good soil structure
9. Dark color
10. High humus content
11. High biological activity
12. Loamy texture
13. Good root penetration
14. Moisture holding capacity
15. Presence of earthworms
16. Good nutrient cycling
17. Low salinity
18. Balanced minerals
19. Moderate temperature
20. High fertility index
21. Stable soil aggregates
22. Good porosity
23. Low erosion rate
24. High microbial population

25. Healthy soil organisms
26. Proper soil depth
27. Balanced carbon content
28. Good crop productivity
29. Low compaction
30. Suitable soil texture

3b. Advantages of certified seeds

1. High yield
2. Disease resistant
3. Pest resistant
4. Uniform growth
5. High germination rate
6. Early maturity
7. High quality produce
8. Reliable crop performance
9. Adapted varieties
10. Improved crop vigor
11. Pure seed variety
12. Reduced crop failure
13. Better market value
14. High productivity
15. Uniform plant size
16. Strong seedlings
17. Reduced pest attack
18. Higher profit
19. Better seed purity
20. Improved resistance
21. Faster growth
22. Consistent harvest
23. Better drought tolerance
24. High viability
25. Reduced disease spread
26. Better storage quality
27. Improved genetic quality
28. Quality assurance

29. Increased farmer income
30. Stable crop performance

3c. Signs of nutrient deficiency

1. Yellowing leaves
2. Stunted growth
3. Poor yield
4. Purple leaves
5. Leaf spots
6. Leaf curling
7. Wilting plants
8. Small leaves
9. Slow growth
10. Leaf discoloration
11. Weak stems
12. Poor root growth
13. Premature leaf fall
14. Dry leaf edges
15. Brown leaf tips
16. Pale leaves
17. Thin stems
18. Delayed maturity
19. Low flowering
20. Poor fruit formation
21. Uneven growth
22. Chlorosis
23. Necrosis
24. Weak plants
25. Reduced biomass
26. Poor seed formation
27. Low leaf density
28. Reduced crop vigor
29. Uneven plant height
30. Plant weakness

4a. Ways youth can acquire land legally

1. Buying land
2. Leasing land
3. Inheriting land
4. Government land allocation
5. Community land sharing
6. Renting farmland
7. Cooperative land ownership
8. Land donation
9. Land partnership
10. Joint land purchase
11. Land trust ownership
12. County government allocation
13. Youth farming programs
14. Land grants
15. Land subdivision purchase
16. Long-term lease
17. Sharecropping agreement
18. Land exchange
19. Family land allocation
20. Agricultural settlement schemes
21. Mortgage land purchase
22. Farm partnership agreement
23. Cooperative society land
24. Contract farming land
25. NGO land support
26. Church land lease
27. Corporate land lease
28. Institutional farmland lease
29. Land pooling
30. Agricultural investment land purchase

4b. Risks of poor drainage

1. Waterlogging
2. Root rot
3. Nutrient leaching

4. Crop diseases
5. Reduced oxygen in soil
6. Stunted growth
7. Poor root development
8. Soil compaction
9. Pest increase
10. Reduced yield
11. Plant death
12. Soil erosion
13. Fungal infections
14. Yellow leaves
15. Delayed growth
16. Poor germination
17. Weed increase
18. Soil salinity
19. Low productivity
20. Crop failure
21. Soil structure damage
22. Bacterial diseases
23. Slow plant growth
24. Reduced nutrient uptake
25. Increased soil acidity
26. Flood damage
27. Soil nutrient imbalance
28. Reduced soil aeration
29. Poor crop quality
30. Farm losses

5a. Soil particles bottom → top

1. Sand
2. Silt
3. Clay

Extra possible mentions:

4. Gravel
5. Organic matter
6. Humus

7. Fine soil particles
8. Heavy particles
9. Light particles
10. Sediments
11. Mineral particles
12. Soil aggregates
13. Soil sediments
14. Soil components
15. Soil fractions
16. Sand particles
17. Silt particles
18. Clay particles
19. Soil grains
20. Soil dust
21. Mineral layers
22. Soil layers
23. Soil texture layers
24. Soil sediments separation
25. Soil suspension layers
26. Soil material fractions
27. Particle sediment layers
28. Soil mineral components
29. Soil grain fractions
30. Soil particle groups

Correct order: **Sand → Silt → Clay**

6b. Soil erosion control

Mechanical

1. Terracing
2. Contour ploughing
3. Stone lines
4. Gabions
5. Drainage channels
6. Cut-off drains
7. Water diversion channels
8. Bench terraces

9. Retaining walls
10. Soil bunds
11. Check dams
12. Ridge farming
13. Land leveling
14. Flood barriers
15. Soil traps

Biological

16. Tree planting
17. Grass planting
18. Agroforestry
19. Cover crops
20. Mulching
21. Crop rotation
22. Strip cropping
23. Vegetative barriers
24. Windbreaks
25. Shelter belts
26. Green manure crops
27. Conservation agriculture
28. Mixed cropping
29. Intercropping
30. Natural vegetation restoration

8a. Sustainable agriculture

Possible definitions:

1. Farming that protects the environment while producing food
2. Agriculture that meets present needs without harming future generations
3. Long-term environmentally friendly farming
4. Farming that conserves soil and water
5. Agriculture that maintains soil fertility
6. Eco-friendly farming system
7. Farming that balances production and conservation
8. Responsible land use farming
9. Resource-conserving agriculture
10. Climate-smart agriculture

(Correct concept repeated in different wording.)

9a. Fertilizer applied at planting

Correct answer:

DAP (Diammonium Phosphate)

Other acceptable mentions:

1. Basal fertilizer
2. Starter fertilizer
3. Phosphatic fertilizer
4. Root development fertilizer
5. Planting fertilizer
6. Phosphate fertilizer

9d. Fertilizer calculation

50 kg per acre × 2 acres

= **100 kg fertilizer**

Other equivalent answers:

1. 0.1 tonnes
2. 100,000 grams
3. Two 50-kg bags
4. 1 quintal

10. Ethical ways to acquire agricultural land

1. Buying land
2. Leasing land
3. Inheritance
4. Renting land
5. Government allocation
6. Cooperative ownership
7. Land donation
8. Family transfer
9. Community allocation
10. Sharecropping agreement
11. Joint purchase
12. Land exchange
13. Settlement schemes
14. Agricultural grants

15. Mortgage purchase
16. Youth land programs
17. NGO land support
18. Church land lease
19. Company land lease
20. Partnership farming
21. Land pooling
22. Legal land subdivision purchase
23. Trust land allocation
24. Community land rights
25. County government land programs
26. Agricultural investment land purchase
27. Family farming land allocation
28. Institutional land leasing
29. Cooperative society land purchase
30. Registered land transfer

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 – AVIATION TECHNOLOGY (THEORY)

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

1. Electrical Injury

Definition (Electrical injury)

1. Injury caused by electric current passing through the body
2. Harm caused by contact with electricity
3. Damage to body tissues due to electric shock
4. Injury from electrical energy exposure
5. Shock injury caused by electrical circuits
6. Burns or damage from electrical current
7. Electric shock trauma
8. Tissue damage caused by electricity
9. Electrical burn injury
10. Harm caused by faulty electrical equipment
11. Electrical contact injury
12. High voltage injury
13. Electrical shock accident
14. Electrocution injury
15. Damage caused by electrical discharge
16. Electrical current burn
17. Electrical hazard injury
18. Electric power injury
19. Electrical energy trauma
20. Contact with live wires injury
21. Electrical equipment accident
22. Electrical shock wound
23. Electrical exposure injury
24. Electrical accident injury
25. Electrical workplace injury
26. Electrical conduction injury
27. Electric arc injury
28. Electrical hazard trauma
29. Electric contact burn
30. Electric current damage

Correct exam definition:
Injury caused when electric current passes through the human body.

Ways of preventing electrical injuries

1. Use insulated tools
2. Wear protective gloves
3. Avoid touching exposed wires
4. Switch off power before repairs
5. Use proper grounding systems
6. Use circuit breakers
7. Keep electrical equipment dry
8. Regular inspection of wiring
9. Install safety switches
10. Use personal protective equipment (PPE)
11. Do not overload sockets
12. Proper maintenance of electrical equipment
13. Follow electrical safety procedures
14. Use rubber-soled shoes
15. Keep water away from electrical devices
16. Avoid damaged cables
17. Proper training in electrical work
18. Use warning signs
19. Maintain safe distance from live wires
20. Use protective clothing
21. Install surge protectors
22. Turn off equipment when not in use
23. Follow safety regulations
24. Report faulty equipment immediately
25. Avoid using electricity in wet areas
26. Use insulated ladders
27. Lock-out/tag-out procedures
28. Use protective helmets
29. Keep electrical panels covered
30. Use certified electrical devices

2. Part of airport where aircraft are parked and maintained

Correct answer:

Apron

Other acceptable mentions:

1. Aircraft apron
2. Parking apron
3. Aircraft servicing area
4. Ramp
5. Aircraft parking area
6. Maintenance apron
7. Aircraft service bay
8. Airport apron zone
9. Aircraft ground area
10. Aircraft service platform
11. Aircraft staging area
12. Parking ramp
13. Aircraft operations area

14. Ground handling area
15. Aircraft loading apron
16. Airside apron
17. Aircraft maintenance platform
18. Ramp area
19. Aircraft turnaround area
20. Ground operations area

3. Why helicopters hover but planes cannot

1. Helicopters use rotating blades to generate lift vertically
2. Helicopters produce lift without forward motion
3. Helicopter rotor pushes air downward
4. Rotor blades maintain lift in one position
5. Planes need forward speed to create lift
6. Fixed wings require airflow for lift
7. Helicopter engines rotate blades continuously
8. Rotors allow vertical takeoff and landing
9. Helicopter blades act like spinning wings
10. Airplanes rely on aerodynamic lift from wings
11. Helicopters control lift by blade pitch
12. Planes stall without forward movement
13. Helicopters adjust rotor thrust
14. Rotor system produces continuous lift
15. Helicopters can balance thrust and gravity
16. Planes require runway acceleration
17. Rotorcraft generate lift through blade rotation
18. Helicopters control lift through cyclic control
19. Airplanes depend on airflow across wings
20. Helicopters generate lift directly downward

4. Types of safety signs

1. Warning signs
2. Prohibition signs
3. Mandatory signs
4. Emergency signs
5. Fire safety signs
6. Hazard signs
7. Danger signs
8. Exit signs
9. PPE required signs
10. Radiation warning signs
11. Electrical hazard signs
12. Slippery floor signs
13. No entry signs
14. First aid signs
15. Biohazard signs
16. High voltage signs
17. Flammable material signs
18. No smoking signs
19. Protective helmet signs
20. Safety instruction signs

5. Pioneers of aviation

Examples:

1. Orville Wright – Built and flew first powered airplane
2. Wilbur Wright – Co-invented powered aircraft
3. Leonardo da Vinci – Designed early flying machine concepts
4. George Cayley – Developed principles of aerodynamics
5. Otto Lilienthal – Conducted successful glider flights
6. Alberto Santos-Dumont – Built early powered aircraft
7. Samuel Langley – Built early experimental aircraft
8. Amelia Earhart – First woman to fly solo across Atlantic
9. Charles Lindbergh – First solo nonstop Atlantic flight
10. Igor Sikorsky – Developed modern helicopters

6. Causion sign

7. Matching

Correct answers:

a) Runway → **i**
b) Apron → **ii**
c) Terminal → **iii**
d) Hangar → **iv**

8. Advantages of helicopters in rescue

1. Can hover in one place
2. Can land in small areas
3. Vertical take-off and landing
4. Can access mountains
5. Can reach remote locations
6. Faster emergency response
7. No runway required
8. Rescue from rooftops
9. Useful in disasters
10. Can lower rescue teams with ropes
11. Flexible movement
12. Can land in forests
13. Access accident sites
14. Can transport injured people quickly
15. Operate in confined spaces
16. Ideal for search operations
17. Can hover above water
18. Can operate in rough terrain
19. Useful for firefighting support
20. Can observe from above

10. Aircraft components

a) Rotating lift part in helicopter
Rotor blade

Other possible mentions:

- Main rotor
- Helicopter rotor
- Rotor system

b) Fixed surface used for lift
Wing

c) Jet engine providing thrust
Jet engine / Turbine engine

11. Types of aviation injuries

1. Electrical injury
2. Mechanical injury
3. Thermal injury
4. Chemical burns
5. Cuts
6. Bruises
7. Fractures
8. Hearing damage
9. Eye injuries
10. Head injuries
11. Burns
12. Sprains
13. Strains
14. Impact injuries
15. Slip injuries
16. Fall injuries
17. Tool injuries
18. Equipment injuries
19. Fire burns
20. Fuel burns

12. Pilot steps before takeoff

1. Aircraft inspection
2. Check weather conditions
3. Check fuel levels
4. Communicate with control tower
5. Check instruments
6. Seatbelt check
7. Passenger briefing
8. Engine start-up
9. Navigation system check
10. Flight plan confirmation
11. Brake test
12. Taxi to runway

13. Set flaps
14. Engine power check
15. Safety checklist review
16. Cabin door check
17. Emergency equipment check
18. Radio communication test
19. Altimeter setting
20. Clearance for takeoff

13. Functions of airport terminal

1. Passenger check-in
2. Security screening
3. Boarding aircraft
4. Baggage handling
5. Immigration services
6. Customs inspection
7. Passenger waiting area
8. Ticket sales
9. Flight information display
10. Restaurants and shops
11. Passenger lounges
12. Airline offices
13. Airport administration
14. Travel services
15. Arrival and departure coordination

14. Aircraft type matching

Correct answers:

a) Glider → **i**
b) Cargo plane → **ii**
c) Passenger plane → **iii**
d) Helicopter → **iv**

18. Difference between injuries

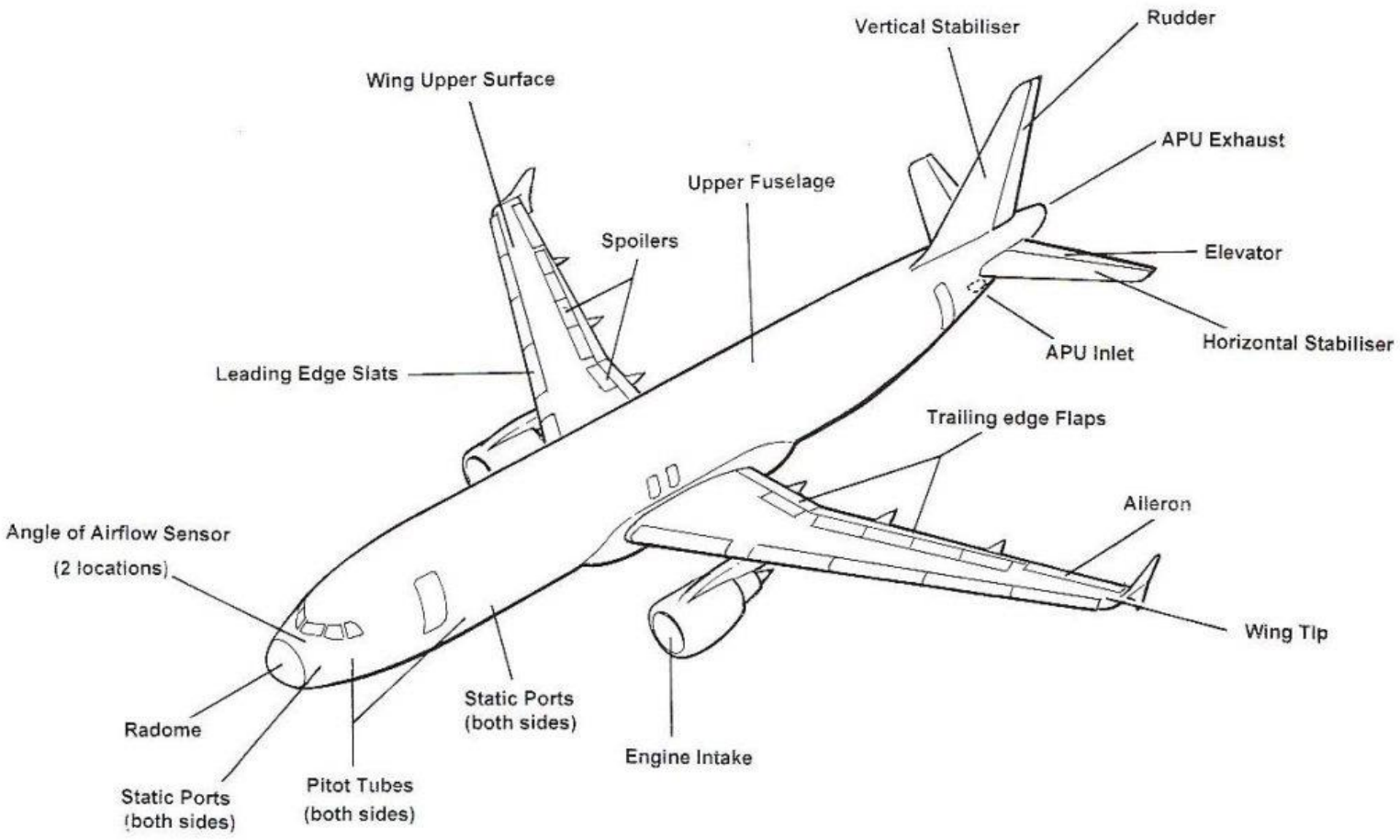
Thermal injury:

1. Caused by heat
2. Caused by fire
3. Caused by hot surfaces
4. Causes burns

Mechanical injury:

1. Caused by physical force
2. Caused by tools or machinery
3. Includes cuts and fractures
4. Caused by impact

19. a)



b)

1. Provides Stability

- The tail keeps the airplane **balanced and stable** in the air.
- It prevents the aircraft from **swaying or spinning uncontrollably**.

2. Controls Direction (Yaw)

- The **rudder**, located on the vertical stabilizer, helps the airplane **turn left or right**.
- This movement is called **yaw**.

3. Controls Up and Down Movement (Pitch)

- The **elevators**, found on the horizontal stabilizer, control the **upward and downward movement of the nose** of the aircraft.
- This movement is called **pitch**.

4. Maintains Balance During Flight

- The tail counteracts forces produced by the wings and engine to **keep the airplane level**.

5. Improves Control During Take-off and Landing

- The tail helps pilots **adjust the aircraft's angle** for safe take-off and landing.

Main Parts of the Tail Section

1. **Vertical stabilizer** – keeps the airplane stable left and right.
2. **Rudder** – controls yaw (left/right turning).
3. **Horizontal stabilizer** – keeps the airplane level.
4. **Elevators** – control pitch (up/down movement).

20. True / False

a) All aircraft require engines to fly
Answer: **False**
Reason: Gliders fly without engines.

b) Runway used for maintenance
Answer: **False**
Reason: Maintenance occurs in hangars.

c) PPE reduces accidents
Answer: **True**
Reason: Protective equipment prevents injuries.

d) Balloons demonstrate lighter-than-air flight
Answer: **True**
Reason: They float due to lighter gas.

e) Aviation safety rules apply only to pilots
Answer: **False**
Reason: Rules apply to all aviation personnel.

21. Matching

i) Hangar → **B**
ii) Control tower → **A**
iii) Runway → **D**
iv) First aid kit → **E**
v) Fire extinguisher → **C**

22. Fixed vs Rotary aircraft

Fixed wing:

1. Wings remain stationary
2. Requires runway
3. Generates lift through forward motion
4. Faster speeds

Rotary wing:

1. Uses rotating blades
2. Can hover
3. Vertical takeoff
4. Can land in small spaces

Examples:

Fixed wing:

- Airplane
- Glider
- Jet aircraft
- Cargo plane

Rotary wing:

- Helicopter
- Autogyro

23.

a) Classify the injury according to severity. (2 marks)

- **Minor injury** (a slight cut that can be treated with basic first aid).

b) FOUR steps of first aid for the injury. (4 marks)
i. **Clean the wound** using clean water or antiseptic to remove dirt and germs.
ii. **Stop the bleeding** by applying gentle pressure with clean cloth or gauze.
iii. **Apply antiseptic** to prevent infection.
iv. **Cover the wound** with a sterile bandage or plaster.

c) THREE workshop safety rules that were ignored. (3 marks)
i. **Always wear protective gear** such as safety gloves when working.
ii. **Follow workshop safety instructions** when handling tools and materials.
iii. **Observe personal safety and hygiene** while working in the workshop.

24. Aviation careers

1. Pilot
2. Air traffic controller
3. Aircraft engineer
4. Aircraft mechanic
5. Cabin crew
6. Flight dispatcher
7. Aviation safety officer
8. Airport manager
9. Ground operations officer
10. Aviation meteorologist
11. Aircraft designer
12. Drone operator
13. Airport security officer
14. Flight instructor

15. Aircraft technician
16. Air cargo manager
17. Air navigation specialist
18. Aviation electrician
19. Airline operations manager
20. Aviation inspector

SECTION C (25 MARKS)

25. History and Development of Aviation (10 marks)

a) THREE major milestones in aviation development. (6 marks)

i. The first successful powered flight by Orville Wright and Wilbur Wright in **1903**, which proved that controlled powered flight was possible.

ii. Development of **jet aircraft** in the 1930s–1940s which made airplanes faster and capable of flying at higher altitudes.

iii. Introduction of **commercial passenger aviation**, enabling people to travel long distances quickly by air.

1. First powered flight by Orville Wright and Wilbur Wright (1903)
2. First successful glider flights by Otto Lilienthal
3. First jet aircraft development
4. Introduction of commercial airlines
5. Supersonic flight development
6. Helicopter invention by Igor Sikorsky
7. First transatlantic flight by Charles Lindbergh
8. First female transatlantic flight by Amelia Earhart
9. Development of jet engines
10. Introduction of modern passenger jets

b) How modern aircraft differ from early flying machines. (4 marks)

i. Modern aircraft use **powerful jet engines**, while early flying machines used small propeller engines.

ii. Modern aircraft are built with **stronger and lighter materials** such as aluminium alloys and composites.

iii. Modern airplanes have **advanced navigation and communication systems**, unlike early aircraft which had very simple controls.

iv. Modern aircraft can **carry many passengers and fly longer distances**, while early machines carried very few people and flew short distances.

26. Airport Operations and Safety (15 marks)

a) THREE operational areas of an airport. (9 marks)

i. **Runway** – the long paved strip where aircraft **take off and land**.

ii. **Terminal building** – the area where **passengers check in, wait, and board airplanes**.

iii. **Apron (parking area)** – the area where aircraft **park, refuel, load passengers, and unload cargo**.

iv. **Control tower area** – where **air traffic controllers guide and monitor aircraft movement** on the ground and in the air.

Airport operational areas

1. Runway
2. Taxiway
3. Apron
4. Terminal building
5. Hangars
6. Cargo area
7. Control tower
8. Maintenance area
9. Fuel storage area
10. Security checkpoints

b) THREE safety rules visitors must observe in airport restricted areas. (6 marks)

i. **Always follow instructions** given by airport security officers and guides.

ii. **Do not enter restricted zones** without proper authorization or identification.

iii. **Do not touch aircraft or equipment** unless permitted.

iv. **Remain within designated visitor paths** to avoid interfering with airport operations.

Safety rules in restricted areas

1. Follow airport security instructions
2. Wear identification badges
3. Do not enter restricted zones
4. Follow marked pathways
5. Obey safety signs
6. No photography in restricted areas
7. Do not touch equipment
8. Follow escort instructions
9. Maintain safe distance from aircraft
10. Follow emergency procedures

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 – BIOLOGY (THEORY)

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A (30 MARKS)

1. Biology and Community Problems

a) Definition of Biology

Biology is the **scientific study of living organisms and their interactions with the environment**.

Other acceptable definitions:

1. Study of living things
2. Study of plants and animals
3. Study of life and living organisms
4. Science dealing with plants, animals, and microorganisms
5. Study of structure and function of living organisms
6. Study of organisms and their environment
7. Science of life processes
8. Study of living systems

b) Ways Biology can help solve the community problems

i. **Control of malaria**

- Biology helps understand the life cycle of the mosquito that spreads Malaria.
- This knowledge helps control mosquitoes using nets, insecticides, and draining stagnant water.

ii. **Improving crop productivity**

- Biological knowledge helps farmers use improved seeds, fertilizers, and pest control methods to increase crop yields.

iii. **Water purification and sanitation**

- Biology helps identify microorganisms that contaminate water and teaches ways to purify water through boiling, filtration, or chlorination.

iv. **Disease prevention**

- Biology helps communities understand how diseases spread and how vaccination and hygiene reduce infections.

Other possible answers:

- Biological pest control
- Soil fertility management
- Environmental conservation
- Proper waste disposal

2. Branches of Biology

a) Branches and what they study

i. **Botany** – study of plants
ii. **Zoology** – study of animals
iii. **Microbiology** – study of microorganisms
iv. **Ecology** – study of organisms and their environment

Other acceptable branches:

- Genetics – study of heredity
- Anatomy – study of body structure
- Physiology – study of body functions
- Cytology – study of cells

b) Related careers

Branch	Career
Botany	Botanist / plant scientist
Zoology	Zoologist / wildlife officer
Microbiology	Microbiologist / laboratory technologist
Ecology	Environmental scientist

Other careers:

- Geneticist
- Medical doctor
- Agricultural scientist
- Biotechnologist

3. Biology Research

a) Qualities of a good biology researcher

1. Curiosity and interest in science
2. Accuracy in recording observations
3. Patience in conducting experiments

Other acceptable qualities:

- Honesty
- Critical thinking

- Good observation skills
- Objectivity
- Creativity

b) Ethical considerations

i. **Avoid harming organisms unnecessarily**

- Living organisms should be treated humanely.

ii. **Respect environmental conservation**

- Do not destroy habitats or endangered species.

iii. **Honest reporting of results**

- Data should not be falsified or manipulated.

Other acceptable ethics:

- Obtain permission before collecting specimens
- Follow laboratory safety rules
- Use organisms responsibly

4. Laboratory Safety

a) Laboratory safety rules

1. Wear protective clothing such as lab coats.
2. Do not eat or drink in the laboratory.
3. Handle chemicals and specimens carefully.
4. Follow the teacher's instructions.

Other acceptable rules:

- Label all specimens clearly
- Wash hands after experiments
- Report accidents immediately
- Do not run in the laboratory

b) Importance of proper specimen storage

i. **Prevents decomposition**

- Proper storage keeps specimens from decaying.

ii. **Preserves specimens for future study**

- Stored specimens can be used repeatedly for teaching and research.

Other reasons:

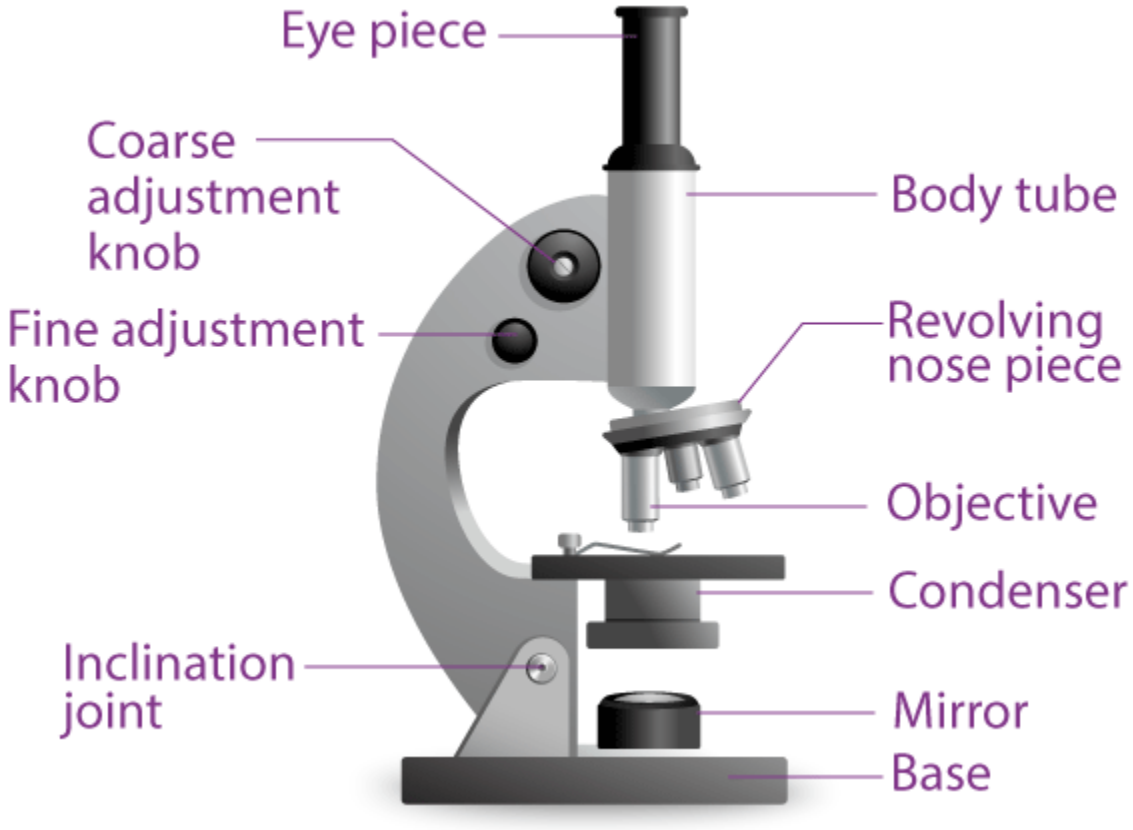
- Prevents contamination
- Maintains specimen structure

- Ensures accurate observation

SECTION B (20 MARKS)

5. Light Microscope

a) Parts of a simple microscope



Common labelled parts include:

1. Eyepiece (ocular lens)
2. Objective lens
3. Stage
4. Mirror / light source
5. Arm
6. Base
7. Coarse adjustment knob
8. Fine adjustment knob

b) Preparation of onion epidermis slide

i. Peel a thin layer of onion epidermis using forceps.
ii. Place the epidermis on a clean microscope slide.
iii. Add a drop of iodine solution or stain.
iv. Place a coverslip gently and observe under the microscope.

Additional acceptable steps:

- Add water before the coverslip

- Remove air bubbles
- Focus using low power first

c) Difference between magnification and resolution

Magnification

- Enlargement of the image of an object.

Resolution

- Ability to distinguish two close points as separate.

Other differences:

- Magnification increases size, resolution improves clarity.
- Resolution determines image detail.

6. Wet Preservation

a) Wet preservation procedure

i. Kill the specimen humanely.
ii. Fix the specimen using a preservative like formalin.
iii. Place the specimen in a jar with preservative solution.
iv. Seal the container and attach a label.

Other preservatives:

- Alcohol
- Formaldehyde solution

b) Information on specimen label

1. Name of specimen
2. Date of collection
3. Place of collection
4. Name of collector

Other acceptable details:

- Scientific name
- Habitat
- Preservative used

c) Precautions during field collection

i. Do not destroy the entire plant population.
ii. Use proper tools and protective equipment.

