

Topic 1 MEASUREMENT

Section A

1	B	11	C
2	C	12	B
3	B	13	A
4	A	14	A
5	C	15	A
6	A	16	D
7	A	17	B
8	D	18	D
9	B	19	D
10	D	20	B

Section B

Question 1

- (i) balance
- (ii) measuring cylinder
- (iii) stopwatch
- (iv) thermometer
- (v) clinical thermometer
- (vi) measuring tape

Question 2

- a) 1500 b) 25 c) 75
- d) 750 e) 0.5 f) 0.5

Question 3

- a) 1250 b) 25 c) 0.0075
- d) 850 e) 0.65 f) 0.56

Question 4

- a) = 90 min = 5400 s
- b) = 150 min = 9000 s
- c) = 15 min = 900 s

Question 5

- a) i) heavier ii) lighter iii) lighter
- iv) heavier v) either heavier or lighter

- b) object 4

Question 6

- a) (i) 22.7 cm³ (ii) 33.6 cm³
- (iii) 44 cm³ (iv) 26 cm³

- b) eyes must be perpendicular to the scale at the point of measurement.

Question 7

- a) 2.9 cm b) vernier caliper

Question 8

- a) 30 cm³ b) balance c) 3 cm³

Question 9

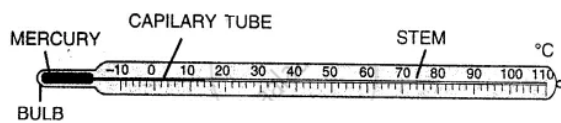
- a) distance between 2 points
- b) amount of matter in a body
- c) amount of space occupied by a body
- d) degree of hotness and coldness of a body

Question 15

- a) metre rule
- b) stopwatch
- c) 1.5 seconds

Question 10

a)



- b) mercury c) clinical thermometer
- d) 36.8 or 37 °C

Question 11

- a) 36 cm³ b) 100 cm² c) 30 cm²

Question 12

- a) 15 sq unit
- b) 10 sq unit
- c) 24 sq unit

Question 13

$A = 27 \text{ mm}^3$

$B = 100 \text{ cm}^3$

Question 14

- 1) 46.5 s 2) 6 00 h 15 s

Topic 2 CELLS AND CHARACTERISATION OF LIVING THINGS

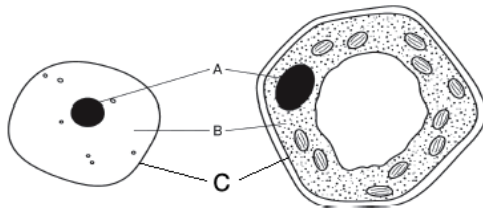
Section A

1	B	11	D
2	D	12	B
3	C	13	A
4	C	14	C
5	B	15	B
6	D		
7	C		
8	C		
9	B		
10	A		

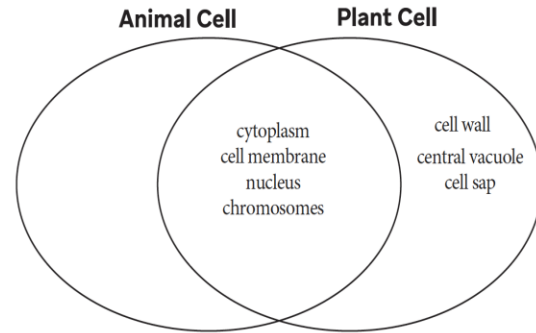
Section B

Question 1

- i) A-nucleus, B-cytoplasm
ii)



Question 2



Question 3

- i) the cell membrane controls the exchange of substances into and out of the cell.
- ii) 1. Nucleus controls all the activities of a cell.
2. It determines the characteristics of an organism.
- iii). The vacuole contains cell sap. It is a solution of water, sugar, salt and ions.
- iv). 1. xylem tissue
2. phloem tissue
3. epidermal tissue
4. mesophyll tissue

Question 4

Words filled in correct order:

Living things, unicellular, multicellular, microscope, nucleus, DNA, cytoplasm, nucleus

Question 5

Human Systems	Function
Digestive	Transmission of impulses nerve
Excretory	Transport of nutrients and oxygen
Circulatory	Breakdown of food into simple soluble products
Nervous	Production of new individuals
Reproductive	Removal of waste products

