

**EDUCATION-NEWS CONSULT
FEBRUARY 2023 HOME MOCK**

FINAL INTEGRATED SCIENCE MARKING SCHEME

PAPER 1
OBJECTIVE TEST
[40 MARKS]

1	C	11	C	21	B	31	B
2	B	12	B	22	C	32	A
3	D	13	A	23	C	33	D
4	B	14	B	24	A	34	A
5	A	15	D	25	C	35	D
6	A	16	D	26	A	36	C
7	C	17	D	27	B	37	A
8	B	18	C	28	D	38	C
9	C	19	B	29	B	39	A
10	A	20	D	30	B	40	A

**PAPER 2
[100 MARKS]**

QUESTION 1

- (a)
- (i) **IDENTIFY THE PARTS LABELLED I,II,III AND IV.**
- I = delivery tube
 - II = test tube
 - IV = Bubbles of carbondioxide
- [3 marks @ 1 mark each]
- (ii) **WHAT OBSERVATION WOULD BE MADE AFTER SOMETIME?**
- Limewater becomes milky
- [1 mark]
- (iii) **CONCLUSION CAN BE DRAWN FROM THE EXPERIMENT?**
- Limewater becoming milky shows that expired air contains carbon dioxide. [1 mark]
- (iv) **GIVE A SUITABLE TITLE FOR THE EXPERIMENT?**
- Experiment to demonstrate that expired air contains carbon dioxide [2 marks]
- (v) **EQUATION FOR THE REACTION BETWEEN THE AIR BREATHED OUT AND
III.**
- $\text{CO}_2 + \text{Ca}(\text{OH})_2 \rightarrow \text{CaCO}_3 + \text{H}_2\text{O}$ [3 marks]
- [10 marks]
- (b)
- (i) **IDENTIFY THE PARTS LABELLED I, II, III, IV, V, VI AND VII.**
- I = gas
 - II = deposition
 - III = condensation
 - IV = freezing / solidification
 - V = solid
 - VI = melting
 - VII = Sublimation

[7 marks@ 1 mark each]

(ii) **ONE EXAMPLES EACH OF I AND V.**

Example of I

- Oxygen
- Hydrogen
- Helium
- Neon
- Xenon
- Carbon dioxide
- Ammonia
- Water vapour

Example of V

- Stone
- Book
- Pen
- Pencil
- Eraser
- Chalk
- Ruler
- Pillow

[2 marks @ 1 mark each]

(iii) **ONE EXAMPLE OF THE PART LABELLED VII.**

- Iodine
- Ammonium chloride
- Naphthalene

[1 mark]

[10 marks]

(c)

(i) **IDENTIFY EACH OF THE INSTRUMENT'S A, B, C AND D.**

- A = beam balance
- B = metre rule
- C = electronic balance
- D = dial spring balance

[4 marks @ 1 mark each]

(ii) **NAME THE PARTS LABELLED I, II, III, AND IV.**

- I = hanger
- II = pointer
- III = scale
- IV = hook

[2 marks @ 1 mark each]

(iii) **USE OF EACH OF THE INSTRUMENT'S A, D AND C**

- A (beam balance) is used for measuring mass of substances.
- C (Electronic balance) is used for measuring mass of substance.
- D (Dial spring balance) is used for measuring weight of objects.

[3 marks @ 1 mark each]

(iv) **ONE PLACE THAT INSTRUMENT D IS USED.**

- Hospitals
- Laboratories
- Scientific industries
- Abattoir

[1 mark]

- (d)
- (i) **DEVICE USED IN CARRYING OUT THE MANUAL MANIPULATION** [1 mark]
 ▪ Wooden board
- (ii) **CONDITION OF THE SOIL** [3 marks]
 ▪ Moist
- (iii) **SOIL SAMPLE SHAPES A, B AND C.**
 ▪ A = loamy soil
 ▪ B = Clayey soil
 ▪ C = Sandy soil
- [3 marks@1 mark each]
- (iv) **ONE CHARACTERISTICS OF A,B AND C.**
Characteristics of A(loamy Soil)
 ▪ Loamy soil is not sticky when wet
 ▪ It does not become too hard when it is dry
 ▪ The particles are too small and not too large.
 ▪ The soil is mostly used in agriculture
 ▪ Its texture is light, that makes it easy for cultivation.
- Characteristics of A(Clayey Soil)**
 ▪ Particles of clay are very small and fine.
 ▪ Clay is slippery when wet and powdery when fine.
 ▪ Clay is mostly acidic
 ▪ Clay has very small pore spaces.
- Characteristics of A(Sandy Soil)**
 ▪ Particles of sand are large with a lot of air spaces.
 ▪ Loose and easy to dig or plough.
 ▪ Contain little humus.
 ▪ Not fertile for agriculture.