Other precautions:

- Obtain permission
- Label specimens immediately

SECTION C (20 MARKS)

7. Specialized Cells

a) Specialized plant cells

1. **Root hair cell** – absorbs water and minerals
2. **Guard cells** – control opening of stomata
3. **Xylem cells** – transport water
4. **Phloem cells** – transport food

Other plant cells:

- Palisade cells (photosynthesis)
- Parenchyma cells (storage)

b) Specialized animal cells

Specialised Animal Cell	Role / Function
Red blood cell (erythrocyte)	Transports oxygen from lungs to body tissues and carries carbon dioxide back to the lungs.
White blood cell (leucocyte)	Protects the body by fighting infections and destroying pathogens.
Nerve cell (neuron)	Transmits electrical impulses throughout the body for communication and coordination.
Muscle cell	Contracts and relaxes to produce movement of body parts.
Sperm cell	Male reproductive cell that fertilizes the female egg cell.
Egg cell (ovum)	Female reproductive cell that combines with sperm during fertilization to form a zygote.
Ciliated epithelial cell	Moves mucus, dust, and microorganisms out of the respiratory tract using cilia.
Goblet cell	Produces mucus to trap dust and microorganisms in the respiratory system.
Skin cell (epithelial cell)	Forms protective covering of the body and prevents entry of pathogens.
Bone cell (osteocyte)	Forms and maintains bone tissue and provides structural support.
Fat cell (adipocyte)	Stores energy in the form of fat and helps insulate the body.
Liver cell (hepatocyte)	Carries out metabolism, detoxification, and production of bile.
Intestinal cell (absorptive cell)	Absorbs digested nutrients from food in the small intestine.
Cartilage cell (chondrocyte)	Forms cartilage which supports joints and flexible body parts.
Stem cell	Can divide and develop into different types of specialised cells.

c) Structure and function

Specialized cell: **Red blood cell**

Structural adaptations:

i. Biconcave shape increases surface area for oxygen transport.
ii. Lack of nucleus provides more space for haemoglobin.

8. Levels of Organization

a) Smallest to largest

Organelle → Cell → Tissue → Organ → Organ system

b) Examples

Level	Example
Organ	Heart
Tissue	Muscle tissue
Organ system	Digestive system
Organelle	Mitochondrion
Cell	Nerve cell

1. Organ (Examples)

- Heart
- Brain
- Lungs
- Liver
- Kidney
- Stomach
- Small intestine
- Large intestine
- Skin
- Pancreas
- Spleen
- Eye
- Ear
- Tongue
- Nose
- Gall bladder
- Urinary bladder
- Uterus
- Ovary
- Testis

2. Tissue (Examples)

- Muscle tissue
- Nervous tissue
- Epithelial tissue
- Connective tissue
- Blood tissue
- Bone tissue
- Cartilage tissue
- Fat (adipose) tissue
- Cardiac muscle tissue
- Smooth muscle tissue
- Skeletal muscle tissue
- Areolar tissue
- Tendon tissue
- Ligament tissue

3. Organ System (Examples)

- Digestive system
- Respiratory system
- Circulatory system

- Nervous system
- Skeletal system
- Muscular system
- Reproductive system
- Urinary (excretory) system
- Endocrine system
- Immune system
- Lymphatic system
- Integumentary system

4. Organelle (Examples)

- Mitochondrion
- Nucleus
- Ribosome
- Golgi apparatus
- Endoplasmic reticulum
- Lysosome
- Vacuole
- Chloroplast (in plant cells)
- Cytoplasm
- Cell membrane
- Nucleolus
- Centrosome
- Centriole
- Plastids

5. Cell (Examples)

- Nerve cell (neuron)
- Red blood cell
- White blood cell
- Muscle cell
- Skin cell
- Bone cell
- Sperm cell
- Egg cell (ovum)
- Fat cell
- Liver cell
- Epithelial cell
- Root hair cell (plant)
- Guard cell (plant)
- Palisade cell (plant)

c) Roles

Tissue

- Group of similar cells performing a specific function.

Organ

- Structure made of tissues working together to perform a function.

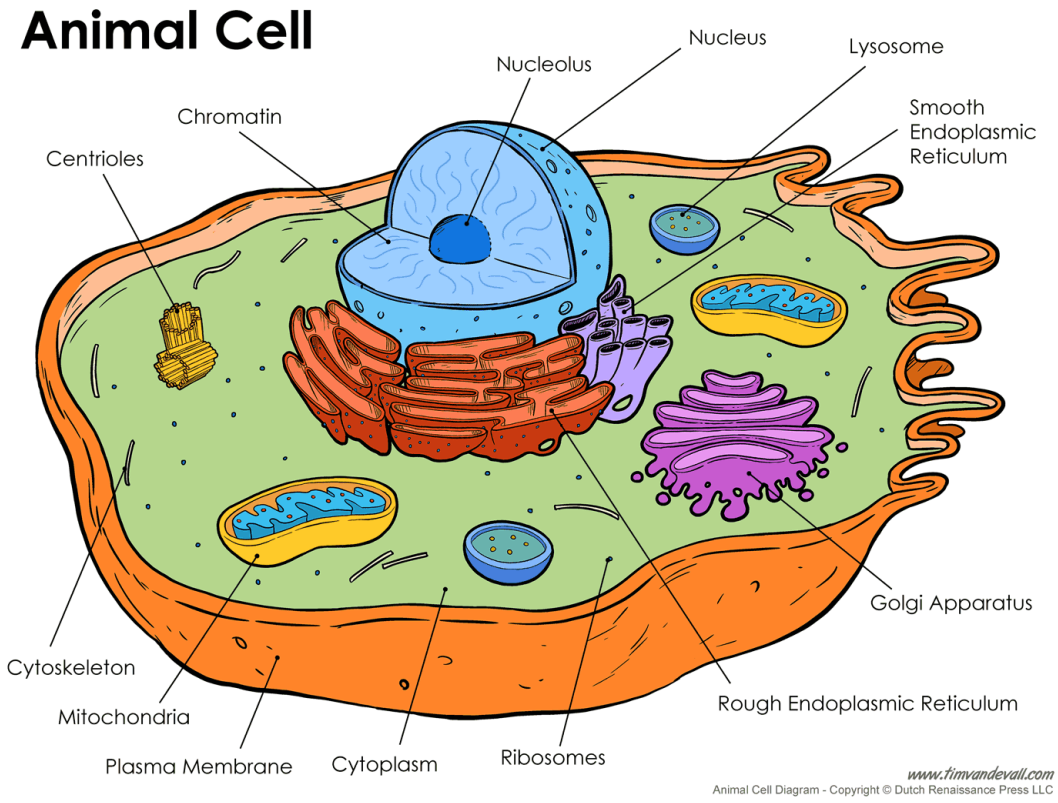
d) Organ systems working together

i. The respiratory system supplies oxygen while the circulatory system transports it to body cells.
ii. The digestive system provides nutrients while the circulatory system distributes them throughout the body.

9. Cell Parts

Since the diagram is not visible, common answers include:

Part	Name
C	Nucleolus
D	Nucleus
E	Lysosome
F	Smooth endoplasmic reticulum
G	Golgi apparatus
H	rough endoplasmic reticulum
J	Cytoplasm
K	Cell membrane
L	Mitochondrion



KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 – BUILDING CONSTRUCTION (THEORY)

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

SECTION A (30 MARKS)

1. Definition and Importance of Buildings

a) Definition of a building

A **building** is a structure constructed with materials such as stone, wood, concrete, or metal that provides shelter, space, and protection for people, animals, or property.

Other acceptable wording:

- A structure designed for human habitation or use.
- A permanent structure used for shelter and activities.

b) Reasons buildings are important

i. Provide **shelter and protection** from weather conditions.
ii. Provide **space for living, working, and storing property**.

Other acceptable answers:

- Provide security for people and property
- Provide places for education and business
- Provide storage facilities

c) Ways buildings provide comfort and protection

i. Buildings **protect occupants from harsh weather** such as rain, wind, and extreme sunlight.

ii. Buildings **provide privacy, safety, and controlled indoor conditions** such as ventilation and temperature.

Other possible answers:

- Protection from wild animals
- Protection from thieves
- Provide controlled lighting and airflow

2. Classification of Buildings

a) Buildings classified by function

i. Residential buildings
ii. Commercial buildings
iii. Industrial buildings

Other acceptable categories:

- Institutional buildings
- Agricultural buildings

b) Examples

Category	Example
Residential	House
Commercial	Shop or office
Industrial	Factory

Other examples:

Residential → apartment
Commercial → bank
Industrial → warehouse

3. Early and Modern Buildings

a) Early human shelters

i. Caves
ii. Tree houses

Other acceptable answers:

- Tents
- Huts made from grass or mud
- Rock shelters

b) Features of traditional buildings

i. Built using **locally available materials** such as mud, grass, and wood.
ii. Constructed using **simple tools and traditional methods**.

Other features:

- Thatched roofs
- Mud walls
- Small windows

c) Features of modern buildings

i. Use of **modern construction materials** such as concrete, steel, and glass.
ii. Use of **advanced technology and machinery in construction**.

Other features:

- Electricity and plumbing systems
- Strong foundations
- Modern designs

4. Components of a Building

a) Main components

i. Foundation
ii. Walls
iii. Roof

b) Functions

i. **Foundation** – supports the building and transfers its weight to the ground.

ii. **Walls** – enclose the building and provide support for the roof.

iii. **Roof** – protects the building from weather conditions.

c) Importance of proper site selection

i. Ensures **stability and safety of the building** by choosing strong soil.

ii. Prevents **construction problems such as flooding or poor drainage**.

Other acceptable reasons:

- Accessibility to roads and services
- Availability of water and electricity

SECTION B (40 MARKS)

5. Site Selection

a) Factors to consider

i. **Soil type** – should be strong enough to support the building.
ii. **Drainage** – the site should not be waterlogged.
iii. **Accessibility** – availability of roads and transport.
iv. **Availability of utilities** – water, electricity, sewer systems.
v. **Topography** – land slope should allow easy construction.

Other acceptable factors:

- Security of the area
- Climate conditions
- Environmental impact

b) Safety measures during site preparation

i. Wear **protective equipment** such as helmets and boots.

ii. Remove **dangerous obstacles** like sharp objects and unstable trees.

iii. Use **proper tools and follow safety instructions**.

Other answers:

- Put warning signs around the site
- Supervise workers

c) Dangers of improper disposal of building waste

i. Causes **environmental pollution**.

ii. Can cause **injuries or accidents** on the construction site.

Other dangers:

- Blocks drainage systems
- Creates health hazards

6. Tools for Site Clearing

a) Hand tools used

i. Panga (machete)
ii. Axe
iii. Shovel
iv. Hoe
v. Rake

Other possible tools:

- Spade
- Wheelbarrow
- Pickaxe

b) Tool use and maintenance

Tool	Use	Maintenance
Panga	Cutting bushes and small trees	Sharpen blade regularly
Shovel	Digging and moving soil	Clean after use
Axe	Cutting tree trunks	Keep blade sharp and store in dry place

Other maintenance practices:

- Oil metal parts
- Store tools properly
- Replace damaged handles

7. Site Levelling Methods

i) Cut method

i. Removing soil from **higher ground** to make the surface level.
ii. Used when the site is **too elevated**.

ii) Fill method

i. Adding soil to **lower areas** to raise the ground level.
ii. Used when the site has **depressions or low spots**.

iii) Cut and fill method

i. Soil is **removed from high areas** and used to fill low areas.
ii. Helps create a **balanced and level surface**.

b) Environmentally friendly waste disposal

i. **Recycling building materials** such as metal, wood, and bricks.

ii. **Reusing materials** in other construction projects.

Other acceptable answers:

- Transport waste to approved dumping sites
- Compost biodegradable waste

8. Functions of Building Parts

i) Floor

i. Provides a **flat surface for occupants to walk and place furniture**.
ii. Supports the **weight of people and objects inside the building**.

ii) Wall

i. Encloses the building and **provides privacy and security**.
ii. Supports the **roof and upper parts of the building**.

iii) Roof

i. Protects the building from **rain, sun, and wind**.
ii. Helps **drain rainwater away from the structure**.

b) Importance of doors and windows

i. Provide **ventilation and natural lighting** inside the building.

ii. Allow **entry and exit of people** and provide security.

Other acceptable answers:

- Improve comfort inside buildings
- Allow emergency escape

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 – BUSINESS STUDIES (THEORY)

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

1. Role of Money

a) Define money. (2 marks)

Money is **anything that is generally accepted as a medium of exchange for goods and services and settlement of debts**.

b) FOUR functions of money (4 marks)

i. **Medium of exchange** – money is used to buy and sell goods and services.

ii. **Measure of value** – it helps determine the price of goods and services.

iii. **Store of value** – money can be saved and used in the future.

iv. **Standard of deferred payment** – money can be used to pay debts at a later date.

c) FOUR security features on Kenyan banknotes (4 marks)

i. **Watermark** visible when held against light.

ii. **Security thread** embedded in the note.

iii. **See-through register** that forms a complete image when viewed in light.

iv. **Raised printing / intaglio printing** that can be felt by touch.

Other acceptable answers:

- Micro lettering
- Colour changing ink
- Serial numbers

2. Ethical Practices in Money Handling

a) Distinguish between ethical and unethical practices (4 marks)

Ethical practices refer to **honest, transparent, and responsible handling of money according to rules and moral standards**.

Unethical practices refer to **dishonest or illegal actions in handling money such as fraud, theft, corruption, or misuse of funds**.

b) THREE ethical practices promoting accountability (6 marks)

i. **Keeping accurate financial records** so that all transactions are clearly documented.

ii. **Proper authorization of payments** to ensure funds are used for the intended purpose.

iii. **Regular auditing and financial reporting** to check that money is properly used.

Other acceptable answers:

- Issuing receipts for payments
- Separation of duties in handling money

3. Financial Goals

a) Define a financial goal (2 marks)

A **financial goal** is a planned target that an individual or business intends to achieve regarding the use, saving, or investment of money within a specific period.

b) THREE benefits of setting financial goals (6 marks)

i. **Helps in proper financial planning** and use of resources.

ii. **Guides decision making** on spending, saving, and investing.

iii. **Encourages saving and financial discipline**.

Other acceptable points:

- Helps measure business progress
- Helps avoid unnecessary spending

c) TWO factors to consider when setting financial goals (2 marks)

i. **Amount of available income or capital**.

ii. **Time period required to achieve the goal**.

Other possible answers:

- Business priorities
- Market conditions

4. Budgeting

a) Define budgeting (2 marks)

Budgeting is the **process of preparing a plan showing expected income and expenditure over a specific period of time**.

b) THREE types of budgets (6 marks)

i. **Income budget** – shows expected income for a given period.

ii. **Expenditure budget** – shows expected expenses.

iii. **Cash budget** – shows expected cash inflows and outflows.

Other acceptable answers:

- Sales budget
- Production budget

c) Simple monthly budget (5 marks)

Item	Amount (KES)
Income	
Monthly income	1,500
Total Income	**1,500**
Expenses	**Amount (KES)**
Food	800
Transport	300
Personal items	200
Total Expenses	**1,300**

Savings = Income – Expenses

Savings = 1500 – 1300 = **KES 200**

d) TWO benefits of budgeting (2 marks)

i. Helps control and manage spending.

ii. Helps in planning and allocating financial resources.

5. Banking

a) Define a bank (2 marks)

A **bank is a financial institution that accepts deposits from customers and provides financial services such as loans and money transfer**.

b) TWO roles of banks in promoting economic growth (4 marks)

i. **Providing loans and credit** to businesses for expansion and investment.

ii. **Encouraging savings** which increases funds available for investment.

Other acceptable answers:

- Facilitating trade through payment services
- Supporting financial inclusion

c) THREE types of bank accounts in Kenya (4 marks)

i. **Savings account** – allows customers to save money and earn interest.

ii. **Current account** – used mainly by businesses for frequent transactions.

iii. **Fixed deposit account** – money is deposited for a fixed period to earn higher interest.

6. Financial Accountability

a) THREE risks of unethical financial management (3 marks)

i. **Loss of funds through fraud or corruption**.

ii. **Loss of trust from customers or donors**.

iii. **Legal penalties or closure of the business**.

b) Measures to ensure transparency and accountability (7 marks)

i. Keeping accurate financial records.

ii. Conducting regular financial audits.

iii. Issuing receipts for all payments received.

iv. Following proper authorization procedures for spending.

v. Separating duties among employees handling finances.

Other acceptable answers:

- Using accounting systems
- Public financial reporting

7. Entrepreneurship

a) Define entrepreneurship (2 marks)

Entrepreneurship is the **process of identifying a business opportunity, organizing resources, and taking risks to start and manage a business for profit**.

b) THREE qualities of a successful entrepreneur (6 marks)

i. **Creativity and innovation** – ability to develop new ideas or products.

ii. **Risk-taking ability** – willingness to invest resources despite uncertainty.

iii. **Hard work and determination** – persistence in achieving business goals.

Other qualities:

- Leadership skills
- Self-confidence
- Good decision making

c) FOUR factors influencing business location (4 marks)

i. Availability of customers or market.

ii. Availability of transport and accessibility.

iii. Cost of rent or land.

iv. Availability of utilities such as water and electricity.

Other factors:

- Security of the area
- Government regulations

d) Importance of a business plan (3 marks)

i. Helps guide the entrepreneur in running the business.

ii. Helps obtain funding from banks or investors.

iii. Helps identify potential risks and opportunities.

8. Business Records

a) TWO reasons for keeping business records (2 marks)

i. Helps monitor business performance and profit.

ii. Helps in making informed business decisions.

b) THREE types of transactions recorded (6 marks)

i. **Sales transactions** – money received from selling goods or services.

ii. **Purchase transactions** – buying goods or materials for the business.

iii. **Expense transactions** – payments for costs such as rent, wages, or transport.

c) TWO consequences of poor record keeping (2 marks)

i. Difficulty in determining profit or loss.

ii. Poor decision making due to lack of accurate information.

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 – CHEMISTRY THEORY)

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A

1.

a) Define Chemistry. (2 marks)

Chemistry is the **branch of science that studies the composition, structure, properties and changes of matter.**

b) FOUR ways Chemistry contributes to daily life. (4 marks)

i. Chemistry helps farmers **produce fertilisers that improve soil fertility and increase crop yields.**
ii. Chemistry is used by pharmacists to **manufacture medicines that treat and prevent diseases.**
iii. Chemistry is used in **production and refining of fuels such as petrol and diesel for energy.**
iv. Chemistry is used in industries to **manufacture plastics and other useful materials.**

c) THREE reasons why learning Chemistry is important. (3 marks)

i. Helps people **understand natural processes and chemical reactions.**
ii. Leads to **development of medicines, food products and industrial materials.**
iii. Promotes **technological and economic development.**

d) Example of a chemical product in daily life. (1 mark)

Soap / fertiliser / plastic / medicine / fuel / detergent.

2. a) FOUR branches of Chemistry. (8 marks)

i. **Organic chemistry** – study of carbon compounds such as hydrocarbons.
ii. **Inorganic chemistry** – study of elements and compounds other than carbon compounds.
iii. **Physical chemistry** – study of energy changes and rates of chemical reactions.
iv. **Analytical chemistry** – study of methods used to determine composition of substances.

b) THREE careers requiring Chemistry knowledge. (3 marks)

i. Pharmacist
ii. Chemical engineer
iii. Laboratory technician

Other acceptable answers: teacher, doctor, environmental scientist, food technologist.

3. a) FOUR applications of Chemistry in industry. (8 marks)

i. Manufacture of **fertilisers and pesticides in agriculture.**
ii. Production and preservation of **processed foods.**
iii. Manufacture of **medicines and pharmaceutical drugs.**
iv. Refining of **petroleum products such as petrol and diesel.**

b) TWO economic benefits of Chemistry. (2 marks)

i. Creation of **employment opportunities in industries.**
ii. Promotion of **industrial growth and national income.**

4. a)

i) Drug
A drug is a **chemical substance used to treat, prevent or diagnose diseases.**

ii) Prescription
A prescription is a **written instruction from a qualified medical practitioner authorising a patient to receive medicine.**

iii) Dosage
Dosage is the **correct amount of medicine to be taken at a specific time.**

b) THREE effects of drug abuse on learners. (6 marks)

i. Poor academic performance and loss of concentration.
ii. Health problems such as addiction, mental illness and organ damage.
iii. Indiscipline and involvement in crime or violence.

c) Responsibility of students in promoting a safe environment. (1 mark)

Avoid drug abuse and **report harmful behaviour to teachers or authorities.**

5. Rutherford's Experiment

a) TWO observations. (2 marks)

i. Most alpha particles **passed straight through the gold foil.**
ii. A few particles were **deflected or bounced back.**

b) TWO conclusions. (2 marks)

i. Most of the atom is **empty space.**
ii. The atom has a **small dense positively charged nucleus.**

c) TWO sub-atomic particles. (2 marks)

i. Proton
ii. Electron

(Neutron also acceptable)

d) i) Atomic number
The number of protons in the nucleus of an atom.

ii) Mass number
The total number of **protons and neutrons in the nucleus.**

6. a)

i) Strongly acidic solution → **P**
ii) Strongly basic solution → **Q**
iii) Neutral solution → **R**

b) Uses

i. **Acids:** manufacture of fertilisers, car batteries, food preservation.
ii. **Bases:** making soap, cleaning agents, neutralising acids.

7. a) Define isotopes. (2 marks)

Isotopes are **atoms of the same element that have the same atomic number but different mass numbers due to different numbers of neutrons.**

b) Relative Atomic Mass Calculation (4 marks)

$RAM = \frac{(35\times70)+(37\times30)}{100} = \frac{2450+1110}{100} = \frac{3560}{100}\ RAM = 35.6$

8. Electron configuration: 2.8.7

a) i) Period → 3
ii) Group → 7 (Group 17)

b) Chemical family

Halogens

c) Type of ion formed

Y forms a **negative ion (Y^-)** because it **gains one electron to complete its outer shell.**

d) TWO reasons noble gases are stable

i. They have **full outer electron shells.**
ii. They **do not easily gain or lose electrons.**

e) Examples

i) Alkali metal → **Sodium (Na)** / Potassium (K)
ii) Halogen → **Chlorine (Cl)** / Fluorine (F)
iii) Noble gas → **Helium (He)** / Neon (Ne) / Argon (Ar)

9. a) Electron arrangement (s and p notation)

i) **Na^+**

Na = $1s^2\ 2s^2\ 2p^6\ 3s^1$
Na^+ = **$1s^2\ 2s^2\ 2p^6$**

ii) **O^{2-}**

O = $1s^2\ 2s^2\ 2p^4$
O^{2-} = **$1s^2\ 2s^2\ 2p^6$**

b) Formula using valency

i) Magnesium chloride → **$MgCl_2$**
ii) Aluminium oxide → **Al_2O_3**

c) Balanced equation

$$4Fe(s) + 3O_2(g) \rightarrow 2Fe_2O_3(s)$$

d) Observations

i. A **reddish-brown substance (rust) forms.**
ii. Iron **slowly corrodes in presence of oxygen and moisture.**

10.

a) Uses of isotopes (4 marks)

i. In medicine isotopes are used in **diagnosis and treatment of diseases (e.g., cancer radiotherapy).**
ii. In industry isotopes are used in **detecting leaks in pipelines and measuring thickness of materials.**

b) Environmental applications of Chemistry (4 marks)

i. **Water treatment and purification** to make water safe for drinking.
ii. **Pollution control**, such as treatment of industrial waste and reducing harmful emissions.

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 – COMPUTER SCIENCE (THEORY)

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

1. Early Computing Devices

a) FOUR early computing devices and their uses (8 marks)

Early Computing Device	Use
Abacus	Used for basic arithmetic calculations such as addition and subtraction.
Napier's Bones	Used to perform multiplication and division calculations.
Pascaline (Pascal Calculator)	Used for performing addition and subtraction automatically.
Difference Engine (Charles Babbage)	Used to calculate mathematical tables automatically.

Other acceptable answers:

- Analytical Engine
- Slide Rule

b) Reason early mechanical devices led to electronic computers (1 mark)

Mechanical devices were **slow and limited in processing capability**, which led scientists to develop **faster and more efficient electronic computers**.

c) Define a computer (1 mark)

A **computer is an electronic device that accepts data as input, processes it according to instructions, stores it, and produces output as information**.

2. Computer Generations

a) Technology used in each generation (5 marks)

i) **First generation** – Vacuum tubes

ii) **Second generation** – Transistors

iii) **Third generation** – Integrated circuits (ICs)

iv) **Fourth generation** – Microprocessors

v) **Fifth generation** – Artificial Intelligence and advanced parallel processing

b) THREE technological improvements across generations (3 marks)

i. **Increase in processing speed** due to advanced electronic components.

ii. **Reduction in computer size** from large machines to small portable devices.

iii. **Improved storage capacity and memory efficiency**.

Other possible points:

- Reduced power consumption
- Improved reliability

c) TWO ways computer evolution influenced modern society (2 marks)

i. Improved **communication through the internet and digital platforms**.

ii. Increased **efficiency in business, education, and research**.

3. Functional Components of a Computer

a) FIVE functional components (5 marks)

i. Input devices

ii. Output devices

iii. Central Processing Unit (CPU)

iv. Memory (Primary storage)

v. Secondary storage

b) Relationship between CPU, memory, and I/O devices (3 marks)

i. **Input devices send data to the computer system**.

ii. The **CPU processes the data using instructions stored in memory**.

iii. The **processed information is sent to output devices for the user**.

4. Number System Conversions

a) Convert the following numbers (6 marks)

i) 45_{10} ***→ Binary***

45 ÷ 2 method

Division	Remainder
45 ÷ 2	1

22 ÷ 2	0
11 ÷ 2	1
5 ÷ 2	1
2 ÷ 2	0
1 ÷ 2	1

Binary (from bottom upward):

101101_2

ii) 11011_2 → Decimal

Calculation:

$1\times2^4 + 1\times2^3 + 0\times2^2 + 1\times2^1 + 1\times2^0$

$= 16 + 8 + 0 + 2 + 1$

$= \mathbf{27_{10}}$

iii) $7A_{16}$ → Decimal

A = 10

Calculation:

$7\times16^1 + 10\times16^0$

$= 7\times16 + 10\times1$

$= 112 + 10$

$= \mathbf{122_{10}}$

b) TWO reasons computers use binary (2 marks)

i. Electronic circuits **operate using two states (ON and OFF)**.

ii. Binary **simplifies data processing and improves reliability**.

5. Processor Architecture

a) Define

i) RISC architecture

Reduced Instruction Set Computer (RISC) is a processor design that uses **a small number of simple instructions executed very quickly**.

ii) CISC architecture

Complex Instruction Set Computer (CISC) is a processor design that uses **a large set of complex instructions capable of performing multiple operations**.

b) THREE differences between RISC and CISC (4 marks)

RISC	CISC
Uses few simple instructions	Uses many complex instructions
Faster execution per instruction	Slower instruction execution
Requires more instructions to complete tasks	Fewer instructions needed for tasks

6. Input and Output Devices

a) Classification (5 marks)

Device	Type	Category
Keyboard	Input	Text input device
Mouse	Input	Pointing device
Scanner	Input	Image input device
Printer	Output	Hard copy output device
Touch screen	Input & Output	Interactive device

b) THREE factors when selecting I/O devices (3 marks)

i. **Cost of the device**

ii. **Compatibility with the computer system**

iii. **Speed and efficiency**

Other factors:

- Reliability
- Ease of use

c) TWO advantages of touch screens (2 marks)

i. **Easy and quick interaction with the computer system**.

ii. **Reduces need for additional input devices like mouse or keyboard**.

7. Storage

a) Differentiate

i) Primary vs Secondary Storage

Primary Storage	Secondary Storage
Temporary storage used by CPU	Permanent storage for data
Faster access	Slower access
Examples: RAM, ROM	Examples: Hard disk, flash drive

ii) RAM vs ROM

RAM	ROM
Volatile memory (data lost when power off)	Non-volatile memory
Used for temporary data processing	Stores permanent instructions
Read and write	Mostly read only

b) FOUR secondary storage devices (4 marks)

Device	Type
Hard Disk Drive (HDD)	Internal
Solid State Drive (SSD)	Internal
USB Flash Drive	External
CD/DVD	External

8. Fetch–Execute Cycle

a) Define the fetch-execute cycle (2 marks)

The **fetch-execute cycle is the process by which the CPU retrieves instructions from memory, decodes them, and executes them**.

b) FOUR stages of the cycle (4 marks)

i. **Fetch** – the CPU retrieves the instruction from memory.

ii. **Decode** – the CPU interprets the instruction.

iii. **Execute** – the CPU performs the required operation.

iv. **Store** – the result is stored in memory or sent to output.

9. Software

a) Difference between system software and application software (4 marks)

System Software	Application Software
Manages and controls computer hardware	Performs specific user tasks
Runs the computer system	Used by users for work

b) TWO examples of each (4 marks)

System Software

- Operating system (Windows, Linux)
- Device drivers

Application Software

- Word processors
- Spreadsheet programs

Examples:

- Microsoft Word
- Excel

10. Impact of Computers

a) TWO ways computers transformed education and business (4 marks)

i. **Education** – computers enable online learning, digital libraries, and research.

ii. **Business** – computers improve record keeping, communication, and transaction processing.

b) TWO safety precautions in a computer laboratory (2 marks)

i. **Do not eat or drink near computers** to prevent damage.

ii. **Handle computer equipment carefully and follow laboratory rules**.

Other acceptable answers:

- Avoid touching cables with wet hands
- Shut down computers properly

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 – CRE (THEORY)

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

1. The Bible

a) Define the Bible and explain its significance to Christians (3 marks)

The **Bible** is the **holy book of Christians containing the Word of God written by inspired human authors**.

Significance:

1. It teaches people about **God and His nature**.
2. It guides believers on **how to live a righteous life**.
3. It provides **moral values and ethical teachings**.
4. It strengthens the **faith of Christians**.
5. It gives **hope and encouragement during difficult times**.
6. It helps believers **understand the will of God**.
7. It teaches about **salvation through Jesus Christ**.
8. It promotes **love, peace, and unity among people**.
9. It helps people **distinguish between right and wrong**.
10. It is used as a **guide for prayer and worship**.
11. It provides **teachings about forgiveness**.
12. It encourages **repentance from sin**.
13. It helps Christians **grow spiritually**.
14. It teaches about **God's commandments and laws**.
15. It provides **examples of faithful people in history**.
16. It strengthens **Christian beliefs and doctrines**.
17. It guides church **teachings and preaching**.
18. It is used during **Christian ceremonies such as weddings and funerals**.
19. It teaches about **God's promises to humanity**.
20. It helps Christians **develop patience and perseverance**.
21. It promotes **good relationships among people**.
22. It encourages **service to others**.
23. It guides leaders in **making fair and just decisions**.
24. It teaches about **justice and fairness**.
25. It warns people about **the consequences of sin**.
26. It inspires people to **live holy lives**.
27. It helps people **overcome temptations**.
28. It promotes **peaceful coexistence in society**.
29. It provides **wisdom and knowledge**.
30. It teaches about **the creation of the world**.

31. It explains **the relationship between God and humans**.
32. It gives comfort to people **during suffering and loss**.
33. It encourages **honesty and integrity**.
34. It helps Christians **understand God's plan for humanity**.
35. It encourages **obedience to God's commandments**.
36. It helps in **teaching children good values**.
37. It promotes **discipline and self-control**.
38. It guides Christians in **daily decision making**.
39. It encourages believers to **spread the gospel**.
40. It prepares believers for **eternal life according to Christian belief**.
41. It guides Christians on how to live according to God's will.
42. It teaches about salvation through Jesus Christ.

b) FIVE reasons why the Bible is considered the inspired Word of God (5 marks)

i. The Bible writers were **guided by the Holy Spirit** when writing the scriptures (2 Timothy 3:16).

ii. The Bible contains **God's message and teachings for humanity**.

iii. Many **prophecies in the Bible have been fulfilled**, proving divine inspiration.

iv. The Bible has **remained consistent and relevant for many generations**.

v. It reveals **God's plan of salvation through Jesus Christ**.

c) TWO ways Christians should respect the Bible (2 marks)

i. **Handle the Bible carefully and keep it in a clean place**.

ii. **Read and follow its teachings regularly**.