Question 9

LIVING THINGS: bird, cat, horse, cow, mosquito, butterfly, snail and grasshopper

NON-LIVING THINGS : pen, pencil, eraser, copybook, table, shoe, tea, milk, sand, soil, chair and bottle

Question 6

- a) sensitivity
- b) respiration
- c) excretion
- d) reproduction
- e) seven

Question 7

- a) TRUE
- b) FALSE
- c) TRUE
- d) TRUE

Question 8

1. For growth
2. To keep the body warm
3. For contraction of muscles

Topic 3 MATTER

Section A

1	D	11	C
2	D	12	D
3	A	13	A
4	B	14	B
5	D	15	D
6	A		
7	A		
8	C		
9	A		
10	C		

Section B

Question 1

- a) 1. Air bubbles move out of the bottle
 2. Water enters the bottle
 b) The plastic bottle contains air
 c) Air occupies space

Question 2

- 1 True 2 False 3 True
 4 False 5 True

Question 3

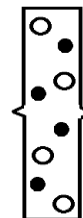
- a) spreading of particles until they are uniformly distributed
 b) Initially the crystal dissolves to form a purple coloration at the bottom of the water in the beaker. The purple colour is

seen to rise and mix with the water above. After a long time, the whole water becomes uniformly purple.

c) (i) The brown gas moves into the upper jar.

(ii) Both air and bromine are made of particles moving randomly that mix together by the process of diffusion.

(iii)



Question 4

- a) A: solid B: liquid C: gas
 b) X: condensation Y: boiling
 Z: Sublimation

c) Physical change. They are reversible changes.

d) The fixed temperature at which a solid changes to a liquid.

Question 5

- a) A. It is an irreversible change.

Physical change	Chemical change
Melting	Burning
Freezing	Respiration
Boiling	Photosynthesis

TEST PAPER 1

Section A

1	A	6	C
2	D	7	A
3	B	8	A
4	D	9	A
5	B	10	B

Section B

Question 1

- a) gas
- b) particles
- c) solids
- d) freezing
- e) mass
- f) coldness
- g) temperature
- h) cell
- i) system
- j) chloroplast

Question 2

- a (i) closely and orderly arranged
vibrate about fixed position

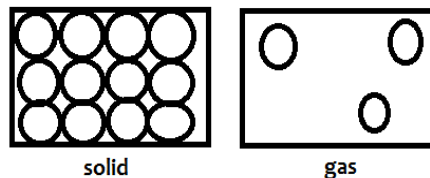
- (ii) far apart

Move freely in all directions

- b)

Solid	Liquid
Fixed shape	No fixed shape
Cannot flow	Can flow

- c)



- d) X: melting Y: boiling

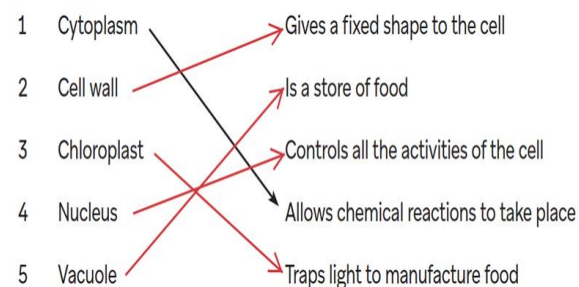
Question 3

- a) Temperature - °C area – m²
volume – m³ mass - kg
time – s

- b) i) 12.5 mm² ii) 24 cm²
c) 13 sq units
d) 22 cm³

Question 4

- a) a plant
b) it is surrounded by a cell wall or it contains chloroplast or it contains large central vacuole
c)



- ii) a) A,
b) to pump blood throughout the body
c) digestive
d) B

Topic 4 ELEMENTS, COMPOUNDS AND MIXTURES

Section A

1	D	11	B
2	C	12	B
3	B	13	A
4	A	14	A
5	D		
6	A		
7	C		
8	A		
9	D		
10	B		

Section B

Question 1

a) A substance that cannot be broken down into simpler substances.

b) A shorthand way of representing an element.

c)

Element	Symbol	Element	Symbol
	Al	Nitrogen	
Helium			Ne
	Ca	Bromine	
	H		F

d) 1) sterilize drinking water

2) for construction

3) fuel for rocket

4) to make jewels

Question 2

a) two or more elements chemically joined together

b) 1 sound, light and heat produced when compounds are formed

2 compounds have fixed composition

3 compounds cannot be separated by physical methods

c) New substance is formed.