[3 marks @ 1 mark each]
 [10 marks]

QUESTION 2

- (a) (i) **DIFFERENCE BETWEEN ECOSYSTEM AND HABITAT.**

Ecosystem	Habitat
Larger	Smaller
Involve different species	Involve specific species
Larger number of species	Smaller number of species

[2 marks@1 mark each]

- (ii) **EXTERNAL FEATURES OF THE WEAVER BIRD**
 ▪ Streamlined body which reduces air resistance during flight.
 ▪ Forelimb modified into wing for flight.
 ▪ Body covered with feathers for insulation.
 ▪ Tail feathers used for steering and balancing
 ▪ Beak for feeding
 ▪ Clawed legs for feeding.

[2 marks@ 1 mark each]

- (b) (i) **EXPLANATION TO THE TERM HAZARD**

- Hazard is a danger/ risk that could result in physical harm to people or damage to property OR
 ▪ Hazard is any source of potential damage/ adverse health effect on something or someone.

[1 mark].

- (ii) **SAFETY PRECAUTIONS AGAINST HAZARDS**

- Wearing protective clothing/boot/goggles.
 ▪ Routine maintenance of equipment.

- Closing all taps before leaving the laboratory.
- Switching off all electrical points.
- Mounting hazard signs of dos and don'ts in the lab/ working areas.

[3 marks @ 1mark each]

(c)

(i) potential energy = $m \times g \times h$

Where $m = 12kg$, $g=10ms^{-2}$, $h= 20m$

Potential energy = $12 \times 10 \times 20$

= 2400J

[2 marks]

(ii) just before the body hits the ground, the potential energy is converted to kinetic energy.

∴ kinetic energy = potential energy

= 2400J

[2 marks]

(d)

VEGETATIVE PARTS AND REPRODUCTIVE PARTS OF A FLOWERING

PLANT.

- Vegetative parts of a flowering plant are **roots, stem and leaves.**
- Reproductive parts consist of **ovary, ovule, anther and stigma.**

[3 marks]

TOTAL = 15 MARKS

QUESTION 3

(a)

EXPLANATION TO TERMINOLOGIES

(i) **Pastoral farming:**

- Is where the farmer keeps only animals and moves from place to place in search Of food and water.

[2 marks @ 2 marks each]

(ii) **Ecological farming.**

- Is a type of farming system in which chemicals and machinery are not used in order to protect the environment or plant and animals.

[2 marks @ 2 marks each]

(b)

(i) **DEFINITION OF A TRANSISTOR**

- A transistor is a three terminal semi-conductor device.

[1 mark]

(iii) **USES OF A TRANSISTOR.**

- Use as an amplifier.
- Used as a switch.
- For voltage or current regulator.
- For rectification.
- For turning in radios.

[2 marks @ 1 mark each]

(c)

EXPERIMENT TO SHOW THAT THERE IS CHANGE IN HEAT ENERGY

- Take two solution or substance. Eg. H_2SO_4
- Measure the temperature of the separate solution and record.
- Pour the acid into the nitrates
- Measure the temperature as you stir gently.
- It will be observed that a new substance is formed without a change in temperature
- Therefore, it can be concluded that there is a change in heat energy when new substance is formed.

[5 marks]

(d) (i) **EXPLANATION OF RESPIRATORY ORGAN**

- A respiratory organ is an organ used by living organism for gaseous exchange.

[1 mark]

(iii) **TWO STRUCTURES OF THE RESPIRATORY SYSTEM OF HUMAN.**

- Nostril
- pharynx
- Nasal cavity
- Larynx
- Trachea
- Diaphragm
- Intercostal muscle
- Ribs.
- Bronchus.
- Lungs
- Bronchiole

[2 marks@1 mark each]

TOTAL = 15 MARKS

QUESTION 4

(a)

FOUR CULTURAL PRACTICE IS VEGETABLE CROP PRODUCTION.

- Weeding
- Mulching
- Shading
- Pricking out
- Pest control
- staking
- stirring
- supplying in
- earthing up.
- Disease control.
- Pruning
- Etc.

[4 marks @ 1 mark each]

(b) (i) **DEFINITION OF RECYCLING**

- Recycling is the production of new products from from used or waste materials
OR
Recycling is the conversion of waste materials into useful products.

[1 mark]

(ii) **TWO ADVANTAGES OF RECYCLING OF MATERIALS.**

- It reduces waste in the environment
- It conserves resources.
- It helps to generate income or employment.
- It helps in generation or conversation of energy.

[2 marks@1 marks]

(c) **DANGER INVOLVED IN EACH OF THE FOLLOWING ACTIVITIES**

(i) **eating or drinking water in the laboratory;**

- A person may drink poisonous substances.
- One may eat contaminated food.

[1 mark]

(ii) **washing hands with unknown liquid in a beaker;**

- The unknown liquids may cause burns or irritation.