Other acceptable answers:

- Avoid misusing it
- Use it during prayer and worship

2. Inspiration of the Bible

a) How God inspired human authors (4 marks)

i. God used **the Holy Spirit to guide the writers** in recording His message.

ii. God allowed writers to use **their own language, culture, and experiences**.

iii. Some authors received **visions and dreams from God**.

iv. Others recorded **historical events guided by God's inspiration**.

b) THREE Old Testament authors and their books (3 marks)

Author	Book
Moses	Genesis
David	Psalms
Solomon	Proverbs

Other examples:

- Isaiah → Book of Isaiah
- Jeremiah → Book of Jeremiah

c) THREE qualities God required of those who wrote Scripture (3 marks)

i. **Faithfulness to God**.

ii. **Obedience to God's instructions**.

iii. **Commitment to truth and righteousness**.

Other acceptable answers:

- Wisdom
- Spiritual maturity

3. Categories of Old Testament Books

a) FIVE categories (5 marks)

i. **Law (Pentateuch)**

ii. **Historical books**

iii. **Poetical/Wisdom books**

iv. **Major prophets**

v. **Minor prophets**

b) Example of a book from each category (5 marks)

Category	Example
Law	Genesis
Historical	Joshua
Poetical	Psalms
Major Prophets	Isaiah
Minor Prophets	Hosea

c) TWO benefits of grouping Bible books (2 marks)

i. Helps readers **understand the type of message in each book**.

ii. Makes it **easier to study and locate books in the Bible**.

4. Literary Forms in the Bible

a) FIVE literary forms (5 marks)

i. **Poetry**

ii. **Narratives (stories)**

iii. **Parables**

iv. **Prophecy**

v. **Proverbs (wise sayings)**

Other acceptable answers:

- Letters (epistles)
- Songs

b) Literary form of Proverbs (1 mark)

Wisdom literature / Proverbs (wise sayings).

c) Importance of understanding literary forms (2 marks)

i. Helps readers **interpret the Bible correctly**.

ii. Helps understand the **message and context of scriptures**.

5. Methods of Studying the Bible

a) FIVE Bible study methods (5 marks)

i. **Reading the Bible regularly**

ii. **Meditation on scripture**

iii. **Group Bible study**

iv. **Using commentaries or study guides**

v. **Listening to sermons and teachings**

b) TWO benefits of regular Bible study (2 marks)

i. Helps Christians **grow spiritually**.

ii. Helps believers **understand God's will for their lives**.

c) ONE career related to C.R.E (1 mark)

i. **Pastor / Priest / Minister**

Other possible answers:

- Theology lecturer
- Christian counsellor
- Missionary

6. Sin and the Fall

a) Define sin (2 marks)

Sin is **disobedience to God's commands or acting against His will**.

Reference: **Genesis 3**

b) THREE consequences of sin after the Fall (3 marks)

i. **Separation between God and human beings**.

ii. **Suffering, pain, and death entered the world**.

iii. **Humans were expelled from the Garden of Eden**.

iv. **Hard labour and difficulties in life**.

c) TWO privileges humans enjoyed before sin (2 marks)

i. **Direct fellowship with God**.

ii. **Peaceful life in the Garden of Eden**.

Other answers:

- Authority over creation
- No suffering or death

d) ONE way God demonstrated His love after the Fall (1 mark)

i. God **promised a Savior (Jesus Christ) to redeem humanity** (Genesis 3:15).

7. Redemption

a) Define redemption (2 marks)

Redemption is **God's act of saving humanity from sin through Jesus Christ**.

b) THREE steps in God's redemptive plan (6 marks)

i. **God promised a Savior after the Fall** (Genesis 3:15).

ii. **Jesus Christ came to earth, died on the cross, and rose again** to save humanity (John 3:16).

iii. **People receive salvation through faith and repentance**.

c) TWO ways Christians respond to God's salvation plan (2 marks)

i. **Repenting from sin**.

ii. **Accepting Jesus Christ as Lord and Savior**.

8. Stewardship

a) Define stewardship (2 marks)

Stewardship is the **responsible management and care of resources that God has entrusted to human beings**.

b) FOUR qualities of a good steward (4 marks)

i. **Faithfulness**

ii. **Responsibility**

iii. **Honesty**

iv. **Accountability**

Other acceptable answers:

- Discipline
- Hard work

c) TWO ways students practice stewardship (2 marks)

i. **Taking care of school property such as books and desks**.

ii. **Using time and talents wisely**.

9. God's Provision During the Exodus

a) THREE ways God provided for Israelites (6 marks)

i. God provided **manna from heaven for food** (Exodus 16).

ii. God provided **water from the rock** (Exodus 17).

iii. God guided them using a **pillar of cloud during the day and fire at night** (Exodus 13:21).

Other answers:

- Protection from enemies
- Provision of quails

b) TWO lessons Christians learn from Exodus (4 marks)

i. **God provides for those who trust Him**.

ii. **Obedience to God leads to blessings**.

10. Covenant

a) Define a covenant (2 marks)

A covenant is **a sacred agreement or promise between God and His people**.

Example: **Sinai Covenant (Exodus 19–24)**.

b) FOUR responsibilities of Israelites under Sinai covenant (4 marks)

i. **Worship only the one true God**.

ii. **Obey the Ten Commandments**.

iii. **Keep the Sabbath holy**.

iv. **Live righteous and moral lives**.

c) FOUR ways Christians apply the Ten Commandments today (4 marks)

i. **Worshiping God alone**.

ii. **Honoring parents and elders**.

iii. **Avoiding theft, murder, and lying**.

iv. **Respecting others and living morally**.

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 – COMMUNITY SERVICE LEARNING (THEORY)

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A

1. Understanding Community and CSL

a) Definitions

i) Community

A **community** is a group of people living in the same area or sharing common interests, culture, values, or goals and working together to improve their welfare.

ii) Community Service Learning (CSL)

Community Service Learning is an **educational approach that combines community service activities with academic learning and reflection to solve community problems while gaining knowledge and skills.**

b) Differences between CSL and ordinary community service

1. CSL combines **learning objectives with service activities**.
2. CSL is **part of the school curriculum** while ordinary service may be voluntary.
3. CSL involves **reflection and evaluation after activities**.
4. CSL connects **academic subjects to real-life community problems**.

Other possible answers:
5. CSL promotes **skill development**.
6. CSL involves **structured supervision by teachers**.
7. CSL requires **documentation of learning outcomes**.

c) ONE CSL principle ensuring effective learning

Reflection

Other acceptable answers:

- Active participation
- Collaboration
- Community partnership

2. Benefits of integrating CSL in schools

a) FOUR benefits

1. Develops **problem-solving skills**.
2. Encourages **teamwork and collaboration**.
3. Helps learners apply **classroom knowledge in real life**.
4. Promotes **social responsibility and citizenship**.

Other possible answers:
5. Builds leadership skills
6. Improves communication skills
7. Strengthens school–community relationships
8. Builds empathy and compassion
9. Enhances critical thinking
10. Encourages volunteerism

b) TWO ways CSL promotes responsible citizenship

1. Encourages **active participation in community development**.
2. Teaches learners **respect for community values and diversity**.

Other answers:

- Promotes accountability
- Encourages environmental responsibility

3. Civic Identity

a) Definition

Civic identity refers to **a person's sense of responsibility and commitment to participate actively in improving their community and society.**

b) FOUR roles learners can perform

1. Participating in **community clean-up exercises**.
2. Educating the public on **health and hygiene**.
3. Volunteering in **community development projects**.
4. Protecting the **environment**.

Other answers:
5. Tree planting
6. Supporting vulnerable groups
7. Participating in public awareness campaigns
8. Promoting peace and unity
9. Assisting in community education programs

c) TWO benefits of CSL to the community

1. Helps solve **local community problems**.
2. Improves **community development and welfare**.

Other answers:

- Improves environmental conditions
- Promotes cooperation between schools and communities

4. Community Needs

a) FIVE community needs addressed by CSL

1. Environmental needs
2. Health needs
3. Educational needs
4. Social needs
5. Economic needs

Other possible answers:
6. Security needs
7. Infrastructure needs
8. Sanitation needs
9. Water supply needs
10. Youth development needs

b) Examples

Environmental need → **Tree planting**

Health need → **Clean water campaigns**

Educational need → **Literacy programs**

c) Importance of identifying community needs

1. Ensures the project **addresses real problems**.
2. Helps **plan effective and relevant activities**.

Other answers:

- Saves resources
- Improves project success

5. Community Resources

a) Definition

Community resources are **people, materials, institutions, or facilities available in a community that can support development activities.**

b) FOUR types of community resources

1. Human resources
2. Natural resources
3. Financial resources
4. Institutional resources

Other answers:

5. Technological resources
6. Infrastructure resources
7. Educational resources

c) TWO community stakeholders

1. Local government authorities
2. Community leaders

Other answers:

- NGOs
- Religious leaders
- Health workers
- Teachers

d) Roles of stakeholders

1. Provide **guidance and support**.
2. Offer **resources and funding**.

Other answers:

- Provide training
- Mobilize community members

6. CSL Leadership

a) FOUR qualities of a good leader

1. Good communication skills
2. Responsibility
3. Integrity
4. Teamwork

Other answers:
5. Creativity
6. Problem-solving ability
7. Confidence
8. Organization skills

b) TWO leadership styles

1. Democratic leadership
2. Transformational leadership

Other answers:

- Participative leadership
- Servant leadership

c) Importance of leadership

1. Helps coordinate project activities effectively.
2. Ensures teamwork and proper decision making.

Other answers:

- Encourages participation
- Improves project success

7. Intercultural Competence

a) Definition

Intercultural competence is **the ability to interact effectively and respectfully with people from different cultural backgrounds.**

b) Elements

1. Cultural awareness
2. Respect for diversity
3. Effective communication

Other answers:

- Empathy
- Tolerance
- Open-mindedness

c) Challenges caused by cultural differences

1. Language barriers
2. Misunderstanding cultural practices
3. Discrimination

Other answers:

- Conflict
- Prejudice

d) Ways to promote unity

1. Respect cultural diversity.
2. Promote dialogue and understanding.

Other answers:

- Cultural exchange programs
- Community celebrations

SECTION B

8. Planning a CSL project

Steps

1. Identify community needs.
2. Set project objectives.
3. Plan activities and resources.
4. Implement the project.
5. Monitor progress.
6. Evaluate results.

Other possible steps:

- Reflection
- Reporting findings

Criteria for selecting a project

1. Must address a **real community need**.
2. Should be **achievable within available resources**.
3. Should involve **learner participation**.

Examples of CSL projects

1. Tree planting project
2. Community clean-up campaign

Other examples:

- Visiting children's homes
- Health awareness programs
- Water conservation projects

9. Environmental Issues

Environmental problems

1. Deforestation
2. Poor waste management
3. Water pollution

Other examples:
4. Air pollution
5. Soil erosion
6. Climate change

CSL activities for environmental conservation

1. Tree planting
2. Community clean-up

Other answers:

- Recycling campaigns
- Environmental education programs

10. Health-related needs

Health needs

1. Poor sanitation
2. Lack of clean water
3. Disease prevention education

Other answers:

- Malaria control
- Nutrition education

CSL activities promoting health

1. Organizing hygiene education programs.
2. Cleaning water sources.

Other examples:

- Health awareness campaigns
- Distribution of mosquito nets

Benefits of CSL to public health

1. Reduces disease spread.
2. Improves hygiene awareness.

Other answers:

- Promotes healthy lifestyles

11. Educating the community

Ways learners can educate community

1. Organizing awareness campaigns.
2. Conducting community workshops.
3. Using posters and media.

Other examples:

- Drama and skits
- School outreach programs

Benefits of awareness campaigns

1. Increases public knowledge about social issues.
2. Encourages community participation in solving problems.

12. Monitoring CSL projects

Methods

1. Observation
2. Progress reports
3. Community feedback

Other methods:

- Surveys
- Evaluation meetings

Importance of evaluation

1. Determines whether project objectives were achieved.
2. Helps improve future projects.

13. Challenges in CSL

Challenges

1. Lack of funds
2. Lack of community support
3. Time constraints
4. Poor coordination

Other possible challenges:

- Weather conditions
- Limited resources
- Transportation problems

Strategies to overcome challenges

Lack of funds → fundraising, seek sponsorship
Lack of support → community engagement, awareness
Time constraints → proper planning, scheduling
Poor coordination → strong leadership, teamwork

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 – ELECTRICAL TECHNOLOGY (THEORY)

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A (70 MARKS)

1. Electricity in the Community (6 marks)

a) Definitions

i) Electricity (2 marks)
Electricity is the **flow of electric charge (usually electrons) through a conductor such as a wire**, used to power electrical devices and systems.

ii) Electrical Technology (2 marks)
Electrical technology is the **study and practical application of electricity in designing, installing, maintaining, and repairing electrical systems and equipment.**

b) TWO ways electricity improves life in rural communities (2 marks)

i. It provides **lighting for homes, schools, and hospitals**, improving education and health services.

ii. It enables the use of **machines and electrical appliances** such as water pumps, refrigerators, and communication devices.

Other acceptable answers:

- Supports small businesses
- Improves communication through charging phones and radios

2. Career opportunities in electrical technology (5 marks)

i. Electrician
ii. Electrical engineer
iii. Electrical technician
iv. Power plant operator
v. Electrical installation contractor

Other possible answers:

- Electronics technician
- Renewable energy technician

- Maintenance technician

3. Electrical Safety

a) THREE safety precautions (3 marks)

i. **Switch off the main power supply** before starting electrical work.

ii. **Use insulated tools and protective equipment** such as gloves and boots.

iii. **Check wires and equipment for damage** before working.

b) THREE roles of Kenya Power and Lighting Company (3 marks)

The Kenya Power and Lighting Company plays several roles:

i. **Distribution of electricity** to homes, schools, and industries.

ii. **Maintenance of power lines and electrical infrastructure** to ensure safety.

iii. **Educating the public on electrical safety and proper electricity use.**

4. Electrical Components

a) Definitions

i) Resistor (2 marks)
A resistor is an **electrical component that limits or controls the flow of electric current in a circuit.**

ii) Capacitor (2 marks)
A capacitor is a **component that stores electrical energy temporarily in an electric field and releases it when required.**

b) Practical uses (4 marks)

Resistor

i. Used to **control current in electronic devices** such as radios and televisions.

ii. Used in **LED circuits to prevent excessive current**.

Capacitor

iii. Used in **power supply circuits to store energy**.

iv. Used in **timing circuits such as flashing lights or timers**.

5. Ohm's Law Question

Given:

Voltage (V) = 9 V
Current (I) = 0.3 A

Formula:

$$R = \frac{V}{R} \quad R = \frac{9}{0.3} \quad R = 30\Omega$$

Answer:
Resistance = **30 Ω**

b) TWO factors affecting current in DC circuit (2 marks)

i. **Voltage (potential difference)** of the power source.

ii. **Resistance of the circuit components.**

c) TWO DC devices (2 marks)

i. Flashlight (torch)

ii. Mobile phone

Other answers:

- Radios
- Calculators

6. Series vs Parallel Circuits

a) THREE differences (3 marks)

Series Circuit	Parallel Circuit
Components connected in a single path	Components connected in multiple paths
Same current flows through all components	Current splits between branches
Failure of one component stops the entire circuit	Other components continue working

b) TWO advantages of parallel connection (3 marks)

i. Each appliance receives **full voltage supply**.

ii. If one appliance fails, **others continue operating**.

7. Flashlight Troubleshooting

a) THREE possible faults (3 marks)

i. Burnt out bulb

ii. Loose or corroded battery contacts

iii. Broken wire or poor connection

b) TWO troubleshooting methods (2 marks)

i. **Visual inspection** of wires and components.

ii. **Using a multimeter** to test voltage or continuity.

8. Capacitors

a) Principle of operation (3 marks)

i. A capacitor stores electric charge between **two metal plates separated by an insulator**.

ii. When connected to a power source, **electrons accumulate on one plate** creating an electric field.

iii. The stored energy can later be **released into the circuit when required**.

b) THREE characteristics of capacitors in DC circuits (3 marks)

i. They **charge when connected to DC supply**.

ii. After charging, they **block continuous DC current**.

iii. They **store electrical energy temporarily**.

c) ONE practical use (1 mark)

Used in **power supply filters in televisions or radios**.

9. Benefits of Electrical Technology (5 marks)

i. Improves lighting in homes and workplaces

ii. Enables operation of machines in industries

iii. Improves communication through electronic devices

iv. Supports healthcare equipment in hospitals

v. Increases productivity in domestic and industrial activities

10. Measuring Instruments

a) THREE instruments (3 marks)

i. Ammeter

ii. Voltmeter

iii. Ohmmeter

b) Quantity measured (2 marks)

i. **Ammeter – Electric current**

ii. **Voltmeter – Voltage (potential difference)**

(Ohmmeter measures resistance.)

SECTION B (Answer Any Four)

11. Series Circuit

Given:

$R_1 = 4\ \Omega$
$R_2 = 8\ \Omega$

a) Total resistance

$R_T = R1 + R2$ $RT = 4 + 8$ $R_T = 12\Omega$

b) Current in the circuit

Using Ohm's Law:

$$I = \frac{V}{R} \quad I = \frac{12}{12} \quad I = 1A$$

Current = 1 Ampere

c) TWO applications of series circuits

i. Flashlight circuits

ii. Decorative lighting strings

12. Electrical Wiring Safety

a) FOUR safety rules (4 marks)

i. Switch off the main supply before installation.

ii. Use properly insulated cables and tools.

iii. Avoid overloading circuits.

iv. Ensure proper earthing of electrical installations.

b) Roles of protective devices (4 marks)

i. **Circuit breakers and fuses protect appliances** from damage due to excessive current.

ii. They **prevent electrical fires and electric shock** by disconnecting faulty circuits.

13. Capacitor in Traffic Light Timer

a) Factors when selecting capacitor (6 marks)

i. **Capacitance value** – determines the timing duration of the circuit.

ii. **Voltage rating** – must withstand the circuit voltage.

iii. **Type of capacitor** – electrolytic or ceramic depending on the circuit design.

b) Advantages in timing circuits (2 marks)

i. Provide **accurate time delays**.

ii. Help **control switching intervals automatically**.

14. Maintenance of Electrical Appliances

a) THREE maintenance activities (6 marks)

i. **Cleaning dust and dirt** from electrical appliances to prevent overheating.

ii. **Checking and tightening loose connections** to ensure proper functioning.

iii. **Replacing worn or damaged components** such as wires and plugs.

b) TWO consequences of poor maintenance (4 marks)

i. Electrical appliances may **break down frequently**.

ii. Increased risk of **electric shock or fire hazards**.

15. Renewable Energy

a) THREE renewable energy sources (3 marks)

i. Solar energy

ii. Wind energy

iii. Hydroelectric energy

b) TWO advantages for rural electrification (4 marks)

i. Renewable energy is **environmentally friendly and reduces pollution**.

ii. It **provides electricity to remote areas where grid power is unavailable**.

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 – ENGLISH

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A: ENGLISH GRAMMAR & COMPREHENSION

1. Dialogue: At the Community Library

a) Identify the two characters. (2 marks)

i. **Mary**
ii. **The Librarian**

b) Two services offered by the library. (2 marks)

i. **Lending or borrowing books**
ii. **Recommending research materials / providing information resources**

c) Two polite expressions used in the dialogue. (2 marks)

i. **"Thank you."**
ii. **"I appreciate your help."**

(Also acceptable: *"Good morning", "You're welcome", "Could you also recommend…"*)

d) Identify the setting of the dialogue. (2 marks)

i. **Community library**
ii. **Inside a library / study environment**

e) One benefit of borrowing books from the library for research. (2 marks)

Borrowing books from the library **gives students access to reliable information and learning materials that help them complete research projects effectively.**

2. Comprehension Passage

a) Main idea of the passage. (2 marks)

i. **Environmental clubs promote sustainability in schools.**
ii. **Students learn leadership and responsibility through environmental activities.**

b) Two environmental activities mentioned. (2 marks)

i. **Tree planting**
ii. **Recycling campaigns**

(Also acceptable: **Water conservation projects**)

c) Two leadership skills gained. (2 marks)

i. **Teamwork**
ii. **Responsibility**

(Also acceptable: leadership, cooperation, organisation)

d) How working in diverse groups promotes social understanding. (3 marks)

i. Students **learn to respect different cultures and backgrounds.**
ii. They **develop tolerance and appreciation for diversity.**
iii. They **improve communication and cooperation with different people.**

e) Two challenges faced by environmental clubs. (2 marks)

i. **Limited resources**
ii. **Lack of cooperation**

f) Importance of reflection after projects. (2 marks)

i. It helps students **evaluate their performance.**
ii. It helps them **improve future projects and activities.**

3. Grammar and Vocabulary

a) Identify and classify nouns. (4 marks)

Noun	Type
James	Proper noun
friends	Common noun
Nairobi	Proper noun
Museum	Proper noun

b) Replace with a pronoun. (2 marks)

The librarian praised himself for his dedication.

c) Determiners (2 marks)

i. **Every** student should submit the assignment on time.
ii. **Those / The** books on the shelf belong to the school.

d) Correct the run-on sentence. (3 marks)

Community service is important because it teaches responsibility and teamwork.

(Also acceptable: use a semicolon or full stop.)

e) Join the sentences using a conjunction. (4 marks)

The students started a project, but they did not have enough materials.

4. Broken Passage (Possible Answers)

1. **distracted**
2. **message**
3. **points**
4. **tone**
5. **understanding**
6. **lifelong**
7. **communication**
8. **notes**
9. **speaking**
10. **decision-making**

SECTION B: COMPOSITION

A. Narrative Composition (Sample)

The Envelope at Midnight

(Approx. 320–350 words)

The envelope had no name on it. It was slipped quietly under my door at exactly midnight. At first, I thought it was a mistake. But when I opened it and saw what was inside, my heart skipped a beat.

Inside the envelope was a small piece of paper and a silver key. The paper had only one sentence written in neat handwriting: *"Go to the old library at dawn and open locker number seven."*

At first, I was frightened. Who could have left the envelope? Why had they chosen me? I barely slept that night because my mind was full of questions.

At dawn, curiosity overcame my fear. I quickly dressed and walked towards the old community library. The streets were still quiet and the morning air was cold. When I reached the library, the caretaker was just opening the doors.

Trying to act normal, I walked inside and searched for locker number seven. My hands trembled as I inserted the small silver key into the lock. Slowly, I turned the key and opened the locker.

Inside, I found several old photographs and a notebook. The photographs showed students planting trees and cleaning the environment many years ago. The notebook contained plans for a community environmental club that had never been started.

At the back of the notebook was another note: *"The future of our environment depends on young people like you."*

Suddenly, everything made sense. Someone had trusted me to continue the project.

Later that week, I gathered my classmates and shared the idea. Together we started a school environmental club. We planted trees, organised recycling activities, and cleaned our neighbourhood.

Even today, I still wonder who left that mysterious envelope. But one thing is certain — that midnight message changed my life forever.

B. Expository Composition (Sample)

Effects of Social Media Among Young People

Social media has become an important part of the lives of many young people. Platforms such as messaging apps and online networks allow users to communicate, share ideas, and access information quickly. However, social media can have both positive and negative effects depending on how it is used.

One positive effect of social media is communication. Young people can easily connect with friends, teachers, and family members regardless of distance. For example, students can create online discussion groups where they share notes and help each other understand difficult subjects. This improves learning and teamwork.

Another benefit is access to information. Social media platforms provide news, educational videos, and tutorials that help students expand their knowledge. A learner interested in science, technology, or art can easily find useful educational content online.

Social media also allows young people to express creativity. Many students share photography, music, writing, and other talents online. This can build confidence and help them discover career opportunities in the future.

However, social media also has negative effects. Excessive use can waste time and reduce concentration in studies. Some students spend many hours scrolling through posts instead of completing their school work. In addition, cyberbullying and exposure to harmful content can affect the mental health of young people.

Another challenge is the spread of false information. Not everything shared online is accurate, and young people may be misled if they do not verify sources carefully.

To use social media responsibly, students should manage their time wisely, verify information before sharing it, and avoid harmful online behaviour. Schools and parents should also guide learners on safe and productive use of digital platforms.

In conclusion, social media is a powerful tool that can support learning and communication when used responsibly. Young people must learn to balance its benefits with discipline and responsible behaviour.

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 – LITERATURE

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

1. Oral Literature (10 marks)

a) Define oral literature. (2 marks)

Oral literature refers to **artistic works that are passed from one generation to another by word of mouth rather than through writing.**
It includes stories, songs, poems, and sayings performed or spoken in communities.

b) Identify four genres of oral literature. (4 marks)

i. **Folktales / Oral narratives**
ii. **Songs**
iii. **Proverbs**
iv. **Riddles**

Other acceptable answers: **chants, myths, legends, tongue twisters, lullabies, oral poetry, jokes.**

c) Explain two functions of oral literature in society. (4 marks)

i. **Education** – Oral literature teaches moral values, traditions, and life lessons to younger generations.

ii. **Entertainment** – It provides enjoyment and relaxation through storytelling, songs, and performances.

Other possible points:

- Preserves culture and traditions
- Promotes unity in communities
- Passes historical knowledge

2. Oral Narrative (10 marks)

a) Identify three features of oral narratives. (3 marks)

i. **Characters** such as people, animals, or supernatural beings.

ii. **A clear plot or sequence of events** including a beginning, middle, and ending.

iii. **A moral lesson or message** at the end of the story.

Other acceptable features: dialogue, repetition, audience participation, simple language.

b) State two types of oral narratives. (2 marks)

i. **Folktales**
ii. **Myths**

Other correct answers: **legends, trickster stories, fables, historical narratives.**

c) Three lessons learned from the story. (5 marks)

i. **Consultation and listening to others helps in making wise decisions.**

ii. **Hard work and creativity can solve problems.**

iii. **People should take action instead of waiting passively for solutions.**

Other possible lessons:

- Wisdom requires patience and reflection.
- Community discussions help solve problems.

8. Poetry Analysis (10 marks)

a) Identify the type of poem. (2 marks)

Descriptive poem (because it describes daily life in the village).

b) Three elements of poetry used. (3 marks)

i. **Imagery** – words that create pictures in the reader's mind.

ii. **Rhythm** – the flow and musical quality of the poem.

iii. **Repetition / descriptive language.**

Other acceptable answers: **personification, symbolism, stanza structure, tone.**

c) Explain the subject matter of the poem. (3 marks)

i. The poem describes **morning activities in a village.**

ii. It shows **daily life such as children going to school and women fetching water.**

iii. It highlights **community life, culture, and sharing of wisdom among elders.**

d) Two reasons why poetry is important in society. (2 marks)

i. **Poetry preserves culture and traditions.**

ii. **Poetry communicates emotions, ideas, and social messages creatively.**

Other acceptable points:

- Provides entertainment
- Educates society
- Encourages creativity

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –ESSENTIAL MATHEMATICS

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A (35 MARKS)

1. Surds and Indices (6 Marks)

a) Simplify

$$\frac{3^4 \times 3^{-2}}{3^3}$$

Step 1: Apply index laws

$3^4 \times 3^{-2} = 3^{4-2} = 3^2 \frac{3^2}{3^3} = 3^{2-3} = 3^{-1} = \frac{1}{3}$

Answer

$$\boxed{\frac{1}{3}}$$

b) Standard Form

$$0.00032$$

Move decimal **4 places right**

$$0.00032 = 3.2 \times 10^{-4}$$

Answer

$$\boxed{3.2 \times 10^{-4}}$$

c) Rationalize

$$\frac{5}{\sqrt{3}}$$

Multiply by $\frac{\sqrt{3}}{\sqrt{3}}$

$$\frac{5\sqrt{3}}{3}$$

Answer

$$\boxed{\frac{5\sqrt{3}}{3}}$$

d) Evaluate

$$\sqrt{50} + 3\sqrt{8}$$

Simplify surds

$\sqrt{50} = \sqrt{25 \times 2} = 5\sqrt{2}\ \sqrt{8} = \sqrt{4 \times 2} = 2\sqrt{2}\ 3\sqrt{8} = 6\sqrt{2}\ 5\sqrt{2} + 6\sqrt{2} = 11\sqrt{2}$

Answer

$$\boxed{11\sqrt{2}}$$

2. Algebraic Manipulation (7 Marks)

a) Expand

$$(2x - 3)(x + 5) - (x - 4)^2$$

Expand first bracket

$2x^2 + 10x - 3x - 15 = 2x^2 + 7x - 15$

Expand square

$$(x - 4)^2 = x^2 - 8x + 16$$

Subtract

$2x^2 + 7x - 15 - (x^2 - 8x + 16) = 2x^2 + 7x - 15 - x^2 + 8x - 16 = x^2 + 15x - 31$

Answer

$$\boxed{x^2 + 15x - 31}$$

b) Factorise

$$3x^2 - 11x - 4$$

Multiply

$$3 \times (-4) = -12$$

Numbers:

$$-12 \quad +1$$

Split

$$3x^2 - 12x + x - 4$$

Group

$3x(x-4) + 1(x-4)\ (3x+1)(x-4)$

Answer

$$\boxed{(3x+1)(x-4)}$$

c) Solve

$$4x^2 - 9 = 0$$

Difference of squares

$(2x-3)(2x+3) = 0\ x = \frac{3}{2} \quad or \quad x = -\frac{3}{2}$

Answer

$$\boxed{x = \pm\frac{3}{2}}$$

3. Simultaneous Equations (6 Marks)

$3x + 2y = 17\ 2x - y = 4$

Multiply second equation by 2

$$4x - 2y = 8$$

Add equations

$7x = 25\ x = \frac{25}{7}$

Substitute

$2\left(\frac{25}{7}\right) - y = 4\ \frac{50}{7} - y = 4\ y = \frac{50}{7} - 4\ y = \frac{22}{7}$

Answer

$$x = \frac{25}{7}, \quad y = \frac{22}{7}$$

4. Functions (8 Marks)

$$h = -2t^2 + 12t + 5$$

a) Maximum height

Vertex

$t = \frac{-b}{2a} = \frac{-12}{2(-2)} = 3$

Substitute

$h = -2(3)^2 + 12(3) + 5 = -18 + 36 + 5 = 23$

Maximum height = 23

b) When hits ground

$$-2t^2 + 12t + 5 = 0$$

Multiply by -1

$$2t^2 - 12t - 5 = 0$$

Quadratic formula

$t = \frac{12 \pm \sqrt{144+40}}{4} = \frac{12 \pm \sqrt{184}}{4} = \frac{12 \pm 13.56}{4}$

Positive value

$$t \approx 6.39$$

c) Average rate

$h(1) = -2 + 12 + 5 = 15$ $h(3) = 23$ $\frac{23-15}{3-1} = \frac{8}{2} = 4$

Answer = 4

5. Logarithms (8 Marks)

a)