Question 3

a) two or more substance not chemically joined together

b) differences

Compounds	Mixtures
Sound, light and heat produce	No light, sound and heat produced
Fixed composition	No fixed composition
Cannot be separated by physical methods	Can be separated by physical methods

Question 4

a) 1 sonorous

2 malleable

3 ductile

4 shiny

b) 1 dull

2 brittle

3 poor conductors of heat/electricity

Question 5

a) (i) Q, T

(ii) P,R,S

b) (i) group 2

(ii) Group 6

Topic 5 SOLAR SYSTEM AND ENERGY

Section A

1	A	11	D
2	C	12	A
3	D	13	B
4	D	14	C
5	B	15	A
6	C		
7	A		
8	D		
9	C		
10	B		

Section B

Question 1

- a) A celestial body that moves around a planet.
- b) A celestial body that moves around a star.
- c) A celestial body made of dust and ice that has a bright tail when it moves
- d) Rocks that move around the sun.

Question 2

Earth	Has life on it
Mars	Called red planet
Jupiter	Largest planet in our solar system
Saturn	Contain spectacular rings
Neptune	Is furthest planet from the sun
Mercury	Closest to sun

Venus	Hottest planet in our solar system
Pluto	Is a dwarf planet

Question 3

- a) Energy is the capacity to do work.
- b) Sun, wind, tidal, falling water

Question 4

Ques	True/false	Ques	True/false
a	false	e	true
b	true	f	true
c	true	g	true
d	true	h	true

Question 5

- a) capacity
- b) sun
- c) solar
- d) photosynthesis
- e) wind
- f) electrical /water
- g) fusion
- h) fission

Question 6

- (a) electrical energy  sound + light+ heat energy
- (b) chemical energy  electrical energy  light energy
- (c) chemical energy  light + heat energy
- (d) chemical energy  elastic potential energy

Topic 6 ECOSYSTEM

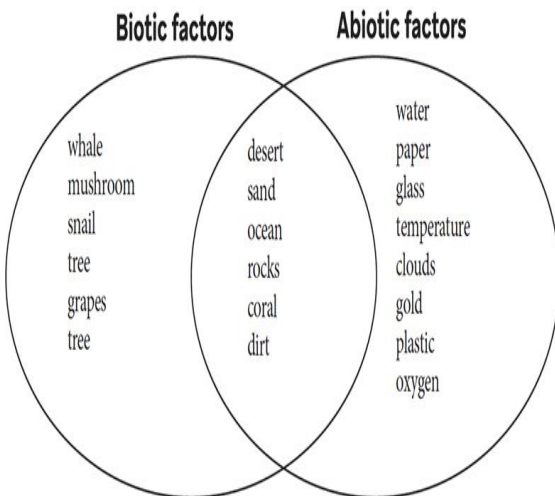
Section A

1	B	11	D
2	C	12	D
3	D	13	
4	C	14	
5	C	15	
6	D		
7	C		
8	C		
9	C		
10	C		

Section B

Question 1

- i) the living part of an ecosystem is known as **biotic factor**.
- ii) the non-living part of an ecosystem is known as **abiotic factor**.
- iii).



Question 2

- i) algae
- ii) mosquito

iii) frog, lizard

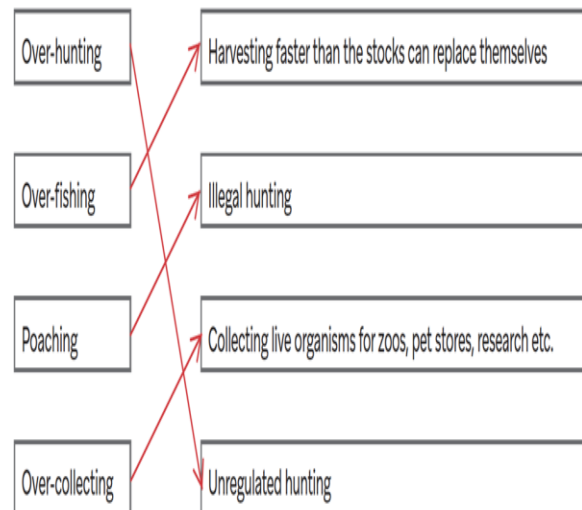
iv) it is lost to the atmosphere as heat energy.