[1 mark]

(iv) **Walking barefooted.**

- A person may slip easily if there is water on the floor.
- A person may get pricked with pieces of broken bottles or pins.

- One may also get burnt

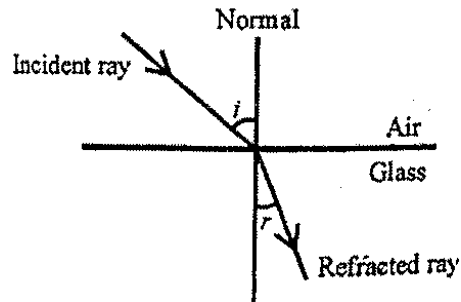
[1 mark]

(d) (i) **DEFINITION OF REFRACTION OF LIGHT**

- Refraction of light occurs when light is bent when it travels from one medium to another.

[1 mark]

(ii) **DIAGRAM TO SHOW THE PATH OF A LIGHT RAY**



[4 marks]

TOTAL = 15 MARKS

QUESTION 5

(a)

ORGANISM	ORGAN
Tilapia	Gills
Toad	Lungs, skin, mouth

[2 marks@1 mark each]

(b) (i) **STEPS USED BY SCIENTIST IN DOING THEIR WORK.**

- Identifying problem
- Hypothesis
- Collection of data
- Experimenting
- Observing
- Analyzing data
- Drawing conclusion

[2 marks@1 mark each]

(v) **SUBJECTS THAT MAY BE CONSIDERED AS APPLIED SCIENCE.**

- Engineering
- Medicine
- Observing
- Analyzing data
- Drawing conclusion

[2 marks]

(c) (i) **WHY GASES ARE MORE COMPRESSIBLE THAN SOLID.**

- The particles or molecules of gases are far apart whereas that in solid are more compact.

[4 marks]

(ii) **AREA WHERE THE COMPRESSIBLE NATURE OF A GAS IS APPLIED.**

- Pumping of lorry tyres or football.
- Putting gas in bottled minerals.
- Blowing of balloons.
- Putting gas in bottles or cylinders.

[2 marks @ 1 mark each]

(d) Potential energy → Kinetic energy → Sound energy + Heat energy. [3 marks]

TOTAL = 15 MARKS

QUESTION 6

- (a) (i) WAYS IN WHICH CROP ROTATION IS IMPORTANT IN CROP PRODUCTION.
- Used to reduce diseases
 - Used to reduce pest.
 - To control weeds.
 - To improve soil quality.
 - Checks erosions.
 - Decrease risk during bad seasons.
 - Ensures economic use of land.
- [2 marks @ 1 marks each]
- (ii) CROPS THAT ARE DEEP ROOTED.
- Watermelon
 - Cocoyam
 - Tomato
 - Carrots
 - Pumpkin.
 - Yam
 - Cassava.
- [2 marks @ 1 mark each]
- (b) (i) EXPLANATION OF FORWARD-BIAS
- Forward bias is when the positive terminal of an electric source is connected to the p-type of the diode and negative terminal of the source is connected to the n-type of the diode resulting in the flow of charges. [2 marks]
- (ii) ROLE OF A CAPACITOR IN A CIRCUIT
- Stores electric energy when they are connected to a charging circuit.
 - Used to maintain a power supply when the device is unplugged and without a battery.
 - Used to smooth current fluctuation for signal
- [2 marks @ 2 marks each]
- (c) (i) EXPLANATION OF A POLLUTANTS
- Air pollutant is a substance released into the air that can cause harm to human and the environment. [1 mark]
- (ii) TWO WAYS TO REDUCE AIR POLLUTION.
- Public education.
 - Uses of modern technology in industry
 - Enforcement of laws and regulations.
 - Better alternative sources of energy.
 - Regular maintenance of vehicles
 - Banning burning of materials.
- [2 marks@1 mark each]
- (d) (i) HOW THE FISH TAKES IN OXYGEN.
- Water enters the mouth of the fish and passes over the gills.
 - The blood in the gills absorbs the oxygen dissolved in the water.
- [2 marks]
- (ii) ONE PARTS WHICH HELP IT TO LIVE IN ITS ENVIRONMENT.
- α. bird;
- Wings
 - Feet's
 - Feathers
 - Tail
 - Beak
 - Hollow bones
 - Air sac

- β. **fish.**
- Fins
 - Gills
 - Scales
 - Swim bladder
 - Mouth
 - Tails
 - Lateral line

[2 marks @ 1 mark each]
TOTAL = 15 MARKS

TOTAL FOR PART II = 60 MARKS

THUS, TOTAL FOR PAPER 2 = (PART I + PART II) = 100 MARKS

PAPER I [40 MARKS]

GRAND TOTAL = PAPER 1 (40) + PAPER 2 (100) = 140 MARKS

OVERALL SCORE = TOTAL SCORE × 100

140