$logx + log4 = 2$ $log(4x) = 2$ $4x = 10^2$ $4x = 100$ $x = 25$

b)

$log_3 81 = x$ $3^4 = 81$ $x = 4$

c)

$\frac{log500-log5}{log10}\ log(500/5)\ log100 = 2$

SECTION B

6. Coordinate Geometry

Points A(2,3), B(8,7)

a) Distance

$\sqrt{(8-2)^2+(7-3)^2}\ \sqrt{36+16}\ \sqrt{5}2 = 7.21$

b) Midpoint

$\left(\frac{2+8}{2}, \frac{3+7}{2}\right)$ (5,5)

c) Equation

Slope

$m = \frac{7-3}{8-2} = \frac{4}{6} = \frac{2}{3}$

Equation

$$y - 3 = \frac{2}{3}(x-2)$$

7. Similarity

a) Scale factor

$$\frac{9}{3} = 3$$

b) Volume scale

$3^3 = 27\ 40 \times 27\ 1080$

c) $5 \times 3 = 15$

8. Cylinder

r = 7
h = 10

Volume

$V = \pi r^2 h = 3.14 \times 49 \times 10 = 1538.6$

Surface Area

$2\pi r(r + h) = 2(3.14)(7)(17) = 747.3$

Cost

$1538.6 \times 50 = 76930$

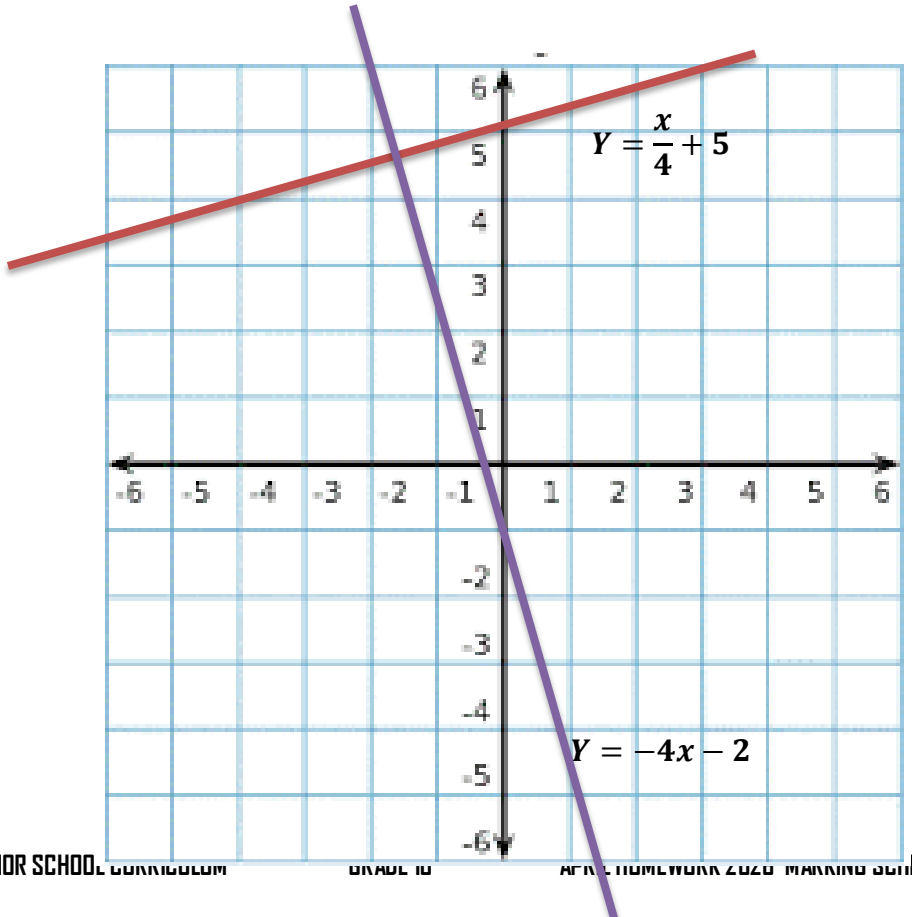
9. Draw he following lines on the same Cartesian plane and determine if they are perpendicular to each other

$$Y = \frac{x}{4} + 5$$

$$Y = -4x - 2$$

X	**-4**	**4**	**8**
Y	**4**	**6**	**7**

X	**-1**	**0**	**1**
Y	**2**	**-2**	**-6**



10. Trigonometry

a)

$Z = 180 - 35 - 65 = 80$

b)

$\frac{YZ}{sin65} = \frac{8}{sin80}\ YZ = \frac{8\sin 65}{\sin 80} = 7.34$

c) Area

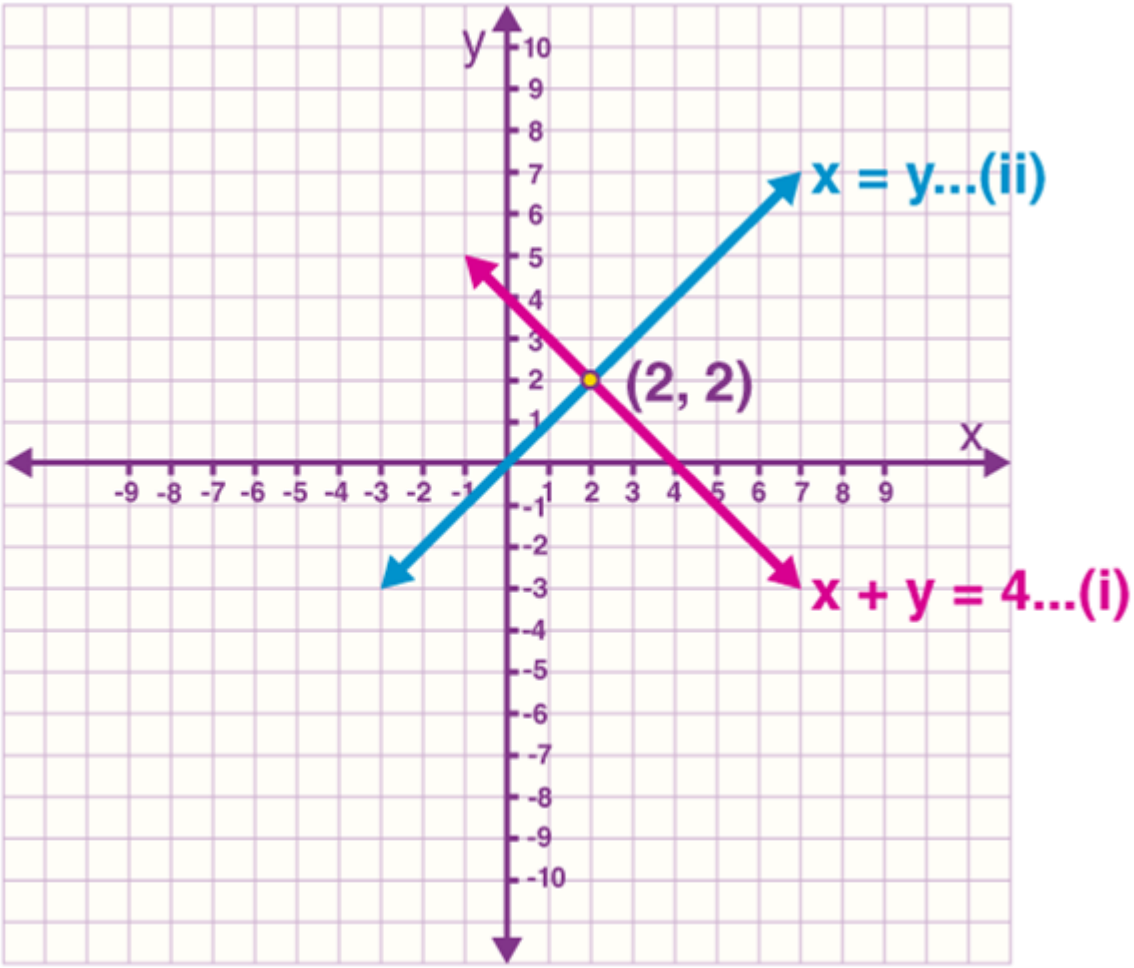
$\frac{1}{2}ab\sin C = \frac{1}{2}(8)(7.34)\sin 80 = 28.9$

SECTION C

12.

a)

$y = \text{x}$ and $x + y = 4$



Ans(2,2)

X=2

Y=2

b) add

$$\begin{pmatrix} 1 & 3 \\ 7 & 4 \end{pmatrix} \text{ and } \begin{pmatrix} -3 & 1 \\ 8 & -7 \end{pmatrix}$$

$$\text{Let } A = \begin{pmatrix} 1 & 3 \\ 7 & 4 \end{pmatrix} \quad B = \begin{pmatrix} -3 & 1 \\ 8 & -7 \end{pmatrix}$$

$$A + B = \begin{pmatrix} 1 & 3 \\ 7 & 4 \end{pmatrix} + \begin{pmatrix} -3 & 1 \\ 8 & -7 \end{pmatrix} \quad A+B = \begin{pmatrix} -2 & 4 \\ 15 & -3 \end{pmatrix}$$

13. Garden

a) Area

$(x + 4)(2x - 3) = 2x^2 + 5x - 12$

b)

$2x^2 + 5x - 12 = 70$ $2x^2 + 5x - 82 = 0$ $x = \frac{-5 \pm \sqrt{681}}{4}$ $x \approx 5.27$

c)

New dimensions

$(x + 4 - 2)$ $(2x - 3 - 2)$ $(x + 2)(2x - 5)$

Substitute

$$x = 5.27$$

Area ≈ **41.2 m²**

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –FINE ARTS

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A (35 MARKS)

1. Mural Art

a) Three principles of design used in the mural (3 marks)

i. **Balance**
ii. **Contrast**
iii. **Unity**

(Other acceptable answers: emphasis, rhythm, proportion)

b) Two techniques used to create textures in wall paintings (2 marks)

i. **Dry brushing technique**
ii. **Sponging technique**

c) How contrast attracts attention in mural art (2 marks)

i. Artists use **bright colors against dull colors** to highlight important parts of the mural.

ii. **Light and dark color differences** make certain objects stand out and catch the viewer's attention.

d) Two tools or materials used for mural art (2 marks)

i. **Paint brushes**

ii. **Wall paints / acrylic paints**

Other acceptable answers: rollers, spray paint, chalk, ladder.

2. Typography and Visual Communication

a) Definition of typography (1 mark)

Typography is the **art and technique of arranging letters and text in a visually attractive and readable way for communication.**

b) Two types of calligraphy nibs or pens (2 marks)

i. **Broad nib pen**

ii. **Pointed nib pen**

c) Three rules for designing readable and attractive text (3 marks)

i. Use **clear and simple fonts**.

ii. Maintain **proper spacing between letters and words**.

iii. Use **appropriate font size and alignment**.

d) Two ways line and color enhance logos or trademarks (2 marks)

i. **Lines create shapes and structure** that make logos recognizable.

ii. **Colors attract attention and help express the brand identity.**

e) Two features of an effective poster (2 marks)

i. **Clear and bold message or headline**.

ii. **Attractive images and colors that capture attention.**

3. Stencil Art

a) Definition of stencil art (1 mark)

Stencil art is a **method of creating images or patterns by applying paint through a cut-out template placed on a surface.**

b) Three materials used in stencil artwork (3 marks)

i. **Cardboard or plastic sheet**

ii. **Spray paint or acrylic paint**

iii. **Cutting knife or blade**

c) How repetition creates rhythm in spray art (2 marks)

i. Repeating shapes or patterns **creates movement and flow in the artwork**.

ii. It **makes the design look organized and visually interesting**.

d) Reason for trimming and mounting stencil artworks (1 mark)

To **improve presentation and protect the artwork from damage.**

4. Watercolour Landscape Painting

a) Foreground, middle ground, background using color values (2 marks)

Objects in the **foreground are painted with darker and stronger colors**, while the **middle ground uses moderate colors**, and the **background uses lighter and faded colors** to create depth.

b) Four steps for applying a graded wash (4 marks)

i. Wet the paper lightly with clean water.

ii. Apply a strong color at the top of the area.

iii. Gradually add water as you move downward.

iv. Blend the color smoothly to create a gradual change in tone.

c) Two types of wash used in watercolour painting (2 marks)

i. **Flat wash**

ii. **Graded wash**

d) Three purposes of using a viewfinder (3 marks)

i. Helps the artist **select the best composition**.

ii. Helps to **focus on important parts of the scene**.

iii. Helps to **crop unnecessary details from the view**.

5. Collage

a) Definition of collage (1 mark)

Collage is an **art technique where different materials such as paper, fabric, or photographs are glued together to create an artwork.**

b) Difference between single-media and mixed-media collage (2 marks)

i. **Single-media collage** uses **only one type of material**.

ii. **Mixed-media collage** uses **different materials combined together**.

c) Two ways texture improves collage composition (2 marks)

i. Texture **adds visual interest and variety** to the artwork.

ii. It **makes the artwork appear more realistic and dynamic**.

d) Two skills developed when giving feedback on a peer's artwork (2 marks)

i. **Critical thinking and observation skills**

ii. **Communication and evaluation skills**

6. Still Life Drawing

a) Two preparatory steps before drawing (2 marks)

i. **Arrange the objects properly on the table.**

ii. **Observe the objects carefully and sketch light outlines.**

b) Two ways shading creates three-dimensional objects (2 marks)

i. Shading **creates light and dark areas that show form and depth**.

ii. It **shows how light falls on objects, making them look realistic.**

c) Two methods to indicate the source of light (2 marks)

i. **Drawing highlights on the side facing the light source.**

ii. **Adding shadows on the opposite side of the object.**

7. Portrait Drawing

a) Four elements of art present in the portrait (4 marks)

i. **Line**

ii. **Shape**

iii. **Texture**

iv. **Value (light and dark)**

b) Three principles of design in the portrait (3 marks)

i. **Balance**

ii. **Proportion**

iii. **Emphasis**

c) Two types of texture in portrait drawings (2 marks)

i. **Actual texture**

ii. **Implied texture**

d) Definition of form (2 marks)

Form refers to the **three-dimensional appearance of an object created through shading, light, and shadow in a drawing.**

e) Three purposes of keeping a sketchbook (3 marks)

i. To **practice drawing skills regularly**.

ii. To **record ideas and observations for future artworks**.

iii. To **develop creativity and artistic improvement**.

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –FRENCH

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A (50 MARKS)

1: Describing Weather and Directions (10 marks)

Text:
« Ma chambre est à gauche de la cuisine. La table est près de la fenêtre. Aujourd'hui, il fait froid et il neige. J'aime le soleil mais je n'aime pas le vent. »

a) Où est la chambre ? (2 marks)
Réponse: La chambre est à gauche de la cuisine.

b) Où est la table ? (2 marks)
Réponse: La table est près de la fenêtre.

c) Quel temps fait-il aujourd'hui ? (2 marks)
Réponse: Il fait froid et il neige.

d) Écris UNE chose que l'élève aime. (2 marks)
Réponse: L'élève aime le soleil.

e) Relevez DEUX prépositions utilisées dans le texte. (2 marks)
i. à gauche de
ii. près de

2: Writing About a Friend (10 marks)

a) Écris quatre phrases pour présenter ton ami. (4 marks)
Exemple de réponse:

- Mon ami s'appelle David.
- Il a quinze ans.
- Il est grand et mince.
- Il aime le football et la musique.

b) Complète les phrases avec le mot correct : (3 marks)
i) Mon ami **est** intelligent.
ii) Il **a** quinze ans.
iii) Il aime **le** football.

c) Identifie DEUX verbes que tu as utilisés dans tes phrases. (3 marks)
i. s'appelle
ii. aime

3: Family Members (10 marks)

a) Écris cinq membres de la famille avec les chiffres correspondants : (5 marks)

Famille	Nombre
père	1
mère	1
frère	1
sœur	2
grand-mère	1

b) Complète les mots suivants : (3 marks)
i) mère
ii) sœur
iii) frère

c) Forme une phrase correcte : (2 marks)
Réponse: Mon frère s'appelle Jean.

4: Verbs and Possessives (8 marks)

a) Conjugue le verbe **être** : (2 marks)
Je **suis**
Elle **est**

b) Complète avec **mon, ma, mes** : (2 marks)
i) **mon** père
ii) **mes** amis

c) Réécris les mots pour former une phrase correcte : (2 marks)
Réponse: Elle parle français.

d) Conjugue le verbe **avoir** : (2 marks)
Nous **avons** deux chiens.

e) Écris TROIS phrases : (2 marks)
i. Je joue au football.
ii. Il lit un livre.
iii. Nous allons à l'école.

5: Family Greetings (10 marks)

a) Relève DEUX salutations du texte. (2 marks)
i. Bonjour
ii. Bonsoir

b) Que signifie **mes sœurs** ? (1 mark)
Réponse: Mes sœurs = my sisters

c) Écris trois mots qui indiquent des membres de la famille. (3 marks)
i. père
ii. mère
iii. sœurs

d) Complète la phrase : (1 mark)
Le soir, on dit **Bonsoir**.

e) Écris UNE phrase avec le mot **famille** : (3 marks)
Réponse: J'aime passer du temps avec ma famille le week-end.

SECTION B (50 MARKS)

6: Guided Writing – My Daily Routine (15 marks)

Exemple de paragraphe (6 phrases):
Le matin, je me réveille à sept heures.
Je prends mon petit-déjeuner à la maison.
À huit heures, je vais à l'école.
J'aime étudier les mathématiques et le français.
Après l'école, je fais mes devoirs.
Le soir, je regarde la télévision et je me couche à dix heures.

7A: Listening Passage (7 marks)

a) Qui parle ? (1 mark)
Réponse: Claire

b) Décris Claire. (2 marks)
Réponse: Elle a quatorze ans, elle est petite et elle a les cheveux bruns.

c) UNE chose qu'elle aime. (1 mark)
Réponse: Elle aime lire.

d) Complète : Paul est _____ et sportif. (1 mark)
Réponse: grand

e) Relevez DEUX verbes entendus : (2 marks)
i. suis
ii. aime

7B: Speaking Practice (10 marks)

(Sample responses)

a) Présente-toi :
Réponse: Bonjour, je m'appelle Fatima. J'ai quinze ans et je suis élève en classe 10.

b) Parle d'un membre de ta famille :
Réponse: Mon frère s'appelle Ahmed. Il est grand et il aime le football.

c) Décris le temps ou la direction :
Réponse: Aujourd'hui, il fait chaud et il y a du soleil.

8: Prepositions, Sorting, and Sentences (8 marks)

a) Complète avec la bonne préposition : (2 marks)
La lampe est **sur** la table.

b) Classe les mots : (4 marks)

Météo	Maison
le vent	la chaise
la pluie	la table

c) Réécris correctement la phrase : (2 marks)
Réponse: Le lit est dans la chambre.

d) Écris deux phrases sur le temps : (2 marks)
i. Il fait froid aujourd'hui.
ii. Il pleut beaucoup ce matin.

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –GENERAL SCIENCE

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

1: Sugar, Water, and Yeast Experiment (7 marks)

a) Identify the process occurring in the experiment. (1 mark)
Answer: Fermentation

b) Name the gas produced during this process. (1 mark)
Answer: Carbon dioxide (CO_2)

c) State one method to test for the gas produced. (2 marks)
Answer:

- Bring a burning splint near the gas; it will extinguish.
- Bubble the gas through lime water; it turns milky.

d) State one conclusion the student can make from the experiment. (1 mark)
Answer: Yeast ferments sugar to produce gas and causes balloon inflation.

e) Give one practical use of this process in industry. (2 marks)
i. Production of alcoholic beverages (beer, wine).
ii. Baking bread (leavening).

2: Seed Dormancy and Germination (5 marks)

a) Define seed dormancy. (1 mark)
Answer: Seed dormancy is a period in which a seed does not germinate even under favorable conditions.

b) Identify two conditions necessary for seed germination. (2 marks)
i. Water
ii. Oxygen
(Temperature/light may also be acceptable)

c) Differentiate between growth and development in plants. (1 mark)
Answer:

- Growth: Increase in size or number of cells.
- Development: Progression of plant from germination to maturity involving differentiation and functional changes.

3: Respiration (9 marks)

a) Define respiration in living organisms. (1 mark)
Answer: Respiration is the process by which living organisms release energy from food.

b) List two substrates used in cellular respiration. (2 marks)
i. Glucose
ii. Oxygen

c) Give two differences between aerobic and anaerobic respiration. (4 marks)

AEROBIC RESPIRATION	ANAEROBIC RESPIRATION
Requires oxygen	Does not require oxygen
Produces large amount of energy	Produces small amount of energy
End products: CO_2 and H_2O	End products: Lactic acid / ethanol + CO_2
Occurs in mitochondria	Occurs in cytoplasm

d) State two uses of anaerobic respiration in daily life or industry. (2 marks)
i. Production of alcoholic beverages
ii. Production of yogurt

e) Mention one energy-related importance of respiration to living organisms. (2 marks)
Answer: Provides energy for growth, movement, reproduction, and metabolic activities.

4: Transpiration Experiment (8 marks)

a) Name the process being investigated. (1 mark)
Answer: Transpiration

b) Name the tissue responsible for water transport. (1 mark)
Answer: Xylem

c) List three factors affecting transpiration. (3 marks)
i. Light intensity
ii. Temperature
iii. Humidity / Wind / Soil water availability

d) State three importance of transpiration in plants. (3 marks)
i. Helps in cooling the plant
ii. Maintains water movement and nutrient transport
iii. Maintains turgidity of cells

5: Digestion (15 marks)

a) Name two regions where digestion occurs. (2 marks)
i. Mouth
ii. Small intestine

b) Identify two enzymes involved in digestion. (2 marks)
i. Amylase
ii. Pepsin

c) Give one food type digested by each enzyme named above. (2 marks)
i. Amylase – Carbohydrates (starch)
ii. Pepsin – Proteins

d) State two adaptations of the small intestine that make absorption efficient. (2 marks)
i. Presence of villi and microvilli
ii. Large surface area

e) Name two parts of the digestive system labelled A and C in the diagram. (2 marks)
A: Mouth / Esophagus *(depending on diagram)*
C: Small intestine

f) Explain the role of enzymes in digestion. (5 marks)
Answer:
Enzymes speed up the breakdown of large, complex food molecules into smaller, soluble forms that can be absorbed by the body. Amylase breaks starch into sugars, proteases break proteins into amino acids, and lipases break fats into fatty acids and glycerol.

6: Specialized Animal Cells (2 marks)

Q: Cell that transports oxygen – **Red blood cell**
R: Cell that transmits electrical impulses – **Neuron**

7: Biological Organization (1 mark)

Answer (smallest to largest): Cells → Tissues → Organs → Organ systems → Organism

8: Microscope & Plant Cell (10 marks)

a) Name two types of microscopes. (2 marks)
i. Light microscope
ii. Electron microscope

b) State one difference between a light microscope and an electron microscope. (1 mark)
Answer: Electron microscopes have higher magnification and resolution than light microscopes and use electrons instead of light.

c) Identify the parts A, B, C of a plant cell. (3 marks)
A: chloroplast
B: smooth endoplasmic reticulum
C: sap vacuole
D: Golgi bodies

d) State one function of each part named above. (4 marks)
A: Chloroplast

- Site of photosynthesis, where light energy is converted into chemical energy (glucose).
- Contains chlorophyll which captures light energy.

B: Smooth Endoplasmic Reticulum (SER)

- Synthesizes lipids and steroids.
- Detoxifies drugs and harmful substances.
- Stores calcium ions in some cells.

C: Sap Vacuole (Central Vacuole in plants)

- Stores water, nutrients, and waste products.
- Maintains turgor pressure to support the plant cell structure.
- Helps in growth by enlarging and pushing the cell membrane outward.

D: Golgi Bodies (Golgi Apparatus)

- Modifies, sorts, and packages proteins and lipids for transport.
- Produces lysosomes.
- Secretes materials out of the cell (exocytosis).

9: Observing Plant Growth (10 marks)

a) Give two skills acquired when studying General Science. (2 marks)
i. Observation skills
ii. Recording and analyzing data

b) State two methods scientists can use to collect evidence. (2 marks)
i. Experimentation
ii. Field observations / Surveys

c) Give two reasons why evidence collection is important. (2 marks)
i. To support or refute a hypothesis
ii. To make informed decisions

d) State two ways General Science helps in environmental conservation. (2 marks)
i. Encourages sustainable resource use
ii. Promotes pollution control practices

e) Give two examples of modern technology influenced by scientific knowledge. (2 marks)
i. Mobile phones
ii. Solar panels

10: Match Branch of General Science (3 marks)

Branch	Focus
Biology	Study of living organisms
Chemistry	Study of matter and its reactions
Physics	Study of matter, energy, and forces

11: General Science Importance & Careers (15 marks)

a) Define General Science. (2 marks)
Answer: General Science is the study of basic concepts and principles in biology, chemistry, and physics that explain natural phenomena.

b) State two importance of studying General Science in daily life. (4 marks)
i. Helps understand and solve everyday problems
ii. Promotes health and hygiene

c) Mention two careers linked to General Science. (4 marks)
i. Doctor / Nurse
ii. Environmental Scientist / Chemist

d) State two skills learners develop through studying General Science. (5 marks)
i. Critical thinking
ii. Observation
iii. Experimentation
iv. Problem-solving
v. Analytical reasoning

12: Plant Growth Hormones (7 marks)

a) Name two plant growth hormones. (2 marks)

- ✓ **Auxins**
- ✓ **Gibberellins (GAs)**
- ✓ **Cytokinins**
- ✓ **Ethylene**
- ✓ **Abscisic Acid (ABA)**
- ✓ **Brassinosteroids**
- ✓ **Jasmonates (Jasmonic Acid)**
- ✓ **Salicylic Acid**

b) Explain the role of plant hormones in growth. (5 marks)
Answer:
Plant hormones regulate growth and development. Auxins stimulate cell elongation and root formation, gibberellins promote stem elongation and seed germination, cytokinins promote cell division, and ethylene controls fruit ripening. Hormones help plants respond to light, gravity, and stress conditions, ensuring proper growth and reproduction.

Hormone	Main Functions
Auxins	Cell elongation, root formation, fruit growth, phototropism
Gibberellins	Stem elongation, seed germination, flowering, fruit enlargement
Cytokinins	Cell division, shoot formation, delay leaf aging
Ethylene	Fruit ripening, leaf/flower abscission, stress response
Abscisic Acid (ABA)	Seed dormancy, stomatal closure, stress response
Brassinosteroids	Cell elongation/division, vascular differentiation, stress tolerance
Jasmonates	Defense response, senescence, fruit/flower development
Salicylic Acid	Pathogen defense, leaf senescence, systemic resistance

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –GEOGRAPHY

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A: THEORY (80 MARKS)

1. Rocks and Their Study

a) Define a rock. (2 marks)
Answer: A rock is a naturally occurring solid material composed of one or more minerals or mineraloids.

b) Classify the following rocks: (6 marks)

Igneous Rocks	Sedimentary Rocks	Metamorphic Rocks
Granite	Sandstone	Marble
Basalt	Limestone	Slate

c) Feature distinguishing extrusive from intrusive igneous rocks. (1 mark)
Answer: Extrusive igneous rocks cool quickly on the surface and have fine-grained texture, while intrusive rocks cool slowly underground and have coarse-grained texture.

d) Name TWO regions in Kenya where metamorphic rocks are commonly found. (2 marks)
i. Nyeri County (Aberdare region)
ii. Kisii Highlands

e) Outline TWO uses of rocks. (2 marks)
i. Granite and basalt are used for building and construction.
ii. Limestone is used in cement and agriculture (soil neutralization).

f) TWO methods geographers use to study rocks in the field. (2 marks)
i. Field observation and rock sampling
ii. Geological mapping

g) Metamorphic rocks formed from:

- Limestone → **Marble**
- Shale → **Slate**
- Sandstone → **Quartzite**
- Coal → **Anthracite**
- Granite → **Gneiss**

h) TWO characteristics of sedimentary rocks. (3 marks)
i. Often layered or stratified
ii. May contain fossils
iii. Usually softer and easily weathered

2. Field Study of Settlements

a) Define Geography. (2 marks)
Answer: Geography is the study of the Earth's physical features, human activities, and their interactions.

b) Two main branches of Geography. (2 marks)
i. Physical Geography
ii. Human Geography

c) Activities observed:

- Human Geography: Settlement patterns / Markets / Roads
- Physical Geography: Rivers / Relief / Soil types

d) TWO ways studying Geography helps sustainable development. (2 marks)
i. Proper land use planning
ii. Conservation of natural resources

e) TWO relationships between Geography and Environmental Science. (2 marks)
i. Geography studies the spatial distribution of resources; Environmental Science studies their sustainable management.
ii. Geography maps environmental hazards; Environmental Science explains their causes and solutions.

f) TWO careers related to Geography. (2 marks)
i. Cartographer
ii. Urban Planner

g) TWO factors to consider when choosing a Geography-related career. (2 marks)
i. Personal interests in physical or human aspects of Geography
ii. Availability of educational and training opportunities

3. Map Work (Kisumu East, 1:50,000)

(a) (i)convert 50,000 cm to km →=0.5 km

1 cm rep 0.5 km

(ii) 039832

(iii) 249 ± 1^0

(iv) 6.6 ± 0.1 km

(v) lake

- rivers
- seasonal swamp
- papyrus swamps
- waterhole

(b) there are steep slopes in the north western part

- there is Kano plain in the eastern part
- In the north eastern part there is Nyando escarpment
- Northern part has dissected landscape due to numerous rivers
- There are many river valleys
- The highest point is 1872 metres in the Nyando escarpment and lowest point is 1140 metres in the southern part

(c) presence of Agricultural Sugar Research Station/Government experimental farm which extension services to farmers

- few settlement in the plantation area making large tracts of land for cultivation
- network of road (C 543/1) facilitating transportation of sugarcane

(d) medical care – hospital

education – school

administration – DO

security – police line/police station

sports – stadium

religion – church

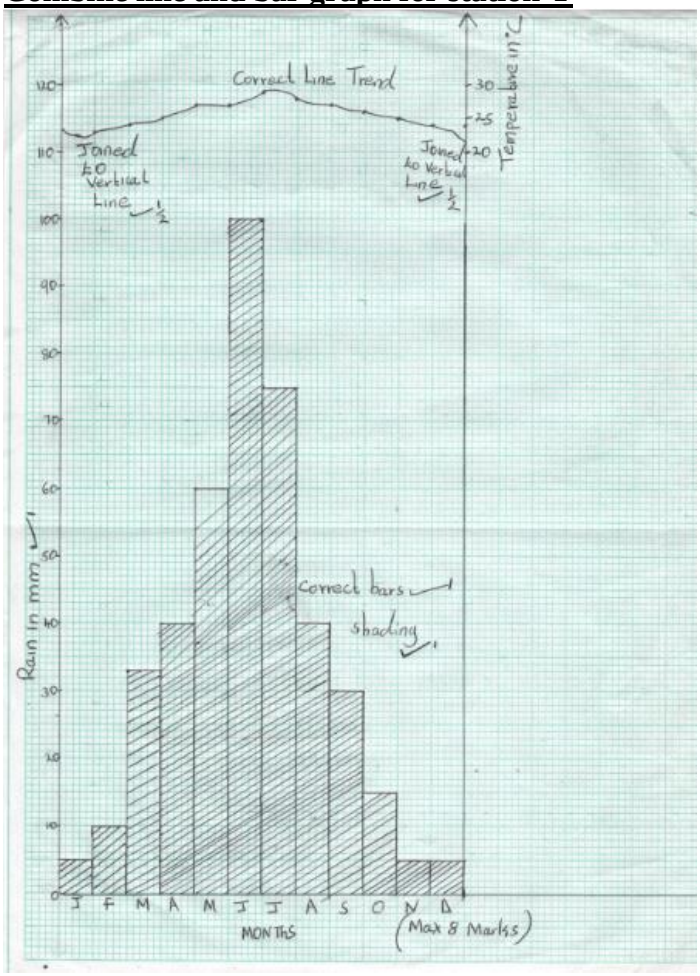
4. The table below represents the rainfall and temperature data of station Y for one year. Study it and answer the questions that follow:

Month	**Jan**	**Feb**	**Mar**	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Rainfall (mm)	5	10	33	40	60	100	75	40	30	15	5	5
Temp	23	24	25	27	27	29	28	27	26	25	24	24

a. Calculate the following:
   i. Annual temperature range (2mks)
   Maximum temp − minimum temp
   29°c − 23°c = 6°c
   ii. Mean monthly temperature (2mks)
   Maximum temp + minimum temp
   29°c + 23°c = 26°c
   iii. Annual Rainfall (2mks)
   5 + 10 + 33 + 40 + 60 + 100 + 75 + 40 + 30 + 15 + 5 + 5
   = 418mm

b. Draw a polygraph to represent the data (8mks)

Combine line and bar graph for station Y



c. Describe the characteristics of the polygraph in b above (6mks

- **There is rainfall throughout the year**
- **There is one rainfall maxima: from March to September**
- **Temperatures are high throughout the year**
- **Mean annual rainfall is low about (418mm)**
- **Mean annual range of temperature is small about 6oc**
- **The amount of rainfall increases with the increase of temperature**
- **The wettest month is June**

d. Apart from choosing and labeling the vertical scales for rainfall and temperature, state four other steps to be followed in constructing a polygraph (4mks)

- **Choosing and labeling the horizontal scale**
- **Plotting the values for rainfall and drawing the bar graph**
- **Plotting the values for temperature and drawing the line graph**
- **Writing an appropriate title above the graph**

e. Give one disadvantage of this type of graph (1mk)

- **It is difficult to choose a suitable vertical scale when values for valuables have a great difference**

5. GIS and Digital Maps

a) Define GIS. (2 marks)
Answer: GIS (Geographic Information System) is a computer-based system used to capture, store, analyze, and display spatial or geographical data.

b) Distinguish between GIS and GPS. (3 marks)

- GIS stores, analyzes, and displays spatial data; GPS provides precise location using satellites.
- GIS can handle multiple layers of data; GPS provides coordinates only.
- GIS requires data input and analysis; GPS gives real-time positioning.

c) Three components of GIS. (3 marks)
i. Hardware (computers, GPS devices)
ii. Software (ArcGIS, QGIS)
iii. Data (spatial and attribute data)

d) Three applications of GIS. (3 marks)
i. Urban planning and land use management
ii. Disaster management and risk mapping
iii. Resource mapping (forests, water, minerals)

6. Meteorology and Weather

a) Branch of Geography that studies climate and weather. (1 mark)
Answer: Climatology / Meteorology

b) THREE instruments and functions. (3 marks)

Instrument	Function
Thermometer	Measures temperature
Rain gauge	Measures rainfall
Anemometer	Measures wind speed

c) TWO importance of Geography in everyday life. (2 marks)
i. Helps in planning land use and settlement
ii. Aids in environmental conservation

d) TWO ways Geography helps in disaster preparedness. (2 marks)
i. Mapping flood-prone or disaster-prone areas
ii. Planning evacuation routes and emergency services

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –HISTORY AND CITIZENSHIP

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A: HISTORY (35 MARKS)

1. a) Differentiate between nationalism and socialism

- **Nationalism:** Loyalty and devotion to one's nation; promoting the interests of a particular nation.
- **Socialism:** An economic and political system advocating collective or state ownership of resources for equitable distribution.

b) Factors that led to the rise of African nationalism

i. Colonial exploitation and unfair treatment of Africans.
ii. Introduction of Western education exposing Africans to ideas of freedom.
iii. Influence of World Wars exposing Africans to global struggles for rights.
iv. Formation of African political organizations and movements.

c) Achievements of African nationalists

i. **Kwame Nkrumah (Ghana):**

- Led Ghana to independence in 1957, first African colony to gain independence.
- Advocated Pan-Africanism and unity of African states.

ii. **Jomo Kenyatta (Kenya):**

- First President of independent Kenya.
- Led the struggle for Kenya's independence and promoted national unity.