Question 3

- i) the forest density decreases as human population increases.
- ii) 1. For clearing land for agriculture
2. For construction of houses and buildings
3. To get wood for burning and to make furniture
- iii) flooding, climate change, desert, loss of habitat resulting in decrease in animal and plant species.

Question 4

- i) water pollution
- ii) they will be affected. They will suffocate and die.
- iii)



- iv) 1. Enforce regulations so that population will abide.
2. Fine people who do not abide to the rules.

3. Educate people so that they become aware of the need to keep the environment clean.

Question 5

Words in order:

Biotic, abiotic, sun, chemical, produces, carnivores, heat

Question 6

Cyclones, volcanoes, earthquakes

TEST PAPER 2

Section A

1	A	6	D
2	B	7	D
3	D	8	C
4	A	9	B
5	A	10	B

Section B

Question 1

- a) true
- b) false
- c) true
- d) true
- e) false
- f) true
- g) true
- h) false
- i) false
- j) true

Question 2

- a) Sun → grass → grasshopper → Shrew → Hawk
- b) Grass
- c) Grasshopper, shrew, hawk **any two**
- d) The shrews will decrease in number as they will get less food.
- (2) a) herbivore
- b) omnivore
- c) eel, shark

Question 3

- a) i) a pure substance that cannot be broken down into simpler substances
- ii) 2 or more elements chemically joined together

iii) shorthand way of representing an element

b)

	Al	Metal
Carbon		Non metal
	O	Non metal

c) elements – mercury, nitrogen

compounds – carbon dioxide, water

d) 1 fixed composition

2 cannot be separated by physical methods

Question 4

- a) i) sun
- ii) milky way
- iii) asteroids, comet
- iv) saturn
- v) Uranus and Neptune
- b) Sun and wind

c)

elastic potential energy of the bow → kinetic energy of arrow

chemical energy stored in body → Kinetic energy of ball

Topic 7 AIR

Section A

1	C	11	C
2	B	12	B
3	C	13	C
4	A	14	C
5	D	15	A
6	C		
7	A		
8	D		
9	A		
10	D		

Section B

Question 1

a)

Gas	Percentage
	79
Oxygen	
	0.03
Noble gases	
Water vapour	

b) (i) nitrogen, oxygen, noble gases

(ii) carbon dioxide, water vapour

Question 2

a) The oxygen in the jar is used up.

b) The level of water inside the jar rises to replace the oxygen used in burning.

Question 3

a) relights a glowing splinter

b) welding, breathing in hospitals, fuel for rockets

c) (i)

hydrogen peroxide $\Rightarrow$ water + oxygen

(ii) water

(iii) manganese (IV) oxide

(iv) speeds up a reaction but it remains chemically unchanged.

Question 4

a) turns limewater milky

b) fizzy drinks, fire extinguisher, dry ice

c) Hydrochloric acid and calcium carbonate

d) Carbon dioxide is produced during respiration and absorbed in photosynthesis. Thus the two processes play an important role in the composition of carbon dioxide in the atmosphere.

e) deforestation increases amount of carbon dioxide

Question 5

a) water sources not the same throughout the planet

b) i) Water vapour condenses on the outer surface

ii) blue cobalt (II) chloride paper turns pink

Topic 8 BIODIVERSITY

Section A

1	C	11	C
2	B	12	B
3	B	13	C
4	D	14	C
5	C	15	B
6	D		
7	C		
8	A		
9	D		
10	B		

Section B

Question 1

Class of vertebrate	Description
Bird	body with naked skin, two pairs of limbs
Fish	body with hair, two pairs of limbs
Mammal	body with feathers, one pair of wings
Reptile	body with scales, with fins
	body with scaly skin, two pairs of limbs or no limbs

Question 2

- a) fish or reptile
b) mammal, bird

Question 3

3.

Flowering plants		Non-flowering plants	
Name of plant	Group	Name of plant	Group
avocado, mango, litchi	dicot plant	dryopteris	fern
maize, rice, sugarcane	monocot	pine, filao	conifers
rose, orchids	dicot	club moss	moss
		cycad	conifer

Question 4

4. a. amphibian
b. I have hairs on my skin. I give birth to live youngs.
c. bird
d. reptiles
e. I live in water. I have scales and fins. I lay eggs.