2. a) Reasons for convening the Berlin Conference

i. To regulate European colonization of Africa.
ii. To avoid conflict among European powers over African territories.
iii. To formalize rules for claiming African lands.

b) Agreements reached during the Berlin Conference

i. Principle of effective occupation to claim territories.
ii. Free trade in the Congo Basin.
iii. No European nation could claim land without notifying others.

3. a) Reasons for the colonization of Africa
i. Desire for raw materials and resources.
ii. Expansion of European markets for industrial goods.
iii. Strategic control of trade routes and ports.
iv. Spread of Christianity and European civilization.

b) Match countries with colonial masters

- Ghana → United Kingdom (Britain)
- Kenya → United Kingdom (Britain)
- Mozambique → Portugal
- Senegal → France

4. a) Supreme ruler of the Buganda Kingdom

- **Kabaka**

b) Functions of officials

i. **Katikiro** (Prime Minister)

- Administer day-to-day government affairs.
- Advise the Kabaka on political matters.
- Implement policies and laws.
- Supervise local chiefs and officials.

ii. **Omulamuzi** (Judicial Officer / Chief Justice)

- Preside over court cases.
- Interpret and enforce laws.
- Resolve disputes among citizens.
- Advise the Kabaka on legal matters.

c) Titles in Buganda administration

- **Omwanika:**
  i. Heir to the throne or crown prince.
  ii. Assist the Kabaka in administration.
- **Bataka:**
  i. Commoners or subjects of the Kabaka.
  ii. Provide labor, taxes, and support to the kingdom.

5. a) Similarities and differences between Nyamwezi Chiefdom and Wanga Kingdom

Similarities:
i. Both had organized political structures.
ii. Both collected tributes/taxes from subjects.
iii. Chiefs/kings exercised authority over land and people.

Differences:

Nyamwezi Chiefdom	Wanga Kingdom
Led by a chief	Led by a king
Small territorial unit	Larger kingdom with subordinate chiefs

b) Characteristics of the Neolithic Period
i. Use of polished stone tools.
ii. Development of agriculture and domestication of animals.
iii. Establishment of permanent settlements.

SECTION B: CITIZENSHIP (35 MARKS)

6. a) Define general election

- A nationwide election in which citizens vote to choose leaders for public office.

b) Principles of Kenya's electoral system
i. Universal suffrage (all adults can vote).
ii. Free and fair elections.
iii. Secret ballot.
iv. Transparency and accountability.

c) Functions of the IEBC
i. Conduct and supervise elections and referenda.
ii. Register voters and maintain the voters' register.
iii. Delimit electoral boundaries.
iv. Ensure compliance with election laws and regulations.

7. a) Elective positions contested in Kenya
I. **President** – The head of state and government of Kenya, responsible for national leadership.
II. **Member of Parliament (MP)** – Represents a constituency in the National Assembly, participates in law-making.
III. **Senator** – Represents a county in the Senate, oversees county legislation and allocation of national revenue.
IV. **County Governor** – Head of the county government, responsible for county administration and development.
V. **Woman Representative** – Represents women in the National Assembly, promotes gender issues and policies.
VI. **Member of County Assembly (MCA)** – Represents a ward in the County Assembly, participates in making county laws.

b) Stages in the electoral process
i. Voter registration
ii. Voting and counting of votes

8. a) Define public resources

- Resources owned by the government and meant for use by all citizens.

b) Types of public resources
i. Natural resources (forests, rivers)
ii. Human resources (civil servants)
iii. Financial resources (tax revenue, government funds)

c) Consequence of misuse of public resources

- Corruption, poor service delivery, or financial loss to the nation.

9. a) Major language groups in Kenya
i. Bantu
ii. Nilotic
iii. Cushitic

b) Reasons for migration of communities in Kenya
i. Search for fertile land or pasture.
ii. Escape from conflicts or wars.
iii. Search for water or food.
iv. Avoidance of natural disasters or drought.

10. a) Define pastoralism
i. A livelihood based on rearing and herding of livestock.
ii. Communities depend on animals for food, clothing, and trade.

b) Pastoralist communities in East Africa
i. Maasai
ii. Samburu

c) Challenges faced by pastoralist communities
i. Drought and scarcity of water.
ii. Conflicts over grazing land and resources.

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –GERMAN

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A: SPEAKING & ORAL SKILLS (10 MARKS)

1. Conversation & Pronunciation

a) Nenne zwei deutsche Begrüßungen aus dem Dialog
i. Hallo!
ii. Wie geht es dir?

b) Wie fragt Clara nach dem Namen des Bruders?
i. Wie heißt dein Bruder?
ii. (Alternative wording from the dialogue is not provided; same answer works)

c) Was antwortet David auf „Wie geht es dir?“
i. Mir geht es gut, danke.
ii. (Und dir?)

d) Schreibe zwei Wörter mit typischen deutschen Lauten aus dem Dialog
i. Bruder (R-Laut / rolling ‘r’)
ii. heißt (ß-Laut / sharp ‘s’)

e) Warum ist es wichtig, Aussprache und Betonung zu üben?
i. Um korrekt verstanden zu werden.
ii. Um die Sprachfähigkeit und Kommunikation zu verbessern.

SECTION B: READING COMPREHENSION – HOME (15 MARKS)

2. Lesen – Zuhause

a) Wo wohnt die Person?

- In einer Wohnung.

b) Nenne zwei Zimmer in der Wohnung
i. Wohnzimmer
ii. Schlafzimmer

c) Was gibt es auf dem Balkon?

- Einen kleinen Balkon.

d) Welches Zimmer ist das Lieblingszimmer und warum?

- Das Wohnzimmer, weil es hell und gemütlich ist.

e) Nenne zwei Gründe, warum ein Zuhause wichtig ist
i. Bietet Schutz und Sicherheit.
ii. Dient als Ort der Ruhe und Entspannung.
iii. Fördert das Familienleben und soziale Bindungen.

SECTION C: GRAMMAR (20 MARKS)

3. a) Konjugiere das Verb „haben“ im Präsens
i. ich **habe**
ii. du **hast**
iii. er **hat**
iv. wir **haben**

b) Setze die richtigen Personalpronomen ein
i. **Ich** heiße Jonas.
ii. **Wir** wohnen in Mombasa.
iii. **Sie** ist meine Schwester.
iv. **Ihr** seid meine Eltern.

c) Wähle das richtige Possessivpronomen
i. Das ist **mein** Vater.
ii. **Meine** Mutter ist nett.
iii. **Unser** Haus hat drei Zimmer.
iv. **Ihre** Brüder sind freundlich.

d) Bilde Fragen mit W-Wörtern
i. **Wie** heißt dein Freund?
ii. **Wann** geht ihr zur Schule?

e) Beantworte die Fragen mit Ja oder Nein
i. Ja, ich habe Haustiere. / Nein, ich habe keine Haustiere.
ii. Ja, ich wohne in einem Haus. / Nein, ich wohne in einer Wohnung.

SECTION D: WRITING – MEIN ZUHAUSE (15 MARKS)

4. Beispieltext (ca. 90 Wörter):
Ich wohne in einem kleinen Haus in Mombasa. Das Haus hat ein Wohnzimmer, zwei Schlafzimmer, eine Küche und ein Badezimmer. Mein Lieblingszimmer ist das Wohnzimmer, weil es hell und gemütlich ist. Es gibt ein Sofa, einen Couchtisch und einen Fernseher. In der Küche stehen ein Herd, ein Kühlschrank und ein Esstisch. Auf meinem Balkon habe ich Blumen und einen kleinen Stuhl. Ich verbringe gern Zeit in meinem Zuhause, weil es sicher und ruhig ist.

SECTION E: FAMILY (10 MARKS)

5. Lesen – Familie

a) Wie alt ist Sophie?

- 16 Jahre.

b) Nenne zwei Familienmitglieder von Sophie
i. Bruder
ii. Schwester

c) Wie viele Geschwister hat Sophie?

- Zwei Geschwister.

d) Was machen sie oft zusammen?

- Sie essen oft zusammen und gehen am Wochenende spazieren.

e) Warum ist Familie wichtig laut dem Text?
i. Sie verbringen Zeit miteinander.
ii. Sie unterstützen sich und pflegen Beziehungen.

SECTION F: SPEAKING & ORAL ASSESSMENT (10 MARKS)

6. Dialog & Numbers

a) Dialog über Familie oder Zuhause

- Beispiel: „Hallo, ich heiße Anna. Ich wohne mit meinen Eltern und zwei Geschwistern in einem Haus. Wir essen zusammen und spielen oft Spiele im Garten."

b) Zahlen von 30 bis 100

- 30, 31, 32, 33, …, 99, 100

c) Nenne vier Farben korrekt

- Rot, Blau, Grün, Gelb

d) Sage Preise und reagiere darauf

- Beispiel: „Das Buch kostet zehn Euro."
- Antwort: „Okay, ich zahle zehn Euro."

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –HOMESCIENCE

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

1. Affordable Housing

a) Four factors when selecting a suitable house
i. Proximity to schools, workplaces, and public amenities.
ii. Security of the neighborhood.
iii. Adequate space and number of rooms for the family.
iv. Accessibility to water, electricity, and sanitation services.

b) Two social benefits of living in a well-planned residential area
i. Encourages social interaction and community cohesion.
ii. Reduces crime and promotes a sense of safety.

c) Two responsibilities of a family in maintaining their house
i. Regular cleaning and hygiene maintenance.
ii. Repairing and maintaining fixtures and fittings.

2. Minor Burn in the Kitchen

a) Procedure for giving first aid
i. Immediately remove the person from the source of heat.
ii. Cool the burn under running cold water for 10–20 minutes.
iii. Cover the burn with a clean, non-stick cloth or dressing.
iv. Avoid applying ointments, butter, or ice directly on the burn.

b) Three possible causes of burns at home
i. Hot liquids or boiling water.
ii. Open flames from stoves or fires.
iii. Contact with hot utensils or surfaces.

c) Three measures to reduce kitchen accidents
i. Keep handles of pots and pans turned inward.
ii. Ensure the floor is dry and free from obstacles.
iii. Supervise children and prevent them from accessing dangerous areas.

3. Adolescence

a) Physical vs emotional changes

- Physical changes: Growth spurts, development of secondary sexual characteristics, voice changes.
- Emotional changes: Mood swings, increased sensitivity, desire for independence, developing identity.

b) Two challenges adolescents may face during puberty
i. Peer pressure and influence to engage in risky behaviors.
ii. Low self-esteem due to physical and emotional changes.

c) Two ways to maintain good reproductive health
i. Practice good personal hygiene.
ii. Seek regular medical check-ups and health education.

4. Healthy Eating

a) Nutrient classification

Body-building foods	Energy-giving foods	Protective foods
Eggs	Rice	Fruits
Milk	Maize	Vegetables

Body-building foods (Proteins – help build and repair body tissues, muscles, blood, and cells)

- Animal sources:
  - ✓ Eggs
  - ✓ Milk
  - ✓ Cheese
  - ✓ Meat (beef, chicken, goat)
  - ✓ Fish (sardines, tilapia, tuna)
  - ✓ Yogurt
- Plant sources:
  - ✓ Beans (kidney beans, black beans)
  - ✓ Lentils
  - ✓ Peas
  - ✓ Soybeans
  - ✓ Groundnuts / peanuts
  - ✓ Soya products (tofu, soya milk)

Energy-giving foods (Carbohydrates and fats – provide energy for daily activities)

- Carbohydrate-rich foods:
  - ✓ Maize / corn
  - ✓ Rice
  - ✓ Wheat / bread
  - ✓ Potatoes
  - ✓ Sweet potatoes
  - ✓ Cassava
  - ✓ Pasta
- Fat-rich foods (also energy-giving):
  - ✓ Avocado

- ✓ Cooking oils (vegetable oil, sunflower oil, olive oil)
- ✓ Butter / margarine
- ✓ Nuts (almonds, cashews)

Protective foods (Vitamins and minerals – protect the body from diseases, strengthen immunity)

- Fruits:
  - ✓ Oranges
  - ✓ Mangoes
  - ✓ Papaya
  - ✓ Bananas
  - ✓ Lemons
  - ✓ Pineapple
- Vegetables:
  - ✓ Spinach
  - ✓ Kale
  - ✓ Cabbage
  - ✓ Carrots
  - ✓ Tomatoes
  - ✓ Green peppers

b) Two consequences of protein deficiency
i. Stunted growth in children.
ii. Weak muscles and slow wound healing.

c) Two advantages of fortifying staple foods
i. Reduces nutrient deficiencies in the population.
ii. Improves overall health and immunity.

5. Cooking Methods

a) Moist heat vs dry heat methods

- **Moist heat methods**: Boiling, steaming.
- **Dry heat methods**: Baking, roasting.

b) Three effects of cooking on nutrients
i. Some vitamins (e.g., vitamin C) may be lost.
ii. Proteins may denature and become digestible.
iii. Minerals may leach into cooking water.

c) Three rules of personal hygiene during food preparation
i. Wash hands thoroughly before handling food.
ii. Wear clean clothing and apron.
iii. Tie hair back and cover cuts or wounds.

d) Two methods of cleaning wooden kitchen equipment
i. Wash with hot water and mild detergent, then air-dry.
ii. Scrub with a brush to remove food residues.

e) How proper storage of sharp tools improves kitchen safety
i. Prevents accidental cuts or injuries.
ii. Keeps tools organized and reduces the risk of contamination.

6. Modern Kitchen

a) Work triangle principle
i. Placement of the stove, sink, and refrigerator in a triangular layout.
ii. Minimizes movement and increases efficiency.
iii. Ensures safe and convenient workflow.

b) Three advantages of L-shaped kitchen layout
i. Maximizes corner space.
ii. Provides more work surface.
iii. Allows multiple people to work simultaneously.

c) Four major kitchen equipment
i. Refrigerator
ii. Stove / Cooker
iii. Sink
iv. Microwave

d) Two safety precautions when using electrical appliances
i. Ensure appliances are switched off when not in use.
ii. Keep electrical cords away from water.

7. Food Contamination and Poisoning

a) Difference between food contamination and food poisoning

- Food contamination: Presence of harmful microorganisms, chemicals, or foreign objects in food.
- Food poisoning: Illness caused by consuming contaminated food.

b) Two symptoms of food poisoning

i. Nausea
ii. Vomiting
iii. Diarrhea (watery or bloody)
iv. Stomach cramps and abdominal pain
v. Fever
vi. Chills
vii. Headache
viii. Weakness and fatigue
ix. Loss of appetite
x. Dehydration (dry mouth, excessive thirst, reduced urination)
xi. Muscle aches
xii. Dizziness or lightheadedness
xiii. Sweating
xiv. Blood in stool (in severe cases)
xv. Confusion (in severe cases or among elderly)

c) Three causes of food contamination
i. Poor personal hygiene of food handlers.
ii. Improper storage of food.
iii. Cross-contamination between raw and cooked foods.

d) Three methods of preserving food at home
i. Refrigeration or freezing.
ii. Drying or sun-drying.
iii. Salting, pickling, or using preservatives.

8. Careers in Foods and Nutrition

a) Four skills required for success
i. Time management and organization.
ii. Knowledge of food safety and hygiene.
iii. Creativity in meal planning and presentation.
iv. Communication and teamwork skills.

b) Four career opportunities in Home Science
i. Nutritionist or dietitian
ii. Chef or culinary expert
iii. Food technologist
iv. Home economics teacher or trainer

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –HRE

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

QUESTION 1

(a) Identify one major scripture for each religion:
i. Hinduism: **Bhagavad Gita**
ii. Jainism: **Agamas**
iii. Buddhism: **Tripitaka (Pali Canon)**
iv. Sikhism: **Guru Granth Sahib**

(b) Two difficulties in preserving religious scriptures:
i. Physical decay due to age, insects, or poor storage conditions
ii. Loss or destruction during wars, natural disasters, or persecution

(c) Two ways scriptures encourage harmony in society:
i. Teach respect and tolerance for all people regardless of differences
ii. Promote moral conduct such as honesty, compassion, and fairness

(d) One reason why religious texts are important:
Religious texts guide individuals and communities in moral living, decision-making, spiritual growth, and fostering peace and unity in society.

(e) Two scholars or leaders who interpreted scriptures:
i. **Adi Shankaracharya** (Hinduism)
ii. **Guru Nanak** (Sikhism)

QUESTION 2

(a) Four Sikh Gurus studied in class:
i. Guru Nanak
ii. Guru Angad
iii. Guru Amar Das
iv. Guru Gobind Singh

(b) Two social contributions of Sikh Gurus:
i. Establishment of langar (community kitchens) to serve all, promoting equality
ii. Promoting education and literacy among followers

(c) Teaching that helps maintain communal safety:
Sikh Gurus taught honesty, self-discipline, and justice, which help maintain order and prevent crime in society.

(d) Two ways learners can apply teachings of Sikh Gurus:
i. Practicing honesty and integrity in school and at home
ii. Helping the needy and participating in community service

QUESTION 3

(a) Buddhist understanding of Paramatma as Dhamma:
Paramatma refers to the ultimate truth or universal law (Dhamma) that governs the universe. It guides ethical behavior and spiritual practice to achieve enlightenment.

(b) Two Buddhas from the past or future and inspiration:
i. **Buddha Shakyamuni (Siddhartha Gautama)** – inspires faith through his teachings on ending suffering
ii. **Maitreya Buddha (future Buddha)** – inspires hope and ethical living for future generations

(c) Three qualities of a Buddha and explanation:
i. **Wisdom** – strengthens personal belief by guiding right understanding and decisions
ii. **Compassion** – motivates care for others and ethical behavior
iii. **Equanimity** – fosters inner peace and resilience

(d) Two ways Buddhist teachings promote ethical behavior:
i. Encourage non-harming (Ahimsa) and respect for all living beings
ii. Promote honesty, truthfulness, and responsibility in daily actions

QUESTION 4

(a) Five Jain Tirthankars studied:
i. Rishabhanatha
ii. Ajitanatha
iii. Sambhavanatha
iv. Abhinandananatha
v. Vimalanatha

(b) One major contribution of any three Tirthankars:

Tirthankar	Contribution
Rishabhanatha	Introduced agriculture and social order
Ajitanatha	Promoted non-violence and moral discipline
Sambhavanatha	Taught ethical living and meditation

(c) Two ways Tirthankar teachings benefit society:
i. Promote non-violence, reducing conflicts and cruelty
ii. Encourage truthfulness and honesty in social interactions

QUESTION 5

(a) Manifestation of Paramatma:
The manifestation of Paramatma refers to the different forms in which the supreme spirit or divine force is revealed in the world to guide humanity.

(b) Three members of the Trimurti and their roles:
i. **Brahma** – Creator of the universe
ii. **Vishnu** – Preserver and sustainer of the universe
iii. **Shiva** – Destroyer and transformer, enabling regeneration

(c) Two Dashavatars and lessons:
i. **Matsya (fish avatar)** – teaches preparedness and saving humanity from disasters
ii. **Rama (human avatar)** – teaches honesty, courage, and fulfilling duties

(d) Three practical ways learners can promote Dashavatar teachings:
i. Practice honesty and integrity in school and at home
ii. Protect the environment and natural resources
iii. Help others and support community welfare activities

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –ICT

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A

1(a) Four steps to insert an automatic Table of Contents in a word processor:
i. Apply heading styles (Heading 1, Heading 2) to document titles and subheadings.
ii. Place the cursor where the Table of Contents is to appear.
iii. Go to the "References" tab and click on "Table of Contents."
iv. Choose an automatic Table of Contents style and insert it.

1(b) Purpose of advanced features:
i. **Mail Merge:** Automates creation of personalized letters, labels, or emails for multiple recipients.
ii. **Track Changes:** Allows users to see edits, suggestions, or deletions made by others in a document.
iii. **Hyperlink:** Provides a clickable link to another section of a document, website, or email.

1(c) Word processing terms:
i. **Character Formatting:** Customizing the appearance of text, e.g., font type, size, color, bold, italic.
ii. **Page Layout:** Arrangement of text, images, margins, orientation, and spacing on a page.

1(d) Three editing tools in a word processor:
i. Spell check
ii. Grammar check
iii. Thesaurus

1(e) Four steps to save a document for the first time:
i. Click "File" menu and select "Save As."
ii. Choose the location or folder to save the file.
iii. Enter the file name.
iv. Click "Save."

2(a) Four main components of ICT infrastructure in a modern office:
i. Computers and workstations
ii. Networking devices (routers, switches)
iii. Servers and storage systems
iv. Printers and scanners

2(b) Three physical strains from incorrect computer use:
i. Eye strain or blurred vision

ii. Back or neck pain
iii. Carpal tunnel syndrome or wrist strain

3(a) Define Operating System (OS):
An OS is system software that manages computer hardware and software resources and provides an interface for users to interact with the computer.

3(b) Identify operating systems/interfaces:
i. GUI on iPhones: **iOS**
ii. Open-source OS for servers: **Linux**
iii. Most common desktop OS: **Windows**
iv. Interface where users type commands: **Command Line Interface (CLI)**

3(c) Expand abbreviations:
i. CPU: **Central Processing Unit**
ii. GUI: **Graphical User Interface**
iii. OS: **Operating System**

3(d) Four steps to create a folder called "ICT_Assignment":
i. Right-click on the desktop
ii. Select "New" → "Folder"
iii. Type "ICT_Assignment"
iv. Press Enter

3(e) Two security measures to protect files:
i. Use strong passwords and encryption
ii. Regularly back up files to secure storage

3(f) Four basic OS manipulations to customize interface:
i. Change desktop background or wallpaper
ii. Adjust screen resolution
iii. Modify taskbar or start menu settings
iv. Change themes or color schemes

4(a) Three word processing software suitable for reports:
i. Microsoft Word
ii. LibreOffice Writer
iii. Google Docs

4(b) Two functions of the cursor in a word processor:
i. Indicates the current position for text entry
ii. Selects text or objects for editing

4(c) Match icons with functions:

- Undo → Reverts the last action
- Redo → Reapplies the last undone action
- Save → Saves the current document

5(a) Four ICT devices in a clinic and their functions:
i. Device: **Computer** – Function: Store patient records digitally
ii. Device: **Printer** – Function: Print prescriptions and reports
iii. Device: **Scanner** – Function: Scan medical documents
iv. Device: **Telephone/VOIP** – Function: Communication with patients or other facilities

5(b) Three ways ICT can solve slow healthcare delivery:
i. Electronic health records for fast access to patient data
ii. Telemedicine for remote consultations
iii. Automated appointment scheduling to reduce queues

5(c) One advantage & disadvantage of smartphones for health communication:

- Advantage: Quick communication of health information to patients
- Disadvantage: Risk of misinformation if unverified sources are used

5(d) Define terms:
i. **Information:** Processed and meaningful data used for decision-making
ii. **Technology:** Tools, systems, and methods used to solve problems or improve tasks

6(a) Three features of a good report layout:
i. Clear headings and subheadings
ii. Numbered pages and sections
iii. Consistent font and spacing

6(b) Two reasons images are important in a report:
i. Help explain complex ideas or data visually
ii. Make the report attractive and engaging

6(c) Two ways of navigating a long document efficiently:
i. Use Table of Contents or bookmarks
ii. Use search/find feature to locate keywords

6(d) Two formatting tools to improve readability:
i. Bold, italics, or underline for emphasis
ii. Bullets or numbering for lists

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –IRE

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A: THEORY

1(a) Three difficulties Muslims face when distributing zakat in Kenya:
i. Identifying eligible recipients accurately.
ii. Mismanagement or misuse of funds by collectors.
iii. Lack of awareness among the community about zakat rules.

1(b) Three ways zakat contributes to socio-economic growth:
i. Reduces poverty by supporting the needy.
ii. Encourages wealth circulation in the community.
iii. Promotes social welfare and community development.

1(c) Four groups eligible to receive zakat:
i. The poor (Al-Fuqara')
ii. The needy (Al-Masakin)
iii. Zakat collectors (Amil Zakat)
iv. Debt-ridden persons (Gharim)

1(d) Calculate zakat on KSh 100,000 at 2.5%:
Zakat = 100,000 × 2.5 ÷ 100 = **KSh 2,500**

1(e) Two ways proper zakat management promotes economic development:
i. Ensures funds reach intended beneficiaries for productive use.
ii. Reduces inequality and stimulates local business activities.

2(a) Four major funeral rites:
i. Ghusl (ritual washing of the body)
ii. Kafan (shrouding the body)
iii. Salat al-Janazah (funeral prayer)
iv. Burial according to Islamic rites

2(b) Three reasons funeral rites are Fardh Kifayah:
i. To fulfill communal religious obligation.
ii. To show respect and dignity to the deceased.
iii. To ensure the community collectively observes Islamic law.

2(c) Three ways rites show respect for the deceased:
i. Proper washing and shrouding of the body.

ii. Conducting the funeral prayer before burial.
iii. Burying the deceased in accordance with Islamic teachings.

3(a) Two conditions required for Jumu'ah prayer to be valid:
i. The congregation must be of adult, sane Muslim males.
ii. The prayer must be performed in a mosque or designated place.

3(b) Two differences between Jumu'ah and 'Idd prayers:
i. Jumu'ah is weekly, 'Idd is annual.
ii. Jumu'ah is a replacement for Dhuhr, 'Idd is a special celebratory prayer.

3(c) Two benefits of Swalatul 'Idd:
i. Strengthens unity and brotherhood among Muslims.
ii. Provides opportunity for communal charity and celebration.

4(a) Teachings from Hadith:
i. Environment: Protect and care for nature and resources.
ii. Kinship: Maintain strong family ties and obligations.
iii. Brotherhood: Treat fellow Muslims with love and respect.

4(b) Three ways Muslims can promote brotherhood:
i. Sharing resources and helping the needy.
ii. Resolving conflicts peacefully within the community.
iii. Promoting social justice and equality.

5(a) Definitions:
i. **Isnad:** The chain of narrators who transmitted a Hadith.
ii. **Matn:** The actual text or content of a Hadith.

5(b) Two qualities of a trustworthy Muhaddith:
i. Honest and upright character.
ii. Accurate memory and reporting ability.

5(c) Two criteria to judge authenticity of Hadith:
i. Reliability of narrators in the Isnad.
ii. Consistency of the Matn with established teachings.

6(a) Define Asbābu al-Nuzūl:
It refers to the occasions or circumstances of revelation of specific Qur'anic verses.

6(b) Three categories of Asbābu al-Nuzūl:
i. Verses revealed due to specific events.
ii. Verses revealed to settle disputes.
iii. Verses revealed for guidance on social or legal matters.

6(c) One benefit of studying Asbābu al-Nuzūl:
Provides contextual understanding of Qur'anic verses.

7(a) Differences:
i. **Muhkamat vs Mutashabihat:** Muhkamat are clear and precise verses; Mutashabihat are allegorical or ambiguous verses.
ii. **Al-'Am vs Al-Khaas:** Al-'Am refers to general verses applying to a large group; Al-Khaas refers to specific verses targeting a particular situation or group.

7(b) Two reasons understanding verse types is important:
i. Ensures correct interpretation and application of the Qur'an.
ii. Prevents misunderstanding of general and specific instructions.

8(a) Two qualities of Allah's servants (Surah al-Furqan):
i. Humility in worship and obedience to Allah.
ii. Avoiding pride and arrogance.

8(b) Three teachings derived from the verses:
i. Importance of obedience to Allah.
ii. Avoidance of sin and wrongful deeds.
iii. Encouragement of patience and perseverance.

8(c) Three practical applications:
i. Daily prayers performed with sincerity.
ii. Helping the needy and avoiding arrogance.
iii. Following ethical guidelines in school and community.

9(a) Two circumstances that led to Qur'an compilation during Abu Bakr (R.A.):
i. Many Quranic reciters were dying in battles.
ii. Risk of losing parts of the Qur'an due to deaths of scribes.

9(b) Two reasons for standardization during Uthman (R.A.):
i. To prevent disputes over correct recitation.
ii. To ensure uniformity of the Qur'an across Muslim territories.

9(c) Two stages in compiling the Qur'an:
i. Collection of written and oral Qur'anic materials.
ii. Verification and compilation into a single codex.

9(d) Two significances of compilation/standardisation:
i. Preserves the Qur'an for future generations.
ii. Ensures consistency in teaching and recitation.

10(a) Define diacriticalisation:
The process of adding diacritical marks (harakat) to Qur'anic text to guide correct pronunciation.

10(b) Two circumstances that led to diacriticalisation:
i. Non-Arab Muslims learning to read Qur'an correctly.
ii. Avoidance of mispronunciation of similar Arabic letters.

10(c) Two significances of diacritical marks:
i. Ensures correct recitation and pronunciation.
ii. Prevents misinterpretation of meanings.

10(d) Two types of diacritical marks in the Qur'an:
i. Fatha, Kasra, Damma (vowel marks)
ii. Sukun and Shadda (pronunciation modifiers)

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –MARINE TECHNOLOGY

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A: THEORY

1(a) Differentiate between marine fish and freshwater fish:

- Marine fish live in saltwater environments such as oceans and seas, while freshwater fish live in rivers, lakes, and ponds.
- Marine fish have adaptations to tolerate high salt concentration; freshwater fish are adapted to low salinity environments.

1(b) Three examples of marine fish found along the Kenyan coast:
i. Mackerel
ii. Tuna
iii. Snapper
(Other possible: Sardine, Grouper, Emperor fish)

1(c) Two freshwater fish reared in inland fisheries in Kenya:
i. Tilapia
ii. Catfish
(Other possible: Nile Perch)

1(d) One importance of identifying fish species before harvesting:

- Ensures sustainable harvesting and prevents overfishing of endangered species.

2(a) Three factors that limit fish farming in some regions of Kenya:
i. High cost of feed and fingerlings
ii. Poor water quality or inadequate water supply
iii. Limited technical knowledge among farmers
(Other possible: Disease outbreaks, lack of infrastructure)

2(b) Two social benefits of aquaculture to rural communities:
i. Provides employment opportunities
ii. Improves nutrition and food security
(Other possible: Enhances community income, encourages youth engagement)

2(c) One policy measure to improve aquaculture production:

- Government provision of subsidies or support for fish feed and fingerlings.

3(a) Three traditional fishing methods in Kenya:
i. Hook and line
ii. Traps (e.g., basket traps)
iii. Spearfishing
(Other: Beach seines, nets in shallow water)

3(b) Two modern fishing methods in commercial fisheries:
i. Trawling
ii. Longline fishing

3(c) Three advantages of sustainable fishing practices:
i. Ensures fish stocks are not depleted
ii. Protects aquatic ecosystems
iii. Maintains long-term livelihood for fishermen

4(a) Four essential components of a standard fish pond:
i. Earthen pond embankments
ii. Inlet and outlet channels
iii. Drainage system
iv. Water supply source (stream, river, borehole)

4(b) Three routine management practices in a stocked fish pond:
i. Feeding fish according to their growth stage
ii. Water quality monitoring (oxygen, pH, temperature)
iii. Removal of weeds, predators, or dead fish

5(a) Three aquaculture production systems:
i. Extensive aquaculture
ii. Intensive aquaculture
iii. Cage culture systems
(Other possible: Recirculating aquaculture system (RAS), Polyculture systems)

5(b) Comparison of extensive and intensive aquaculture systems:

Feature	Extensive	Intensive
Stocking density	Low	High
Feeding method	Natural feed (plankton)	Supplementary commercial feed
Production output	Low	High

5(c) Three advantages of cage culture systems:
i. Efficient use of water bodies
ii. Easy monitoring of fish growth and health
iii. High production per unit area

6(a) Four external features of a typical bony fish:
i. Fins (dorsal, pectoral, pelvic, anal, caudal)
ii. Scales
iii. Gills (covered by operculum)
iv. Eyes and mouth

6(b) Four internal organs of a fish:
i. Heart
ii. Liver
iii. Stomach
iv. Intestine
(Other: Swim bladder, gonads, kidneys)

6(c) Functions:
i) **Swim bladder:** Maintains buoyancy and allows fish to control depth
ii) **Lateral line:** Detects vibrations and movement in water

7(a) Distinguish between marine and freshwater ecosystems:

- Marine ecosystems are saltwater environments like oceans and seas with high salinity; freshwater ecosystems are rivers, lakes, and ponds with low salinity.
- Marine ecosystems support species adapted to high salt; freshwater ecosystems support species adapted to low salt.

7(b) Two abiotic factors affecting aquatic life:
i. Water temperature
ii. Dissolved oxygen levels

7(c) Two human activities that threaten aquatic ecosystems:
i. Overfishing
ii. Pollution (industrial waste, agricultural runoff)

8(a) Three signs of unhealthy fish:
i. Loss of appetite
ii. Abnormal swimming behavior (e.g., erratic or floating at surface)
iii. Presence of lesions, spots, or ulcers on the body
(Other: Faded color, swollen body, fin erosion)

8(b) Two preventive measures against fish diseases:
i. Maintain good water quality and oxygen levels
ii. Quarantine new fish before introducing into ponds

9(a) Structure of fish gills:
i. Composed of gill arches, gill filaments, and gill rakers
ii. Filaments increase surface area for gas exchange

9(b) How fish obtain oxygen from water:
i. Water enters the mouth, passes over gill filaments
ii. Oxygen diffuses from water into the blood in gill filaments, carbon dioxide diffuses out

10(a) Two professional careers in fisheries and aquaculture:
i. Aquaculture technician / fish farmer
ii. Marine biologist / fisheries officer

10(b) One way fisheries support Kenya's national economy:

- Provide employment, export revenue, and contribute to food security.

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –MANDARIN

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

Answer all questions in mandarin

SECTION A: WRITTEN (70 MARKS)

PART A: READING (20 Marks)

A. 回答问题 (8 marks)

1. Tā jiào shénme míngzi?
   Answer: 他叫王杰。
2. Tā jǐ suì?
   Answer: 他十六岁。
3. Tā zhù zài nǎlǐ?
   Answer: 他住在内罗毕。
4. Shéi xǐhuān huàhuà?
   Answer: 他妈妈喜欢画画。

B. 从课文找词 (4 marks)

1. Doctor → 医生
2. Teacher → 老师
3. Hospital → 医院
4. Like → 喜欢

C. 完成表格 (4 marks)

人物	身份 / 角色
Bàba	医生
Māma	老师
Mèimei	学生
Wáng Jié	学生

D. 主题 (4 marks)

Zhè piān文章的主要意思: 介绍家庭成员、年龄、职业和爱好

Guānjiàn cí: 家庭, 爱好, 生活, 自我介绍

PART B: LANGUAGE USE (25 Marks)

A. 填入代词 (5 marks)

1. **Tā** 是李明。
2. **Tā** 是我的朋友。
3. **Tā** 住在上海。
4. **Tā** 喜欢游泳。
5. **Tā** 是老师。

B. 填入动词 (7 marks)

1. Wǒ **shì** xuéshēng.
2. Wǒ jiā **yǒu** wǔ kǒu rén.
3. Bàba zài yīyuàn **gōngzuò**.
4. Jiějie **xǐhuān** chànggē.
5. Wǒ **zhù** zài chéngshì.
6. Māma **shì** lǎoshī.
7. Wǒmen **xuéxí** Hànyǔ.

C. 用 "de" 结构 (6 marks)

1. Zhè shì wǒ **de** 书包。
2. Tā shì tā **de** 哥哥。
3. Wǒmen qù wǒmen **de** 学校。
4. Nà shì tāmen **de** 房子。
5. Tā xǐhuān tā **de** 家。
6. Zhè shì wǒ **de** 狗。

D. 写问题 (7 marks)

1. 你喜欢汉语吗？
2. 他住在哪里？
3. 你有宠物吗？
4. 他几岁？
5. 你爸爸做什么工作？
6. 他们喜欢运动吗？
7. 学校在哪里？

PART C: WRITING (25 Marks)

Example Short Essay (80–100 字):

我叫李华，今年十六岁。我住在内罗毕。我家有四口人：爸爸、妈妈、姐姐和我。爸爸是医生，他在医院工作。妈妈是老师，她喜欢画画。姐姐十岁，她是学生。我喜欢踢足球和看书，但是我不喜欢起早。我的家人很爱我，我也很爱他们。

Notes: Includes: name, age, residence, family members, likes/dislikes, uses shì, yǒu, zhù, xǐhuān, de, and at least three adjectives.

SECTION B: ORALS (30 Marks)

PART A: LISTENING (15 Marks)

Fāyīn hé shēngdiào (5 marks)

- Jiātíng 家庭
- Xuéxiào 学校
- Yīshēng 医生
- Xǐhuān 喜欢
- Chéngshì 城市

Tīnglì lǐjiě (10 marks)

1. Zhǔyào nèiróng shì: **自我介绍和家庭介绍**
2. Tí dào le shéi? **王杰的家人：爸爸、妈妈、妹妹**
3. Shéi xǐhuān shénme? **妈妈喜欢画画，王杰喜欢踢足球和看书**
4. Tāmen zhù zài nǎlǐ? **内罗毕**
5. Zhè duàn huà de zhǔtí shì: **家庭成员、爱好和生活**

PART B: SPEAKING (15 Marks)

Kǒutóu jièshào (8 marks)

- 我叫[你的名字]。
- 我今年十六岁。
- 我住在[你的城市]。
- 我家有[几口人]：爸爸、妈妈和兄弟姐妹。
- 我的爱好是踢足球和看书。

Rìcháng duìhuà (7 marks)

1. Nǐ zhù zài nǎlǐ?
   Answer: 我住在内罗毕。
2. Nǐ jiā yǒu jǐ kǒu rén?
   Answer: 我家有四口人。
3. Nǐ xǐhuān shénme yùndòng?
   Answer: 我喜欢踢足球。
4. Nǐ yǒu chǒngwù ma?
   Answer: 我有一只狗。
5. Nǐ bàba zuò shénme gōngzuò?
   Answer: 我爸爸是医生。
6. Jiàoshì lǐ yǒu shénme?
   Answer: 教室里有桌子和椅子。
7. Nǐ xǐhuān Hànyǔ ma? Wèishénme?
   Answer: 我喜欢汉语，因为它很有趣。

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GREDI 10 – KISWAHILI – MUHULA 1 – MARCH 2026

PATHWAY: S.T.E.M, SOCIAL SCIENCE, ARTS AND SPORTS

Time: Saa 2

ELIMU YA MSINGI WA UMAHIRI CKEAB 003

MARKING SCHEME

Jina: _____

Shule: _____

Namba ya Tathmini: _____ **Tarehe:** _____

Namba ya Shule: _____ **Saini:** _____

SEHEMU A: KISWAHILI LUGHA

INSHA – KUENDELEZA KISA

Siku hiyo nilichelewa kurudi nyumbani kutoka shuleni. Nilipofika karibu na mtaa wetu, niliona kundi la watu limekusanyika karibu na nyumba yetu. Moyo wangu ulianza kudunda kwa kasi, kwani sikujua kilichokuwa kinasubiri. Ghafla nikasikia mtu akitaja jina langu kwa sauti kubwa, na kilichoonekana kilinivutia macho na moyo kwa wakati mmoja. Niliruka kwa mshangao na kuona ndugu zangu wakiwa wamenikaribisha kwa shangwe kubwa. Waliniambia kuwa nilipatiwa tuzo ya ujasiriamali shuleni kutokana na mradi wangu wa kujitegemea.

Nilijawa na furaha isiyo na kifani na nikawashukuru ndugu zangu kwa kushiriki furaha yangu. Halafu, walimu wangu walikuja nami na kunipa pongezi kwa bidii yangu, uvumilivu, na ufanisi wangu katika mradi huo. Nilihisi fahari isiyoelezeka, kwani jitihada zangu shuleni ziliadhimishwa hadharani. Siku hiyo, nilijifunza kuwa bidii, nidhamu, na ushirikiano na walimu na familia huzaa matunda makubwa maishani.

Baada ya hapo, ndugu zangu walinipeleka ndani ya nyumba na kuandaa sherehe ya kusherehekea mafanikio yangu. Walipika chakula kizuri, na majirani walikuja kushiriki furaha yetu. Nilifurahia kuzungukwa na watu waliokuwa wameshuhudia juhudi zangu na walinipa ushauri wa kuendelea kufanya vizuri katika masomo yangu na shughuli za kijamii.

Wakati wa sherehe, baba yangu alizungumza kuhusu umuhimu wa nidhamu, adabu, na bidii katika kufanikisha malengo. Mama yangu alinihimiza kutumia vipaji vyangu kwa faida ya jamii na kuhakikisha kila mradi unaanza kwa mipango mizuri na kwa juhudi. Walimu wangu walisisitiza kuwa mafanikio haya ni matokeo ya juhudi za kila siku, kusoma kwa bidii, na kushirikiana na wenzangu bila kuchoka.

Nilijifunza pia kuwa mafanikio hayaji kwa bahati peke yake bali ni matokeo ya utayari wa kujitahidi, nidhamu, na malezi bora. Nilihisi furaha, mshikamano na upendo wa familia na jamii yangu, na nilijua kuwa siku hiyo ni mwanzo wa hatua nyingine katika maisha yangu. Niliamua kuendelea kufanya kazi kwa bidii zaidi shuleni na kushiriki wazo la ujasiriamali kwa wenzangu ili wote wafaidike.

Mwisho wa siku, nililala nikiwa na furaha na shukrani moyoni mwangu. Nilijifunza kuwa jitihada za kweli hazina mbadala, na kila mwanafunzi anapofanya kazi kwa moyo na bidii, matokeo bora huja bila shaka. Nilihisi moyo wangu umejazwa na msukumo wa kuendelea kujitahidi, sio kwa ajili yangu peke yangu bali pia kwa familia yangu, walimu wangu na jamii nzima. Siku hiyo hakika ilikuwa siku ya furaha, shukrani na mafanikio yasiyosahaulika maishani mwangu.

KAZI YA 1: TEKNOLOJIA (MAELEZO)

1. **Lengo kuu la kifungu:**

- Kueleza umuhimu wa teknolojia kwa wanafunzi na changamoto zake.

2. **Faida moja ya teknolojia kwa mwanafunzi:**

- Kupata taarifa kwa urahisi.

3. **Tatizo moja lililotajwa:**

- Matumizi mabaya ya mitandao ya kijamii.

4. **Suluhisho lililopendekezwa:**

- Wazazi na walimu kuwaongoza wanafunzi kutumia teknolojia kwa busara.

5. **Neno linalomaanisha "kuelekeza":**

- **Kuongoza**

KAZI YA 2: KUSOMA KWA UFAHAMU

1. **Umuhimu wa mazingira bora ya shule:**

- Huongeza bidii, nidhamu na ubunifu wa mwanafunzi.

2. **Lengo kuu la kushirikiana kwa walimu na wazazi:**

- Kuhakikisha mwanafunzi anapata malezi bora na elimu bora.

3. **Watu watatu wanaohitajika kushirikiana:**
   a) Walimu
   b) Wazazi
   c) Jamii
4. **Kichwa cha kifungu:**

- Mazingira bora ya shule.

5. **Ujumbe wa kifungu:**

- Mazingira mazuri huchangia maendeleo ya mwanafunzi kimaakili, kimawazo na kimwili.

KAZI YA 3: PENGO

11. **Lugha ni chombo muhimu cha: mawasiliano**
12. **Kupitia lugha, watu wanaweza: kuonyesha/kuwasilisha** hisia, maarifa na maoni yao
13. **Bila lugha, mawasiliano** huenda yakawa magumu
14. **Jukumu la kila mmoja: kulinda** lugha yake
15. **Shuleni, wanafunzi hufundishwa: kutumia** lugha kwa ufasaha

KAZI YA 4: SARUFI NA MATUMIZI YA LUGHA

Bainisha aina ya maneno:
a) Wanafunzi wanasoma kwa bidii → **Kitenzi**
b) Walimu wanaongoza shule kwa hekima → **Kitenzi**

Tunga sentensi:
a) Nomino ya ngeli ya KI-VI → **Kitabu kikubwa kiko mezani.**
b) Kitenzi cha wakati uliopita → **Mwalimu alisoma somo jana.**

Badilisha sentensi kwenda wakati uliopo:

- Mwalimu atawasaidia wanafunzi kusoma. → **Mwalimu anawasaidia wanafunzi kusoma.**

Sahihisha makosa:

- wanafunzi wanapenda masomo sana → **Wanafunzi wanapenda masomo sana.**

KAZI YA 5: KUSOMA KWA UFAHAMU

1. **Kusoma huongeza:** maarifa na fikra za mwanafunzi.
2. **Tabia moja nzuri:** uvumilivu au bidii.
3. **Jinsi kusoma kunavyoongeza msamiati:** kusoma vitabu mbalimbali huongeza maneno mapya.
4. **Kwa nini mwanafunzi anaweza kujieleza vizuri:** anapata maneno na mtazamo mpana.
5. **Mchango wa kusoma vitabu kwa nidhamu:** hujenga nidhamu ya kujifunza peke yao.
6. **Kujitegemea:** mwanafunzi anajifunza kufanya maamuzi na kutatua matatizo bila msaada wa wengine.
7. **Kwa nini wazazi na walimu wanapaswa kuhimiza kusoma vitabu:**
   i) Ili kuongeza maarifa ya mwanafunzi
   ii) Ili kuendeleza fikra na ubunifu wa mwanafunzi
8. **Faida za taifa:** kuongeza wananchi wenye elimu, kuendeleza utamaduni wa kusoma, kukuza maendeleo ya kitaifa
9. **Mtazamo mpana wa fikra:** uwezo wa kuona mambo kwa namna tofauti na kuelewa matatizo kwa upana
10. **Neno lenye maana sawa na "maarifa":** elimu
11. **Sentensi kutumia "kujieleza":** Mwanafunzi anaweza kujieleza kwa urahisi mbele ya wenzake.

KAZI YA 6: UANDISHI – INSHA

Mfano wa barua rasmi:

Jina la Mwalimu
Shule ya Msingi [Jina la Shule]
Mtaa wa [Jina la Mtaa]
Jijini [Jina la Jiji]

Tarehe: [Tarehe]

Mwalimu [Jina la Mwalimu]

Ndugu Mwalimu,

Napenda kukushukuru kwa msaada wako mkubwa uliopewa darasani. Shughuli zako za kufundisha zimenisaidia sana kuelewa masomo yangu vyema na kunitia moyo kujifunza kwa bidii. Pia, ushauri wako umeniwezesha kushirikiana vizuri na wenzangu na kuendeleza nidhamu shuleni.

Ninaahidi kuendelea kujitahidi katika masomo yangu na kuzingatia maadili uliyoyaelimisha. Napenda pia kushukuru kwa kuunda mazingira mazuri ya kujifunzia.

Asante sana kwa kila msaada na mwongozo wako.

Wako kwa dhati,
[Jina la Mwanafunzi]

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GREDI 10 – FASIHI YA KISWAHILI

PATHWAY: S.T.E.M, SOCIAL SCIENCE, ARTS AND SPORTS

Time: Saa 2

ELIMU YA MSINGI WA UMAHIRI CKEAB 003

MARKING SCHEME

SWALI LA 1: FASIHI SIMULIZI (ALAMA 10)

1. Eleza fasihi kwa maneno yako.
Fasihi ni maandiko au matamshi yanayobeba fikra, hisia, maarifa, na maadili ya jamii. Fasihi inaweza kuwa simulizi, methali, methali za mdomo, ushairi au hadithi, ambazo hufundisha, kuburudisha na kuhifadhi utamaduni. Pia hutoa msukumo wa kijamii na kuimarisha maadili mema.
Ziada: Fasihi pia inaweza kuonyesha historia ya jamii, mila, desturi na tabia za binadamu.

2. Eleza maana ya fasihi simulizi.
Fasihi simulizi ni hadithi zinazopangwa kusimuliwa kwa mdomo au kuandikwa, mara nyingi zikiwa na mafunzo ya maisha, kisa cha kweli au cha kufikirika, na zenye wahusika wanaovutia. Hutumika kuhifadhi utamaduni, historia na maadili ya jamii.
Ziada: Fasihi simulizi inaweza kuhusisha wahusika wanyama, mashujaa, majini, au watu wa kawaida.

3. Taja sifa tatu za fasihi simulizi.
a) Inasimbwa au kusimuliwa kwa mdomo au kuandikwa.
b) Ina mafunzo, maadili au ujumbe wa kijamii.
c) Ina wahusika wa aina mbalimbali, wa kuburudisha au wa kufundisha.
Ziada: Ina matukio ya kusisimua, migogoro, na suluhisho la kimaadili.

4. Eleza umuhimu wa fasihi simulizi katika jamii.

- Inahifadhi historia, utamaduni na mila za jamii.
- Inafundisha maadili mema kama heshima, uvumilivu, ushonaji, uaminifu, na mshikamano.
- Inatoa burudani, kuhamasisha ubunifu na kuimarisha mawasiliano kati ya vizazi.
- Inatoa funzo kwa vijana na watoto kuhusu tabia bora za kijamii.
- Inasaidia kuelimisha jamii kuhusu tukio muhimu la kihistoria au mafunzo ya maisha.

SWALI LA 2: HURAFI NA HEKAYA (ALAMA 10)

1. Tofautisha hurafa na hekaya.

- **Hurafa:** Hadithi za kufikirika tu, zisizo za kweli, zenye mashujaa wenye nguvu za ajabu, viumbe wa ajabu, au matukio yasiyo ya kawaida. Hutumika burudani na mafunzo ya kimaadili.
- **Hekaya:** Hadithi zinazotokana na matukio halisi au za kifasihi, zenye mafunzo au ujumbe wa kimaadili, mara nyingi zinashirikisha historia, maisha ya kila siku, au tabia za binadamu.
  Ziada: Hurafa ni ya kuburudisha zaidi, hekaya hujikita kwenye mafunzo ya maisha ya kweli.

2. Taja sifa tatu za hekaya au hurafa.
i) Zinavutia wasikilizaji au wasomaji.
ii) Zinajumuisha mafunzo au maadili ya kijamii.
iii) Zinahusisha wahusika wa aina tofauti: binadamu, wanyama, au viumbe vya ajabu.

Ziada: Zinakuwa na mpangilio wa kuanza, katikati na mwisho; mara nyingi zinatumia lugha rahisi na dhihirisho la picha.

3. Eleza umuhimu wa hadithi hizi katika jamii.
i) Zinasaidia kuhifadhi utamaduni, historia, na mila za jamii.
ii) Zinafundisha maadili mema kama heshima, uvumilivu, ujasiri, na mshikamano.
iii) Zinatoa burudani, zinahamasisha ubunifu, na kuimarisha mawasiliano kati ya vizazi.
Ziada: Pia hufundisha watoto na vijana kujiepusha na tabia mbaya kama wizi, uongo na ubakaji wa mila.

SWALI LA 3: USHAIRI (ALAMA 10)

1. Eleza maana ya ushairi.
Ushairi ni fasihi iliyopangwa kwa mtindo maalumu wa maneno, vina, na midundo ili kuonyesha hisia, mawazo, au mafunzo kwa njia ya kisanaa. Huweza kuwa kwa arudhi maalumu au kwa huru bila kizuizi cha midundo.
Ziada: Ushairi hutoa msukumo wa kimaadili, kihisia, na kiutamaduni kwa jamii.

2. Taja sifa tatu za ushairi.
i) Una mtindo maalumu wa maneno, vina, na rithm au midundo.
ii) Una hisia, picha, au dhihirisho la mawazo.
iii) Unaweza kuwa na mpangilio maalumu (ushairi wa arudhi) au huru (ushairi wa huru).
Ziada: Umejumuisha taswira, mafumbo, methali, au mafumbo ya lugha.

3. Tofautisha ushairi wa arudhi na wa huru.

- **Ushairi wa arudhi:** Una mpangilio maalumu wa midundo, vina, na rithm inayorudiwa.
- **Ushairi wa huru:** Hauna mpangilio maalumu, na mwandishi ana uhuru wa kuandika bila kizuizi cha rithm au arudhi.
  Ziada: Ushairi wa arudhi unafaa kwa mashairi ya kiakademia au tamthilia, ushairi wa huru unaenda zaidi kwa hisia na mtazamo binafsi.

4. Eleza dhima mbili za ushairi.
i) Kufundisha maadili na kutia moyo jamii.
ii) Kutoa burudani, kuhamasisha ubunifu, na kuonyesha hisia za binadamu.
Ziada: Ushairi pia hutoa historia ya jamii, mila na desturi, na hutumika kuhimiza mshikamano wa kijamii.

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –MEDIA TECHNOLOGY

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

SECTION A: THEORY

1(a) Four ways media can be classified according to content delivery:
i. Print media (newspapers, magazines)
ii. Broadcast media (radio, television)
iii. Online/digital media (websites, social media platforms)
iv. Outdoor media (billboards, posters, banners)

1(b) Definitions:
i. **Media content creator:** A person who produces, designs, or develops content for media platforms.
ii. **Streaming media:** Audio or video content delivered over the internet in real-time.
iii. **Broadcast media:** Media content transmitted to a wide audience using radio or television.
iv. **Media convergence:** The merging of traditional and digital media platforms to share content seamlessly.

2(a) Three careers in media technology (other than camera operator, editor, or reporter):
i. Scriptwriter
ii. Sound engineer
iii. Media producer
(Other possible: Media manager, Social media strategist, Lighting technician)

2(b) Role of a social media content creator:

- To produce engaging, informative, and relevant digital content for social media platforms to enhance audience engagement and promote the organization.

2(c) Two ways media personnel maintain professionalism:
i. Ensuring accuracy and fairness in reporting
ii. Respecting confidentiality and intellectual property rights

3(a) Four pre-production documents/tools and their use:

TOOL/EQUIPMENT	USE
Script	Provides dialogue and scene instructions
Storyboard	Visual representation of scenes
Shot list	Organizes camera angles and sequence of shots
Budget plan	Estimates costs and allocates resources

3(b) Four steps in pre-production:
i. Concept development and idea generation
ii. Research and information gathering
iii. Scriptwriting and storyboarding
iv. Scheduling and budgeting

3(c) Two benefits of research during pre-production:
i. Ensures content accuracy and relevance
ii. Helps plan resources and reduce production risks

4(a) Five production team members:
i. Director
ii. Camera operator
iii. Producer
iv. Sound technician
v. Script supervisor

4(b) Key responsibilities of four personnel:
i. Director – Oversees the creative aspects of production
ii. Camera operator – Captures video footage
iii. Producer – Manages overall production logistics
iv. Sound technician – Records and monitors audio quality

4(c) Three steps during production phase:
i. Setting up equipment and locations
ii. Recording scenes and interviews
iii. Monitoring quality of video and audio

5(a) Two personnel in post-production:
i. Video editor
ii. Sound editor

5(b) Three major tasks in post-production:
i. Cutting and arranging video clips
ii. Adding audio effects and background music
iii. Color correction and visual enhancements

5(c) Two video/audio editing software:
i. Adobe Premiere Pro
ii. Final Cut Pro
(Other: DaVinci Resolve, iMovie)

5(d) Two advantages of modern editing software:
i. Provides advanced effects and transitions
ii. Enables efficient and faster editing workflow

5(e) Match equipment with use:

Equipment	Use
Tripod	Stabilizes the camera during recording
Studio light	Provides proper illumination for video
Boom mic	Captures clear audio from a distance

6(a) Three types of media platforms for public information:
i. Radio stations
ii. Television channels
iii. Online platforms (websites, social media)

6(b) Four print media formats:
i. Newspapers

ii. Magazines
iii. Newsletters
iv. Pamphlets/Brochures

6(c) Three roles media plays in society:
i. Informing the public
ii. Educating the community
iii. Entertaining audiences
(Other possible: Advocacy and awareness creation, promoting culture and values)

7(a) Two reasons why a media portfolio is important:
i. Showcases a student's skills and creativity
ii. Acts as evidence for job applications or further studies

7(b) Three ways a media student can present their portfolio:
i. Digital portfolio (website or PDF)
ii. Physical portfolio (printed samples)
iii. Multimedia presentation (video or slideshow)

7(c) Definition of media ethics:

- Guidelines that govern the professional conduct of media practitioners, ensuring honesty, fairness, and integrity.

7(d) Two examples of electronic media programmes:
i. News bulletins
ii. Talk shows
(Other: Documentaries, podcasts, radio dramas)

8(a) Definitions:
i. **Media technology:** The tools, devices, and techniques used to create, produce, and distribute content.
ii. **Multimedia:** The combination of text, images, audio, and video to convey information.
iii. **Traditional media:** Conventional platforms such as newspapers, radio, and television.
iv. **Media distribution:** The process of delivering media content to the target audience.

8(b) Three forms of media used for content creation:
i. Audio (recordings, podcasts)
ii. Video (films, documentaries)
iii. Graphics/Images (illustrations, photographs)

9(a) Four pre-production steps for an environmental awareness campaign:
i. Researching environmental issues
ii. Writing a script and planning scenes
iii. Creating a storyboard
iv. Scheduling and budgeting

9(b) Four production team members and one task each:
i. Director – Oversees filming and creative vision
ii. Camera operator – Captures video footage
iii. Sound technician – Ensures clear audio recording
iv. Producer – Manages resources and logistics

9(c) Three post-production tasks:
i. Editing video and audio

ii. Adding graphics, captions, and animations
iii. Exporting and finalizing media for distribution

10. Five roles of media technology in society:
i. Disseminates information to the public
ii. Educates communities on social, economic, and health issues
iii. Provides entertainment and cultural content
iv. Promotes awareness and advocacy campaigns
v. Facilitates communication and networking globally

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –METAL TECHNOLOGY

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

SECTION A: THEORY (80 Marks)

1(a) Three types of hand tools commonly used in metal workshops:
i. **Hammer** – A tool used to strike or shape metal.
ii. **Pliers** – A tool used to grip, bend, or cut wires and metal sheets.
iii. **Screwdriver** – A tool used to tighten or loosen screws in metalwork.
(Other possible: Wrenches, files, spanners, chisels)

1(b) Two reasons why workshop safety is essential:
i. To prevent injuries such as cuts, burns, or eye damage.
ii. To avoid accidents that may damage tools or materials.

2(a) Metals suitable for specific uses:
i. Conductive wires: **Copper**
ii. Cooking utensils: **Aluminum / Stainless steel**
iii. Structural beams for buildings: **Steel / Iron**
iv. Corrosion-resistant roofing sheets: **Aluminum / Galvanized steel**

2(b) Differences between ferrous and non-ferrous metals:
i. Ferrous metals contain iron, non-ferrous metals do not.
ii. Ferrous metals are magnetic and prone to rust; non-ferrous metals are corrosion-resistant and non-magnetic.

3(a) Three risks of having a cluttered workshop:
i. Trips, slips, and falls from scattered tools or scrap metals.
ii. Cuts or injuries from sharp metal lying on the floor.
iii. Fire hazards due to poor organization near flammable materials.

3(b) Two first aid steps for a cut from sharp metal:
i. Clean the wound with antiseptic to prevent infection.
ii. Apply a sterile dressing or bandage to stop bleeding.

4(a) Five tools used for measuring and marking metal:
i. Steel rule
ii. Vernier caliper
iii. Try square
iv. Scriber
v. Tape measure

4(b) Use of any two tools:
i. **Steel rule** – Measures lengths or distances accurately.
ii. **Scriber** – Marks metal surfaces for cutting or drilling.
(Other possible: Try square – checks angles; Vernier caliper – measures internal/external diameters)

5(a) Match the tools to their functions:

Tool	Function
Bench vice	Holds metal pieces firmly while working
Grinder	Cuts, smoothens, or polishes metal surfaces
Hammer	Strikes or shapes metal
Screwdriver	Tightens or loosens screws
Pliers	Grips, bends, or cuts wires

5(b) Two maintenance practices for these tools:
i. Regular cleaning and oiling to prevent rust.
ii. Proper storage in designated places to avoid damage.

6(a) Four general safety rules when welding metals:
i. Wear protective clothing and welding mask/gloves.
ii. Ensure the area is free from flammable materials.
iii. Use proper ventilation to avoid inhaling fumes.
iv. Inspect welding equipment before use.

6(b) Two possible causes of accidents in a metal workshop:
i. Poor handling of sharp or hot tools.
ii. Cluttered or slippery floors.

7(a) Two physical properties of metals:
i. Density – heaviness of the metal
ii. Melting point – temperature at which metal melts

7(b) Two mechanical properties of metals:
i. Malleability – ability to be hammered or rolled into sheets
ii. Ductility – ability to be drawn into wires

8(a) Three purposes of using bench tools in metalwork:
i. To hold workpieces securely while shaping or cutting
ii. To improve precision and accuracy in metal shaping
iii. To protect the user from direct contact with moving or sharp parts

8(b) Two ways of taking care of bench tools:
i. Keep them clean and dry to prevent rust
ii. Lubricate moving parts regularly

9(a) Three examples of ferrous metals:
i. Iron
ii. Steel
iii. Cast iron

9(b) Three examples of non-ferrous metals:
i. Copper
ii. Aluminum
iii. Brass

10(a) Process of producing iron from its ore:
i. Mining iron ore from the ground
ii. Crushing and grinding the ore
iii. Smelting in a furnace with coke to extract molten iron
iv. Casting molten iron into desired forms or ingots

10(b) Two common forms of metal supply in workshops:
i. Sheets
ii. Rods / Bars
(Other: Wires, tubes, coils)

11(a) Three ways metals are used in everyday life:
i. Construction (beams, roofing, doors)
ii. Household items (utensils, cutlery)
iii. Electrical wiring (copper wires)

11(b) Importance of maintaining workshop safety:
i. Protects learners and workers from injuries
ii. Preserves tools and equipment from damage
iii. Promotes efficient and organized work

12(a) Two components of a safe workshop layout:
i. Clear walkways and organized tool stations
ii. Adequate lighting and ventilation

12(b) Two emergency safety equipment every workshop must have:
i. Fire extinguisher
ii. First aid kit

13(a) Use of specific tools:

Tool	Use
Steel rule	Measures length accurately
Scriber	Marks metal for cutting or drilling
Try square	Checks and marks right angles
Centre punch	Marks metal before drilling to prevent drill slipping
Vernier caliper	Measures internal and external diameters and depths precisely

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –MUSIC AND DANCE

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

Answer all questions

SECTION A: COMPOSITION AND MUSIC THEORY (70 Marks)

QUESTION 1

(a)(i) Note value represented by ♫

- ♫ = **Quaver (eighth note)**, duration = ½ beat in 4/4 time.

(a)(ii) Meaning of a tie in rhythmic notation

- A tie connects **two notes of the same pitch**, indicating they should be **sustained for their combined duration**.

(a)(iii) Rewrite rhythm to fit 3/4 time

- Original rhythm: ♩ ♫ ♫ ♩ ♪ ♩ ♬ ♪
- 3/4 adaptation:
  Bar 1: ♩ ♫ ♫ (1 + ½ + ½ = 2 beats) → add a quaver rest (♪.) to complete 3 beats
  Bar 2: ♩ ♪ ♩ (1 + ½ + 1 = 2½) → add a quaver (½) to make 3 beats
  (Diagram not possible in plain text; can use symbols as above)

(a)(iv) Compose 2-bar rhythm in 4/4

- Bar 1: ♩ ♩ ♪ ♪ ♫ ♫ ♩
- Bar 2: ♩ ♬ ♩ ♪ ♩ ♩
- Notes: ♩=crotchet, ♪=quaver, ♬=semiquaver, ♫=quaver

QUESTION 2

(a)(i) Key of the scale G A B C D E F♯ G

- **G major**

(a)(ii) Scale type and reason

- Major scale
- Reason: The interval pattern between notes follows **Tone-Tone-Semitone-Tone-Tone-Tone-Semitone**.

(a)(iii) Ascending vs descending scales

- **Ascending:** Notes move **from low to high pitch**
- **Descending:** Notes move **from high to low pitch**

(b) 6-bar melody in major key (example in C major)

- Motif: C D E | E F G | G F E | F G A | A G F | C – rest – C
- Dynamics: p (soft), mf (medium), f (loud)

QUESTION 3

(a) Interval between C and G

- **Perfect fifth**

(b) Transpose up a major 2nd

- Original: C – E – G – F – D – C
- Transposed: D – F♯ – A – G – E – D

(c) Transposed melody in bass clef

- D – F♯ – A – G – E – D (written on bass staff)

(d) Practical uses of transposition
i) To suit vocal range of singers
ii) To adapt a piece for different instruments

QUESTION 4

(a) Divide sentence into syllables

- Kenya ye-tu ni n-chi ya a-ma-ni

(b) Suitable time signature

- **4/4 time** – Each beat corresponds to one syllable or combination, easy for singing.

(c) 2-bar melodic phrase (example in C major)

- Notes for each syllable: C D E F | G F E D
- Use p (soft) for first bar, mf for second bar

QUESTION 5

(a) Define triad

- A **triad** is a **chord made of three notes**: root, third, and fifth.

(b) Primary chords in C major

- I = C–E–G
- IV = F–A–C
- V = G–B–D

(c) Harmonize melody using I, IV, V

- Melody: C – C – G – A – G – F – E
- Harmonization example:
    - C (I) – C (I) – G (V) – A (V) – G (V) – F (IV) – E (I)

QUESTION 6

(a) Music notation software
i) MuseScore
ii) Sibelius

(b) Steps for creating a new score
i) Open software and select "New Score"
ii) Choose key, time signature, and instruments
iii) Enter notes using mouse or MIDI keyboard

(c) Advantages of digital notation software
i) Easy to edit and transpose music
ii) Can play back music for immediate feedback
iii) Produces professional sheet music for printing

SECTION B: PERFORMANCE AND DANCE (30 Marks)

QUESTION 7

(a) Characteristics of Kenyan traditional songs
i) Call-and-response structure
ii) Use of pentatonic scales
iii) Oral transmission / memorized

(b) Social functions of traditional music
i) Celebrates community events (weddings, harvest)
ii) Teaches cultural values and history
iii) Encourages social cohesion

(c) Performance elements in traditional dance
i) Rhythm and timing
ii) Body movement and posture
iii) Costumes and props
iv) Facial expression and energy

QUESTION 8

(a) Solo vs ensemble

- **Solo:** One performer, independent expression
- **Ensemble:** Group performance, coordinated harmony

(b) Vocal techniques for solo singing
i) Proper breathing control
ii) Clear diction
iii) Pitch accuracy

(c) Importance of articulation and phrasing

- Ensures clarity, expression, and correct musical interpretation

(d) Benefits of participating in music performance
i) Improves confidence and self-expression
ii) Develops teamwork and discipline

QUESTION 9

(a) Indigenous instruments categories
i) **Idiophones:** Thumb piano, xylophone – sound produced by the material vibrating
ii) **Aerophones:** Flute, whistle – sound produced by vibrating air column
iii) **Membranophones:** Drum – sound produced by vibrating membrane

(b) Sound production in an aerophone (e.g., flute)

- Air is blown across a hole; the air column vibrates inside producing sound

(c) Cultural values preserved through indigenous music
i) Oral history and storytelling
ii) Social norms and morals
iii) Community identity and unity
iv) Rituals and ceremonies

GRADE 10 MUSIC AND DANCE – REVISION SHEET

1. Rhythm Notation

Original rhythm: ♩ ♫ ♫ ♩ ♪ ♩ ♬ ♪

- ♩ = Crotchet (1 beat)
- ♪ = Quaver (½ beat)
- ♫ = Quaver pair (½+½ beat)
- ♬ = Semiquaver pair (¼+¼ beat)

Tie example:

```
♩—♩   → Hold note for 2 beats
```

2-bar rhythm in 4/4:

```
Bar 1: ♩ ♩ ♪ ♪ ♫ ♫ ♩
Bar 2: ♩ ♬ ♩ ♪ ♩ ♩
```

3/4 adaptation example:

```
Bar 1: ♩ ♫ ♫ ♪
Bar 2: ♩ ♪ ♩ ♫
```

2. Melody Examples

C Major scale: C D E F G A B C

Key: C Major
Triad construction: I=C–E–G | IV=F–A–C | V=G–B–D

6-bar melody (with dynamics):

```
Bar 1: C D E | p (soft)
Bar 2: E F G | mf (medium)
Bar 3: G F E | f (loud)
Bar 4: F G A | mf
Bar 5: A G F | p
Bar 6: C - rest - C | mf
```

Transposition up a major 2nd:
Original: C – E – G – F – D – C
Transposed: D – F# – A – G – E – D

Bass clef version:

```
D – F# – A – G – E – D (written on bass staff)
```

3. Syllables and Time Signature

Sentence: **"Kenya yetu ni nchi ya amani"**

- Syllables: Ke-nya ye-tu ni n-chi ya a-ma-ni

Suggested Time Signature: 4/4

- Each beat matches a syllable grouping for smooth singing

2-bar melodic phrase example:

```
Bar 1: C D E F
Bar 2: G F E D
Dynamics: Bar 1=p, Bar 2=mf
```

4. Harmonization Example

Melody: C – C – G – A – G – F – E
Harmonized using I, IV, V chords:

```
C(I) – C(I) – G(V) – A(V) – G(V) – F(IV) – E(I)
```

Chord symbols above staff:

```
C    C    G    G    G    F    C
C – C – G – A – G – F – E
```

5. Triads and Chord Symbols

- **Triad definition:** 3-note chord = Root + Third + Fifth

Primary triads in C major:

- I = C–E–G
- IV = F–A–C
- V = G–B–D

Notation Example:

```
C Major Triad:  | C | E | G |
F Major Triad:  | F | A | C |
G Major Triad:  | G | B | D |
```

6. Staff Notation for Rhythm and Melody

4/4 Example (C Major, simple rhythm)

```
Treble Clef:
| ♩   ♪  ♪  ♫ ♫ ♩ | ♩ ♬ ♩ ♪ ♩ ♩ |
C    D  E  F  G  A  B  C  D  E
```

Dynamics:

- p = piano (soft)
- mf = mezzo forte (medium)
- f = forte (loud)

7. Traditional Music & Dance

Characteristics of Kenyan traditional songs:

- Call-and-response
- Oral transmission
- Use of pentatonic scale

Social functions:

- Cultural celebrations (weddings, harvest)
- Teaching morals
- Promotes unity

Dance performance elements:

- Rhythm & timing
- Body posture & movement
- Costume & props
- Facial expression

8. Vocal & Performance Techniques

Solo vs Ensemble:

- Solo = 1 performer, individual expression
- Ensemble = Group, coordinated performance

Vocal techniques:

- Breath control
- Pitch accuracy
- Clear diction

Articulation & phrasing:

- Enhances clarity, musical expression, and emotional interpretation

Benefits of performing:

- Builds confidence
- Encourages teamwork

9. Indigenous Instruments

Categories:

- Idiophones (xylophone, thumb piano) – material vibrates
- Aerophones (flute, whistle) – air column vibrates
- Membranophones (drums) – membrane vibrates

Sound production (Aerophone example):

- Air blown across hole → air column vibrates → sound produced

Cultural values preserved:

- Oral history
- Social norms & morals
- Community identity
- Rituals & ceremonies

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –PHYSICAL EDUCATION

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

Answer all questions

GRADE 10 – PHYSICAL EDUCATION ANSWERS

QUESTION 1: RUGBY (6 MARKS)

a) Types of passes in rugby:
i. **Spin pass** – ball spins to increase accuracy and distance
ii. **Pop pass** – short, quick pass over a short distance
iii. **Cut-out pass** – skips one or more players to reach the backline

b) Safety rules for tackling:
i. Tackle below the shoulders to avoid head and neck injuries
ii. Keep feet grounded and wrap arms around the opponent

c) Benefit of mastering side-step:

- Helps evade opponents and maintain possession of the ball

QUESTION 2: VOLLEYBALL (8 MARKS)

a) Volleyball court facilities:
i. Net
ii. Court lines/markings
iii. Attack line (3-meter line)

b) Correct body position for a spike:
i. Knees slightly bent
ii. Arms drawn back, ready to swing forward
iii. Jump using legs and swing arms over the net

c) Volleyball equipment:
i. Volleyball
ii. Knee pads

QUESTION 3: BASKETBALL (10 MARKS)

a) Zones of a basketball court:
i. Key (painted area / free throw lane)
ii. Three-point line zone
iii. Midcourt / Centre circle

b) Defensive techniques to mark an opponent:
i. Man-to-man marking
ii. Zone marking
iii. Denial defense

c) Basketball equipment:
i. Ball
ii. Hoop / backboard

d) Advantages of effective marking:
i. Reduces opponent scoring opportunities
ii. Forces turnovers and regains possession

QUESTION 4: HANDBALL (7 MARKS)

a) Handball court diagram:
(Draw rectangle; mark centre line and semicircular goal areas at both ends)

b) Key stances when passing:
i. **Chest pass stance** – knees bent, chest facing teammate, two-handed pass
ii. **Bounce pass stance** – crouch slightly, pass with ball bouncing to teammate

c) Advantages of accurate passing:
i. Maintains possession of the ball
ii. Increases chances of scoring

QUESTION 5: FOOTBALL (10 MARKS)

a) Qualities of a good goalkeeper:
i. Quick reflexes
ii. Good hand-eye coordination
iii. Strong diving ability

b) Stance before lofted pass:

- Feet shoulder-width apart, knees slightly bent, eyes on the ball, use laces to kick

c) Roles of follow-through when kicking:
i. Ensures power and accuracy
ii. Helps maintain balance

d) Goalkeeping skills during play:
i. Catching
ii. Diving
iii. Punching

QUESTION 6: NETBALL (9 MARKS)

a) Netball facilities:
i. Goalposts
ii. Court markings
iii. Netball ring

b) Types of passes in netball:
i. Chest pass
ii. Bounce pass
iii. Shoulder pass

c) Safety precautions:
i. Avoid contact with opponents to prevent injury
ii. Warm-up before the game
iii. Wear appropriate shoes for grip

QUESTION 7: GENERAL FITNESS & MOVEMENT SKILLS (7 MARKS)

a) Define follow-through:

- Continuation of movement after executing a skill to ensure control and accuracy

b) Benefits of proper dodging techniques:
i. Avoids being tagged or intercepted
ii. Maintains speed and agility

c) Qualities of an effective marker:
i. Alertness
ii. Good positioning
iii. Quick reactions

QUESTION 8: VOLLEYBALL SERVE & SETTING (6 MARKS)

a) Types of volleyball serves:
i. Underhand serve
ii. Overhand serve
iii. Jump serve

b) Hand placement during a set:
i. Fingers spread around ball, thumbs behind
ii. Push ball upwards with finger pads

c) Safety precaution when serving:

- Ensure space is clear of players to avoid collisions

QUESTION 9: SPORTS EQUIPMENT IDENTIFICATION (6 MARKS)

a) Football equipment sketch:

1. Football (soccer ball)
2. Goalposts
3. Corner flags
4. Cones (for drills)

b) Protective rugby equipment:
i. Mouthguard
ii. Shoulder pads

QUESTION 10: SAFETY IN SPORTS (11 MARKS)

a) General safety rules in ball games:
i. Warm-up before the game
ii. Use proper footwear
iii. Follow game rules and signals

b) Warm-up exercises prevent injuries by:
i. Increasing blood flow to muscles
ii. Improving flexibility and range of motion

c) Safety precautions for goalkeepers:
i. Wear gloves to protect hands
ii. Keep eyes on the ball during play

d) Safety rules for handball:
i. Avoid high contact when jumping to shoot
ii. Keep within goal area rules

e) Safety measures in rugby:
i. Tackle safely below the shoulder line
ii. Wear protective gear (mouthguard, headgear)

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –PHYSICS

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

GRADE 10 – PHYSICS ANSWERS

QUESTION 1

a) Definition of Physics:

- Physics is the branch of science that deals with the study of matter, energy, and the interactions between them.

b) Four areas of study in Physics:

i. Mechanics – study of motion and forces

ii. Thermodynamics – study of heat and temperature

iii. Optics – study of light and its behavior

iv. Electricity and Magnetism – study of electric and magnetic phenomena

c) Contributions of Physics to modern technology:

i. Development of electrical appliances (motors, generators, computers)

ii. Advancement in medical technology (X-rays, MRI scanners)

QUESTION 2

a) Define Pressure:

- Pressure is the force applied per unit area.

$$P = \frac{F}{A}$$

b) Pressure in liquids (derivation):

- Consider a column of liquid of height h, density ρ, under gravity g:

$$P = \frac{F}{A} = \frac{mg}{A} = \frac{\rho V g}{A} = \frac{\rho A h g}{A} = \rho g h$$

$$\therefore P = \rho g h$$

c) Diver 5 m below water surface, $\rho = 1000$ kg/m³

i) Pressure due to water:

$$P = \rho g h = 1000 \times 10 \times 5 = 50{,}000 \text{ Pa}$$

ii) Total pressure including atmospheric:

$$P_{total} = P_{water} + P_{atm} = 50{,}000 + 1.0 \times 10^5 = 150{,}000 \text{ Pa}$$

QUESTION 3: HYDRAULICS

a) Pascal's Principle:

- Pressure applied to an enclosed fluid is transmitted undiminished to every part of the fluid.

b) Hydraulic lift calculations:

- Small piston area $A_1 = 0.02\, m^2$, Force $F_1 = 200N$

i) Pressure produced:

$$P = \frac{F}{A} = \frac{200}{0.02} = 10{,}000\, Pa$$

ii) Force by larger piston $A_2 = 0.4m^2$**:**

$$F_2 = P \times A_2 = 10{,}000 \times 0.4 = 4000\, N$$

c) Advantage of hydraulic systems:

- Can lift heavy loads with small applied force

QUESTION 4: STRESS AND STRAIN

a) Definitions:

i. **Stress:** Force per unit area on a material.

$$\sigma = \frac{F}{A}$$

ii. **Strain:** Extension per unit length of a material.

$$\varepsilon = \frac{\Delta L}{L}$$

b) Strain calculation:

$$\varepsilon = \frac{\Delta L}{L} = \frac{0.003}{1.5} = 0.002$$

c) Stress calculation:

$$\sigma = \frac{F}{A} = \frac{300}{0.0001} = 3 \times 10^6\, Pa$$

d) Why bridges are made of steel:

- Steel is strong, elastic, and can withstand tension and compression; plastic is weak and deforms easily.

QUESTION 5: HOOKE'S LAW

a) Statement:

- The extension of a spring is directly proportional to the applied force, as long as the elastic limit is not exceeded.

b) Spring calculations:

- Force $F = 10N$, Extension $x = 0.05m$

i) Spring constant:

$$k = \frac{F}{x} = \frac{10}{0.05} = 200\, N/m$$

ii) Extension for $F = 25N$:

$$x = \frac{F}{k} = \frac{25}{200} = 0.125m$$

QUESTION 6: TEMPERATURE AND THERMAL EXPANSION

a) Define temperature:

- Temperature is a measure of the hotness or coldness of a body.

b) Convert temperatures:

i) $27°C \rightarrow K = 27 + 273 = 300K$

ii) $300K \rightarrow °C = 300 - 273 = 27°C$

c) Fractional expansion of rod:

$$\text{Fractional expansion} = \frac{\Delta L}{L} = \frac{0.004}{2} = 0.002$$

d) Why pipes burst in winter:

- Water contracts on freezing, pressure builds inside rigid pipes, causing them to burst.

QUESTION 7: ANOMALOUS EXPANSION

a) Anomalous expansion of water:

- Water expands as it cools below 4°C, reaching maximum density at 4°C.

b) Applications of thermal expansion:

i. Expansion joints in bridges

ii. Bimetallic strips in thermostats

iii. Gaps in railway tracks

QUESTION 8: MOMENTS

a) Moment of force:

$$\text{Moment} = \text{Force} \times \text{Perpendicular distance from pivot}$$

b) Principle of moments:

- For a body in equilibrium, sum of clockwise moments = sum of anticlockwise moments

c) Moment calculation:

$$M = F \times d = 50 \times 0.4 = 20\,Nm$$

d) Balancing metre rule:

- Let x = distance for 15 N weight from pivot:

$$\text{Clockwise moment} = \text{Anticlockwise moment} 20 + 10 \cdot 0.5 = 15 \cdot x \Longrightarrow x = 0.666m$$

QUESTION 9: CENTRE OF GRAVITY

a) Definition:

- The point through which the entire weight of a body acts.

b) Stable vs unstable equilibrium:

- **Stable:** returns to original position after slight displacement
- **Unstable:** falls over when slightly displaced

c) Buses with roof loads are less stable:

- Raises centre of gravity, making tipping easier

d) Factors affecting centre of gravity:

i. Distribution of mass

ii. Shape of the object

iii. Height of load above base

QUESTION 10: LADDERS AND BEAMS

a) Ladder reaction forces:

- Ladder is uniform, weight = 400 N, supported at both ends → each support carries:

$$R = 400/2 = 200N$$

b) Beam moments:

- Beam weight = 300 N, load = 1000 N, length = 3 m:

$$\text{Total moment} = (300 \times 1.5) + (1000 \times 3) = 450 + 3000 = 3450\ Nm$$

c) Longer beams require stronger supports:

- Moment increases with distance; longer beams exert larger torque

QUESTION 11: BASIC DEFINITIONS

a) Force:

- A push or pull that can change the motion of an object.

b) Pressure:

- Force per unit area, $P = F/A$

c) Work:

- Work done = force × displacement in the direction of force

$$W = F \cdot d$$

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –POWER MECHANICS

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A (60 MARKS)

QUESTION 1

a) Define Power Mechanics:

- Power Mechanics is the branch of technical education that deals with the study of machines, engines, their components, operation, maintenance, and repair.

b) Objectives of studying Power Mechanics:
i. To equip learners with practical skills in operating, maintaining, and repairing vehicles and machines.
ii. To prepare learners for careers in the automotive and mechanical engineering industries.

QUESTION 2

a) Career opportunities in Power Mechanics:
i. Motor vehicle technician / mechanic
ii. Automotive engineer
iii. Hydraulic or heavy machinery technician
iv. Motor vehicle inspector / examiner
v. Automotive parts designer / technician

b) Ethical qualities of a professional motor vehicle technician:
i. Honesty – providing accurate assessments and reports
ii. Punctuality – completing work on time
iii. Responsibility – ensuring safety and quality of work
iv. Respect for clients and colleagues
v. Integrity – using genuine spare parts

QUESTION 3

a) Inventor of the first practical gasoline-powered automobile:

- Name: **Karl Benz**
- Year: **1885**

b) Limitations of early motor vehicles:
i. Low speed and inefficient engines

ii. High cost and limited availability
iii. Frequent breakdowns and poor reliability

c) Ways mass production transformed the automobile industry:
i. Reduced cost of vehicles making them affordable
ii. Increased production rates and availability of cars
iii. Standardization of parts

QUESTION 4

a) Differences between two-stroke and four-stroke engines:

Two-stroke engine	Four-stroke engine
Completes a power cycle in 2 strokes of the piston	Completes a power cycle in 4 strokes of the piston
Higher power output for the same engine size	Lower power output but more fuel-efficient
Simpler design and lighter	Complex design and heavier
Wears faster due to higher operating speed	Longer lifespan
Lubrication mixed with fuel	Uses separate lubrication system

b) Advantages of hybrid engines:
i. Reduced fuel consumption and lower emissions
ii. Uses both petrol and electric power for efficiency

QUESTION 5

a) Essential sections in a power mechanics workshop:
i. Engine repair section
ii. Electrical/electronics section
iii. Welding and fabrication section
iv. Workshop tools and equipment storage
v. Vehicle inspection/diagnostic area

b) Importance of proper workshop layout:
i. Reduces accidents and ensures safety of workers
ii. Improves efficiency by organizing tools and workflow

QUESTION 6

a) General safety rules in a workshop:
i. Wear protective clothing (overalls, gloves, goggles)
ii. Keep workshop clean and free from obstacles
iii. Handle tools carefully
iv. Store flammable liquids safely
v. Ensure proper ventilation

b) Consequences of ignoring safety procedures:
i. Injuries to workers (cuts, burns, electric shocks)
ii. Damage to equipment and vehicles

QUESTION 7

a) Functions of tools:
i. **Vernier caliper:** Measures internal, external dimensions and depths accurately

ii. **Micrometer screw gauge:** Measures very small lengths or thicknesses to high precision
iii. **Torque wrench:** Applies precise torque to nuts and bolts to prevent over-tightening

b) Importance of precision measuring tools:
i. Ensures accurate assembly of engine components
ii. Prevents wear and reduces breakdowns

QUESTION 8

a) Ferrous and non-ferrous metals:

Ferrous metals	Non-ferrous metals
Steel	Aluminium
Cast iron	Copper
Iron	Brass, bronze (additional examples)

b) Properties of aluminium for engine components:
i. Lightweight – improves fuel efficiency and vehicle performance
ii. Corrosion resistant – lasts longer and requires less maintenance
iii. Good thermal conductivity – dissipates heat efficiently

SECTION B (40 MARKS)

QUESTION 9

a) Orthographic projection:

- A method of representing a three-dimensional object in two dimensions using multiple views (front, top, side).

b) Importance of accuracy in technical drawing:
i. Ensures parts fit together correctly during assembly
ii. Reduces errors and wastage of materials
iii. Facilitates clear communication between designers and technicians

c) Instruments used in mechanical drawing:
i. **T-square** – draws horizontal lines and aligns other instruments
ii. **Set squares** – draws vertical and inclined lines
iii. **Compass** – draws arcs and circles

QUESTION 10

a) Factors to consider when selecting workshop site:
i. Accessibility for vehicles and materials
ii. Availability of electricity and water
iii. Adequate space for work areas and storage
iv. Safety and ventilation

b) Ways to promote environmental sustainability:
i. Recycling used oils and metals
ii. Proper disposal of hazardous waste
iii. Using energy-efficient equipment

QUESTION 11

a) Functions of vehicle systems:
i. **Cooling system:** Removes excess heat from the engine to prevent overheating (radiator, coolant circulation)
ii. **Lubrication system:** Reduces friction between moving engine parts, preventing wear and overheating

b) Signs of faulty braking system:
i. Brake pedal feels soft or sinks
ii. Unusual noises or vibrations during braking

QUESTION 12

a) Reasons for encouraging electric vehicles:
i. Reduces air pollution and greenhouse gas emissions
ii. Lowers dependency on fossil fuels

b) Challenges in developing countries:
i. High initial cost of electric vehicles
ii. Lack of charging infrastructure

QUESTION 13

a) Causes of engine overheating:
i. Low coolant level or leaking coolant
ii. Faulty radiator or water pump

b) Preventive maintenance practices:
i. Regularly check and top up coolant
ii. Clean radiator and ensure proper airflow

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –SPORTS AND RECREATION

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A: THEORY (70 MARKS)

QUESTION 1

a) Define flexibility as a component of health-related fitness:

- Flexibility is the ability of a joint or series of joints to move through their full range of motion without discomfort or injury.
- It allows muscles and ligaments to stretch and contract efficiently.

b) Differentiate between static and dynamic stretching:

Static Stretching	Dynamic Stretching
Involves holding a position for a period (10–30 seconds)	Involves moving joints and muscles through full range of motion
Focuses on lengthening muscles	Focuses on warming up muscles and joints
Usually done after exercise	Usually done before exercise
Low risk of injury	Increases heart rate and muscle temperature

c) Benefits of flexibility exercises for sports performance:
i. Reduces risk of injuries such as strains and sprains
ii. Enhances movement efficiency and range of motion

QUESTION 2

a) Define:
i. **Muscular strength:** The maximum force a muscle or group of muscles can exert in a single effort.
ii. **Muscular endurance:** The ability of a muscle or group of muscles to perform repeated contractions over a period without fatigue.

b) Activities that develop muscular strength:
i. Weightlifting
ii. Resistance band exercises
iii. Push-ups, sit-ups, squats

c) Improvised equipment for strength training using local materials:
i. Using sandbags or water jerrycans for resistance
ii. Wooden logs as lifting or balancing tools

QUESTION 3

a) Define cardiovascular endurance:

- The ability of the heart, lungs, and blood vessels to supply oxygen to muscles during sustained physical activity.

b) High-impact cardiovascular activities:
i. Running
ii. Jump rope
iii. Sprinting

c) Benefits of cardiovascular exercises:
i. Improves heart and lung efficiency
ii. Increases stamina and reduces fatigue

d) Low-impact cardiovascular activities:
i. Swimming
ii. Cycling
iii. Brisk walking

QUESTION 4

a) Define posture:

- Posture is the alignment and positioning of the body while standing, sitting, or moving. Correct posture ensures balance and reduces strain on muscles and joints.

b) Movements in sports requiring correct posture:
i. Sprinting
ii. Gymnastics
iii. Weightlifting
iv. Volleyball jump and landings

c) Effects of poor posture on performance:
i. Reduces efficiency and speed of movement
ii. Increases risk of injuries and muscle strain

QUESTION 5

a) Define recreation:

- Recreation is any enjoyable and relaxing activity undertaken during free time to improve physical, mental, and social well-being.

b) Examples of recreation activities:
i. Swimming
ii. Hiking
iii. Dancing
iv. Team games (football, netball)
v. Cycling

c) Benefits of recreation activities:
i. Improves mental health and reduces stress
ii. Enhances physical fitness and overall well-being

QUESTION 6

a) Define:
i. **Acute injury:** A sudden injury resulting from a specific trauma, e.g., sprain or fracture.
ii. **Chronic injury:** A long-term injury caused by repeated stress, overuse, or poor technique, e.g., tendonitis.

b) Match sports injuries to causes:

Sports Injury	Cause
Hamstring strain	Sudden sprinting or over-stretching
Sprained ankle	Twisting the ankle during movement
Tennis elbow	Repetitive arm movements
Concussion	Head impact during contact sports

c) Strategies to prevent injuries:
i. Proper warm-up and stretching
ii. Using correct techniques and protective gear

QUESTION 7

a) Reasons why warm-up exercises are important:
i. Increases blood flow and muscle temperature
ii. Prepares the body for strenuous activity and reduces injury risk

b) Principles of training in sports:
i. Specificity – training should target specific skills or fitness components
ii. Overload – gradually increasing intensity or volume to improve fitness
iii. Progression – gradual increase in training load for continuous improvement

c) Signs of overtraining:
i. Persistent fatigue and low energy
ii. Decreased performance and frequent injuries

QUESTION 8

a) Components of health-related fitness:
i. Flexibility
ii. Muscular strength
iii. Muscular endurance
iv. Cardiovascular endurance
v. Body composition

b) Benefits of maintaining a healthy lifestyle:
i. Enhances sports performance and stamina
ii. Reduces risk of lifestyle diseases
iii. Improves mental health and concentration

QUESTION 9

a) Locally improvised sports equipment:
i. Water jerrycans for weights
ii. Wooden sticks or poles for agility drills
iii. Old tyres for strength and plyometric training

b) Advantages of proper sports equipment:
i. Reduces risk of injuries
ii. Enhances performance and accuracy

c) Safety precaution when using sports equipment:

- Always inspect equipment before use for damage or wear.
- Use protective gear and follow proper technique.

QUESTION 10

Matching terms:

Terms	Description
Agility	b) Ability to move quickly and change direction
Balance	d) Ability to maintain stability while stationary or moving
Coordination	c) Using senses and body parts to perform movements smoothly
Reaction time	a) Time taken to respond to a stimulus
Speed	e) Ability to move body parts quickly in a straight line

QUESTION 11

Identify terms based on descriptions:
a) Type of training to improve heart/lung efficiency → **Cardiovascular / Aerobic training**
b) Ability of a muscle to repeatedly exert force → **Muscular endurance**
c) Sudden physical damage to body → **Acute injury**
d) Activity that reduces mental stress → **Recreation / Leisure activity**
e) Maintaining correct spine alignment → **Good posture / Correct posture**

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –THEATRE AND FILM TECHNOLOGY

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

QUESTION 1

a) Define the following terms:

i) **Performing Arts:**

- Performing arts refers to creative art forms that are performed live for an audience, including theatre, music, dance, and drama.
- It involves expressing ideas, emotions, or stories through performance.

ii) **Script:**

- A script is a written text of a play, film, or performance containing dialogue, stage directions, and character instructions.
- It serves as a guide for actors and directors during rehearsal and production.

b) Similarities between live theatre and radio drama:

i. Both tell a story to an audience
ii. Both involve dialogue, narration, and sound effects
iii. Both require performance skills such as voice modulation and expression

c) Advantages of film production over stage theatre:

i. Can be recorded, edited, and distributed widely
ii. Offers multiple camera angles and special effects
iii. Allows scenes to be performed out of sequence
iv. Provides permanent record of performance

QUESTION 2 – Matching Performance Types

Column A	Column B
Monologue	B. A speech delivered by one character
Mime	C. Acting without spoken words
Improvisation	D. Unrehearsed acting based on prompts
Satire	A. Performance using exaggerated humor and satire
Chorus	E. Group speaking or singing together
Soliloquy	F. Character reveals thoughts alone on stage

QUESTION 3

a) Characteristics of African community theatre:
i. Involves community participation
ii. Incorporates music, dance, and storytelling
iii. Communicates moral or social messages
iv. Performed in local languages or dialects
v. Often held in open spaces or communal areas

b) Theatre forms based on descriptions:
i. Masked dancers narrating history → **Traditional/ritual theatre**
ii. Modern performance mixing poetry and activism → **Street theatre / Performance art**
iii. Classroom-based moral lessons → **Educational theatre / Theatre in education**
iv. Recorded and edited performance → **Film / Cinematic theatre**

QUESTION 4 – Excerpt "Seeds of Tomorrow"

a) Themes presented:
i. Environmental conservation / sustainability
ii. Community development / responsible resource use
iii. Intergenerational wisdom and mentorship

b) Conflict in dialogue:

- Economic needs versus environmental protection

c) Mediator character:

- **Babu** (village elder)

d) Character traits of Amani:
i. Determined / proactive
ii. Environmentally conscious / responsible
iii. Leadership qualities / persuasive

e) Dramatic technique (voice of community wisdom):

- **Chorus or narrative voice**

f) Ways the play could educate the community:
i. Promote tree planting and environmental awareness
ii. Encourage community dialogue and problem-solving
iii. Teach moral lessons about balance between survival and sustainability

QUESTION 5 – Poem "Echoes of the Drum"

a) Message from the poem:

- The poem emphasizes the importance of preserving cultural heritage and passing traditional knowledge to future generations.
- It warns against replacing culture with modern distractions.

b) Symbols and meanings:
i. Drum → Represents tradition, cultural heritage, and community memory
ii. Engines / crowded streets → Symbolize modernization, distraction, or loss of heritage

c) Challenges facing cultural heritage:
i. Modernization and urbanization
ii. Youth neglecting traditional practices

d) Poetic device in "Grandmother's voice rides on rhythm":

- **Personification** (giving human qualities to rhythm)

e) Performance techniques for spoken word:
i. Use of voice modulation and emphasis on rhythm
ii. Incorporating gestures, facial expressions, and body movements

f) Tone described ("longing mixed with hope for renewal"):

- **Reflective / hopeful tone**

QUESTION 6

a) Five stages of plot development in drama:
i. Exposition – Introduction of characters, setting, and situation
ii. Rising action – Series of events leading to climax
iii. Climax – Turning point or most intense moment
iv. Falling action – Events leading to resolution
v. Resolution / denouement – Conflict is resolved and story concludes

b) Stage of plot (highest tension):

- **Climax**

c) Purposes of dialogue:
i. Reveal character traits and development
ii. Advance the plot / convey information
iii. Express conflict and emotion
iv. Engage the audience

QUESTION 7

a) Define spoken word poetry:

- Spoken word poetry is a performance art where poetry is recited aloud with emphasis on voice, expression, and audience interaction.

b) Features of spoken word performance:
i. Use of rhythm, rhyme, and repetition
ii. Emotional expression and dramatization
iii. Engagement with the audience / interaction
iv. Often improvisational or personal storytelling

c) Performance element (facial expressions, tone, gestures):

- **Expression / Acting techniques**
- Can also be called **performance dynamics**

d) Social issues suitable for spoken word in schools:
i. Bullying and peer pressure
ii. Gender equality and inclusion
iii. Drug abuse / youth empowerment
iv. Environmental conservation

QUESTION 8

a) Six-line dramatic monologue about technology and youth:

"Screens glow bright, yet hearts stay cold,
Notifications replace tales of old.
We scroll and swipe, chasing fleeting fame,
While nature and neighbors fade like a game.
Can we pause, unplug, and reconnect?
Or let gadgets shape our intellect?"

b) Form of writing:

- **Dramatic monologue / spoken word**

c) Ways theatre and poetry promote national unity:
i. Encourages dialogue and understanding among diverse communities
ii. Highlights shared culture, history, and values

d) Type of character ("changes positively by the end"):

- **Dynamic character / Round character**

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –WOOD TECHNOLOGY

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

SECTION A

1. Wood Materials and Uses

a) Define timber-yard:

- A timber-yard is a place where logs and sawn timber are stored, processed, sold, and prepared for construction or woodworking purposes.
- It may include stacking, seasoning, and selling timber.

b) Products made from hardwood and softwood:

Hardwood products:
i. Furniture (chairs, tables, cabinets)
ii. Flooring and decking
iii. Joinery work (doors, window frames)
iv. Musical instruments

Softwood products:
i. Plywood and particleboards
ii. Roofing materials and ceiling boards
iii. Poles and fencing materials
iv. Paper pulp and crates

c) Reasons why hardwood is preferred for outdoor furniture:
i. Durable and resistant to weathering, decay, and insects
ii. Can withstand heavy loads and frequent use
iii. Maintains appearance longer (resistant to warping and splitting)

2. Matching Wood Properties

Column A	Column B
Durability	A. Ability to resist wear and decay
Workability	C. Ease of cutting and shaping
Strength	D. Ability to withstand load
Elasticity	B. Ability to bend without breaking

Density	E. Mass per unit volume
Texture	F. Surface feel of wood grain

3. Conversion and Seasoning of Timber

a) Methods of converting logs into timber:
i. Plain sawing / flat sawing
ii. Quarter sawing / radial sawing
iii. Rotary cutting / slicing
iv. Ripping or resawing

b) Advantages of seasoning timber:
i. Reduces moisture content, preventing shrinkage and warping
ii. Increases strength and durability
iii. Improves adhesion for glues and finishes

Disadvantages of seasoning timber:
i. Time-consuming process (air seasoning may take months)
ii. Requires space and proper handling to avoid defects

c) Methods described:
i. Timber stacked in open air → **Air seasoning**
ii. Timber dried in controlled chamber → **Kiln seasoning**
iii. Cutting along growth rings → **Quarter sawing**

d) Consequences of using unseasoned timber:
i. Warping, twisting, and cracking after use
ii. Susceptibility to fungal attacks, decay, and insect damage

4. Tree Structure and Growth

a) Parts of a tree trunk:
i. Outer protective covering → **Bark**
ii. Layer responsible for growth in thickness → **Cambium**
iii. Older central wood → **Heartwood**
iv. Lighter outer wood → **Sapwood**

b) Stages of timber tree growth:
i. Germination of seed / seedling stage
ii. Juvenile growth / sapling stage
iii. Maturity / harvesting stage

c) Environmental benefits of trees:
i. Provide oxygen and improve air quality
ii. Prevent soil erosion and maintain ecological balance
iii. Provide habitat for wildlife

d) Tree type described (sheds leaves, dense wood):

- **Deciduous tree / hardwood tree**

5. Workshop Safety

a) General safety rules:
i. Keep the workshop clean and organized
ii. Wear appropriate protective clothing
iii. Handle tools and machines properly
iv. Avoid running or horseplay in the workshop
v. Follow instructions when using machines

b) Personal Protective Equipment (PPE):
i. Safety goggles / eye protection
ii. Gloves
iii. Dust mask / respirator
iv. Ear protection / ear muffs
v. Apron / safety footwear

c) Consequences of careless handling of sharp tools:
i. Cuts, puncture wounds, and injuries
ii. Accidents leading to permanent disability

d) Safety practice described (keeping walkways clear):

- **Housekeeping / Good workshop practice**

6. Tools and Functions

a) Marking and cutting tools:

Marking tool	Cutting tool
Try square	Hand saw
Marking gauge	Chisel
Pencil / knife	Tenon saw
Steel ruler	Coping saw

b) Tool function matching:

Tool	Function
Try square	Checks right angles
Jack plane	Smoothens wood surfaces
G-clamp	Holds work firmly
Tape measure	Measures long distances

c) Reasons for correct tool selection:
i. Ensures accuracy and quality of work
ii. Prevents damage to materials and tools
iii. Reduces risk of accidents

7. Tool Maintenance

a) Methods of maintaining hand tools:
i. Regular cleaning after use
ii. Sharpening cutting edges
iii. Oiling and rust prevention

b) Reasons to store tools in dry place:
i. Prevents rust and corrosion
ii. Increases lifespan of tools

c) Maintenance practice described (applying oil):

- **Oiling / Lubrication**

d) Dangers of blunt cutting tools:
i. Increased risk of accidents (slipping, cutting oneself)
ii. Poor quality of work (rough surfaces, inaccuracies)

8. Entrepreneurship and Careers

a) Entrepreneurship in wood technology:

- The process of designing, producing, and selling wood products to earn a living and create economic opportunities.

b) Careers related to wood technology:
i. Carpenter / Joiner
ii. Furniture designer / Maker
iii. Cabinet maker
iv. Wood machinist / woodwork instructor

c) Ways wood technology contributes to community development:
i. Provides employment and income opportunities
ii. Supplies affordable furniture and construction materials
iii. Encourages local skill development

d) Professional described (makes furniture):

- **Carpenter / Woodworker / Joiner**

e) Reason studying wood technology reduces unemployment:

- Equips learners with practical skills to create jobs or start small businesses.

9. Workshop Establishment

a) Factors before starting a workshop:
i. Availability of raw materials (timber supply)
ii. Accessibility for transport and customers
iii. Adequate space and layout
iv. Availability of skilled labor
v. Capital / funding

b) Machines required in modern wood workshop:
i. Table saw / Circular saw
ii. Planer / Thicknesser
iii. Drill press / Band saw

c) Economic challenges affecting wood business:
i. High cost of raw timber

ii. Competition from imported furniture
iii. Unstable market demand

d) Business concept described (large-scale production):

- **Mass production / Industrial production**

e) Sustainable practices in wood production:
i. Planting replacement trees (reforestation)
ii. Using eco-friendly finishes and recycled timber
iii. Efficient use of timber to reduce wastage

KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 –CORE MATHEMATICS

April 2026

Time: 2 Hours

Code: CKEAB 004

MARKING SCHEME

Name: _____School: _____

Assessment Number: _____School Code: _____ Date: _____Signature: _____

INSTRUCTIONS TO LEARNERS

1. Solve for x:

$$4^{x+1} \cdot 2^{2x-3} = 512$$

Step 1: Express 4 as 2^2:

$$(2^2)^{x+1} \cdot 2^{2x-3} = 2^9 \quad (\text{since } 512 = 2^9)$$

Step 2: Simplify exponents:

$2^{2(x+1)} \cdot 2^{2x-3} = 2^9\ 2^{2x+2} \cdot 2^{2x-3} = 2^9\ 2^{(2x+2)+(2x-3)} = 2^9\ 2^{4x-1} = 2^9$

Step 3: Equate exponents:

$4x - 1 = 9\ 4x = 10 \Longrightarrow x = 2.5$

Answer: $x = 2.5$

2. Use logarithms to evaluate:

$$\frac{2.735 \times 0.0846}{0.693}$$

Step 1: Multiply numerator:

$$2.735 \times 0.0846 = 0.2312$$

Step 2: Divide by 0.693:

$$\frac{0.2312}{0.693} \approx 0.3337$$

Answer: 0.334 (3 s.f.)

3. Solve without using tables:

$$\log(2x+5)+\log 3=\log(x+11)$$

Step 1: Use $\log a+\log b=\log(ab)$:

$\log[3(2x+5)]=\log(x+11)$ $3(2x+5)=x+11$ $6x+15=x+11$ $5x=-4\Rightarrow x=-\frac{4}{5}$

Answer: $x=-\frac{4}{5}$

4. Rectangular hall:

Length $=x+4$, Width $=x-3$, Area $=77$ $(x+4)(x-3)=77$ $x^2+4x-3x-12=77$ $x^2+x-12-77=0$ $x^2+x-89=0$

Step 1: Use quadratic formula:

$x=\frac{-1\pm\sqrt{1+4(89)}}{2}=\frac{-1\pm\sqrt{357}}{2}$ $x=\frac{-1+18.894}{2}\approx 8.947$ $x=\frac{-1-18.894}{2}\approx -9.947$ (ignore negative)

Step 2: Dimensions:

Length $=x+4=12.947\approx 12.95$ m Width $=x-3=5.947\approx 5.95$ m

Answer: Length ≈ 12.95 m, Width ≈ 5.95 m

5. Sphere, cone, cylinder with equal radii

Given: Volume of sphere = 1437 cm³

a) Find radius of sphere:

$V=\frac{4}{3}\pi r^3=1437$ $r^3=\frac{1437\cdot 3}{4\pi}=\frac{4311}{12.566}\approx 343.2$ $r=\sqrt[3]{343.2}\approx 7$ cm

Answer: $r\approx 7$ cm

b) Volume of cylinder:

$$\text{Curved surface area} = 4\pi r^2 = 4\pi(7^2) = 196\pi$$

Cylinder CSA formula: $2\pi rh = 196\pi$

$$h = \frac{196\pi}{2\pi r} = \frac{196}{14} = 14\,\text{cm}$$

Volume of cylinder: $V = \pi r^2 h = \pi(49)(14) = 686\pi \approx 2155\,\text{cm}^3$

Answer: $V_{\text{cylinder}} \approx 2155\,\text{cm}^3$

c) Volume of cone:

Height same as cylinder $h = 14$

$$V = \frac{1}{3}\pi r^2 h = \frac{1}{3}\pi(49)(14) = \frac{686\pi}{3} \approx 719.2\,\text{cm}^3$$

Answer: $V_{\text{cone}} \approx 719.2\,\text{cm}^3$

6. Mean mark calculation

a)Frequency table:

Marks	Frequency	Midpoint (x)	fx
0–10	5	5	25
11–20	18	15.5	279
21–30	32	25.5	816
31–40	25	35.5	887.5
41–50	10	45.5	455

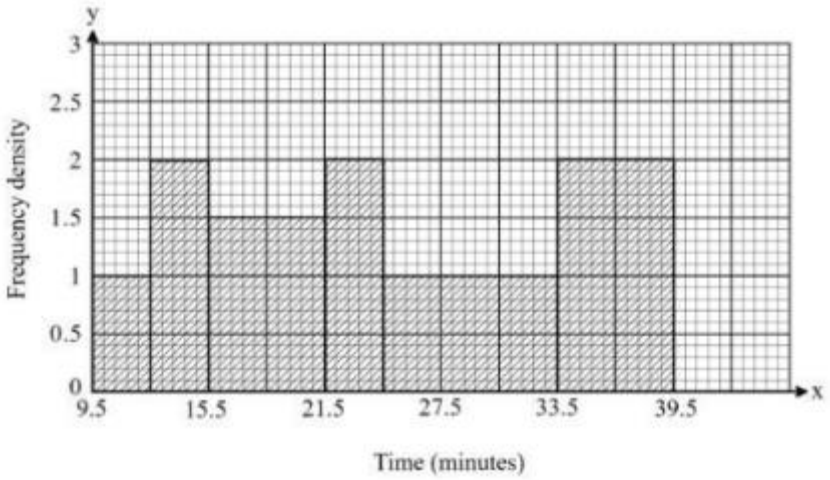
$$\text{Mean} = \frac{\sum fx}{\sum f} = \frac{25 + 279 + 816 + 887.5 + 455}{5 + 18 + 32 + 25 + 10} = \frac{2462.5}{90} \approx 27.36$$

Answer: Mean ≈ 27.36 marks

b.i

Time in minutes	10 – 12	13 – 15	16 – 21	22 – 24	25 – 33	34 – 39
Tally	///	~~////~~ /	~~////~~ ///	~~////~~ /	~~////~~ ////	~~////~~ ~~////~~ //
No. of students	3	6	9	6	9	12

.ii



c.i.

$$\frac{\text{Total Area}}{2} = \frac{45}{2} = 22.5$$

22.5 - 18 = 4.5

2 × w = 4.5

w = 2.25

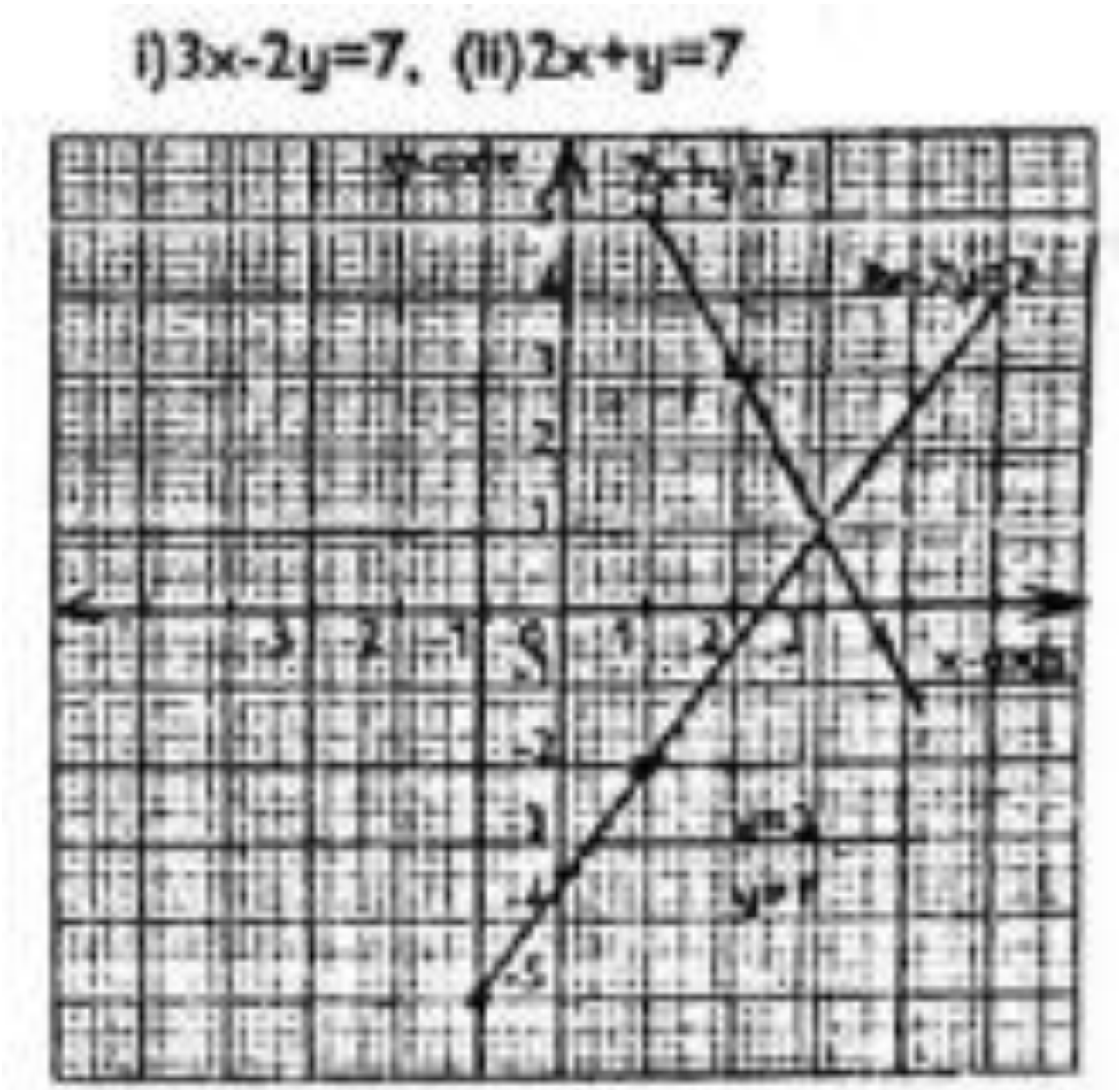
Median = 21.5 + 2.25 = 23.75

ii.

6 + 9 + 6

= 21 students

7.



8. Area of triangle (Heron's formula)

Sides: $a = 8, b = 10, c = 12$

$s = \frac{8+10+12}{2} = 15$ Area $= \sqrt{s(s-a)(s-b)(s-c)} = \sqrt{15(7)(5)(3)} = \sqrt{1575} \approx 39.686$

Answer: Area ≈ 39.69 cm²

9. Trader's problem

Spent 2/5 on stock → remaining = 3/5

Transport = 3/4 of remainder:

Remaining $= 3/5$ money, $3/4$ of remainder = Transport? Money spent on transport $= \frac{3}{4} \cdot \frac{3}{5} M = \frac{9}{20} M$

Remains = 9000 = M - (2/5 M + 9/20 M)

Total spent $= 2/5M + 9/20M = 8/20M + 9/20M = 17/20M$ $M - 17/20M = 1/20M = 9000 \Longrightarrow M = 9000 \cdot 20 = 180{,}000$

Transport = 9/20 M = 9/20 * 180,000 = 81,000

Answer: Transport = Ksh 81,000

10. Solve $5^{(x+2)} = 125^{(x-1)}$

$125 = 5^3 \Longrightarrow 5^{x+2} = (5^3)^{x-1} = 5^{3(x-1)}$ $x + 2 = 3x - 3 \Longrightarrow 2 + 3 = 3x - x = 2x \Longrightarrow x = \frac{5}{2} = 2.5$

Answer: x = 2.5

11. Two similar cones

Volume ratio = (scales)^3 → scale factor:

Volume ratio $= \frac{864}{256} = 3.375$ Linear scale $= \sqrt[3]{3.375} = 1.5$

CSA ratio = linear² → $1.5^2 = 2.25$

$$\text{CSA of larger cone} = 2.25 \cdot 200 = 450 \text{ cm}^2$$

Answer: CSA = 450 cm²

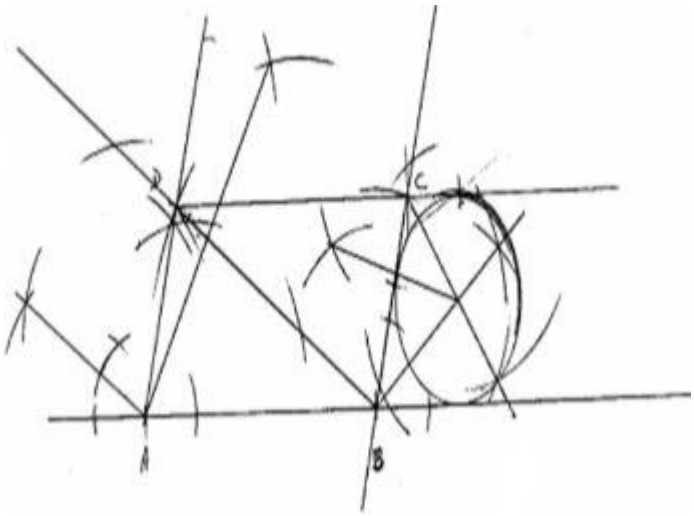
12. Wire problem

Remainder = 5 cm when divided by 18,24,30 → LCM of 18,24,30 = 360

$$\text{Length} = 360k + 5 \Longrightarrow \text{smallest possible length} = 360 + 5 = 365 \text{ cm}$$

Answer: 365 cm

13.



iv.

h = 3.2 cm ± 0.1

A = (½ x 3.2 x 6) 2

= 19.2 cm²

v. R = 1.6 cm ± 0.1

14. Two towns problem

Distance = 60 km

James speed = 20 km/h, Peter speed = 30 km/h

- James leaves at 8:00, Peter leaves at 9:00 → distance covered by James in 1 h = 20 km
- Remaining distance = 40 km

Combined speed = 20 + 30 = 50 km/h

$$\text{Time} = \frac{40}{50} = 0.8\,\text{h} = 48\,\text{min}$$

a) Time after 8:00 a.m.: 1 h + 48 min = 1.8 h → 1 h 48 min

b) Time of meeting: 8:00 + 1 h 48 min = 9:48 a.m.

Answer: 9:48 a.m.

15. Simplify

$\frac{(a+3b)^2-(a-3b)^2}{6ab}(a^2+6ab+9b^2)-(a^2-6ab+9b^2)=12ab\,\frac{12ab}{6ab}=2$

Answer: 2

16. Logarithm evaluation

$$\frac{58.72\times 406}{0.845}=\frac{23{,}830.72}{0.845}\approx 28{,}201.97$$

Answer: ≈ 28,202

17. Mwangi's mixture

a) Cement : Ballast

- Cement : Sand = 2:5
- Sand : Ballast = 3:7

$$\text{Cement : Sand : Ballast} = 2:5:\frac{5}{3}\cdot 7 = 2:5:11.667 \approx 6:15:35$$

- Cement : Ballast = 6 : 35

b) Bags of cement if 35 sand used:

- Cement : Sand = 2:5 → x : 35 = 2 : 5 → x = 14 bags

c) Cost of mixture:

- Cement 14 × 720 = 10,080
- Sand 35 × 150 = 5,250
- Ballast = 35 × 110 = 3,850
- Total = 10,080 + 5,250 + 3,850 = 19,180

d) Transport 28 tonnes, 4 tonnes per trip, 9,500 per trip

Trips $= \frac{28}{4} = 7$ Cost $= 7 \cdot 9{,}500 = 66{,}500$

18. Gradient of line

a) A(2,3), B(6,11)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{11 - 3}{6 - 2} = \frac{8}{4} = 2$$

b) P(-4,5), Q(2,-7)

$$m = \frac{-7 - 5}{2 + 4} = \frac{-12}{6} = -2$$

19. Equation of lines

a) Through (1,4) & (5,12):

$m = \frac{12-4}{5-1} = \frac{8}{4} = 2$ $y - 4 = 2(x - 1) \Longrightarrow y = 2x + 2$

b) Through (3,-2), parallel to y=4x+1 → slope = 4

$$y + 2 = 4(x - 3) \Longrightarrow y = 4x - 14$$

c) Perpendicular to y=3x-4 → slope = -1/3

$$y - 5 = -\frac{1}{3}(x - 2) \Longrightarrow y = -\frac{1}{3}x + \frac{17}{3}$$

20. Rounding & errors

a) 48.376

i) 1 d.p → 48.4

ii) 2 s.f → 48

b) Maximum possible error:

Length = 25 ± 0.5 cm → **0.5 cm**

21. **Percentage error:**

$$\frac{50-48}{50}\times 100 = \frac{2}{50}\cdot 100 = 4\%$$

22

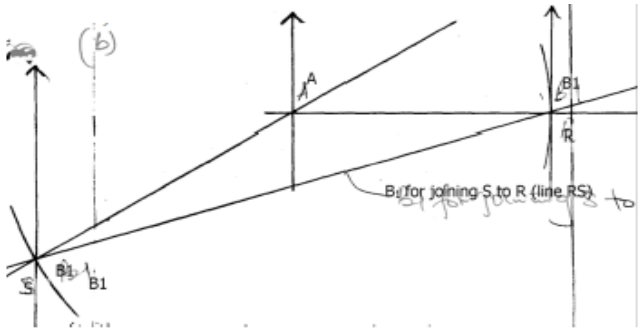
a.

i. Distance covered by s

= (750 x ½)km = 375 km

Distance covered by R

= (600 x ½) km = 300 km



b.

i. Distance between the two aeroplanes

= 12.5 x 50 = 625 ± 5 km

ii. Speed = ($^{625}/_{45}$ x 60) km/hr

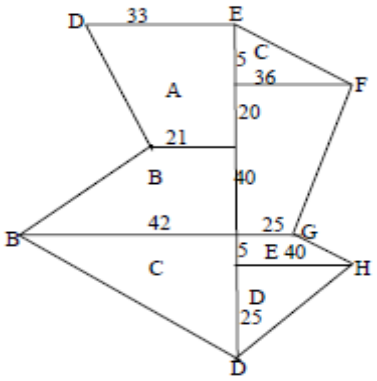
$833^{1}/_{3}$ km/h

c.

i. Bearing of S from R = 225^{o}

ii. The bearing of R from S = 72^{o}

23.



Area A: ½ x 25 (33 + 21) = 675

Area B: ½ x 40 (21 x 42) = 1260

Area C: ½ x 30 x 42 = 630

Area D: ½ x 25 x 40 = 500

Area E: ½ x 5 (40 + 25) = 162.5

Area F: ½ X 60 (25 + 36) = 1830

Area G: ½ x 5 x 36 = 90 √

= 5,147.5m^2

Empowering Learers, Building Competence,
Shaping the Future!