Question 5

2(a) D

(b) A

3 (a) E

4 (a) C

(b) B

Question 6

6. a). fish - vertebrate
Spider - invertebrate
Turtle - vertebrate

Octopus -	invertebrate
Deer -	vertebrate
Snail -	invertebrate
Beetle -	invertebrate

b) deer, rabbit

c) octopus

Question 7

a). vertebrate

b). bird

c). octopus

d). i) both give birth to live young

ii) both have hairs on their skin

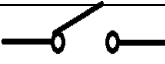
Topic 9 ELECTRICITY

Section A

1	A	11	A
2	C	12	C
3	B	13	D
4	D	14	B
5	B	15	A
6	C		
7	S		
8	D		
9	A		
10	D		

Section B

Question 1

		Connects all components in a circuit
cell		
		Open and close a circuit
bulb		Converts electrical to light energy

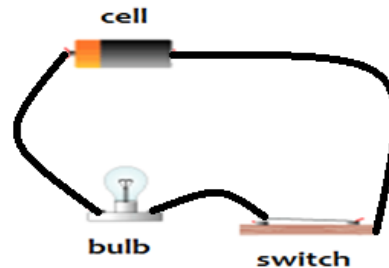
Question 2

- a) false e) false
b) true f) true
c) false g) true
d) false

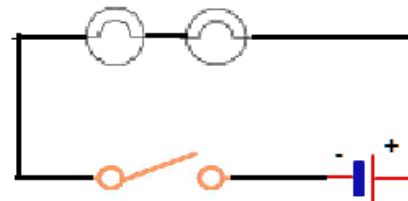
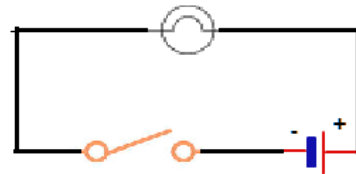
Question 3

- a) 1. Cell 2. Switch 3. Bulb

b)



Question 4



Question 5

- a) the bulb will light

b)

Conductor	Insulator
Iron screw	Wooden stick
Copper coin	Plastic spoon
Steel fork	

TEST PAPER 3

Section A

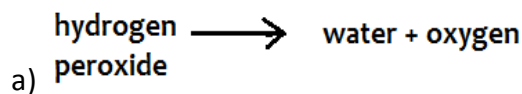
1	B	6	D
2	D	7	C
3	C	8	C
4	A	9	C
5	A	10	B

Section B

Question 1

- a) decomposition, catalysed
- b) fizzy drinks or fire extinguisher or dry ice
- c) carbon dioxide
- d) closed
- e) cell
- f) conductor
- g) dicot
- h) vertebrate
- i) cockroach

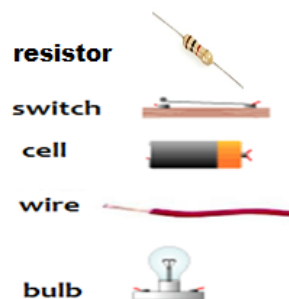
Question 2



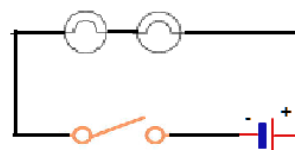
- a)
- b) relights a glowing splinter
- c) 1 Breathing 2 welding
- d) 1 colourless/odourless/tasteless
- 2 turns lime water milky
- e)helium - in balloons
- argon - in bulbs

Question 3

a)



b)



c) X: wire does not touch the bulb

Y: both wires from cell are connected at the same end of the bulb

Question 4

- a) 1 insect
2 slug
 - b) Rabbit, slug, insect
 - c) Frog
 - d) Group : mammal
- Characteristic: they have hairs on their skin and give birth to live youngs.
- e) Grass $\rightarrow$ insect $\rightarrow$ mouse $\rightarrow$ owl or
grass $\rightarrow$ insect $\rightarrow$ thrush $\rightarrow$ owl or
grass $\rightarrow$ insect $\rightarrow$ frog $\rightarrow$ owl
 - f) Slug or insect
 - g) It body is covered with feathers. It lays eggs.

SPECIMEN PAPER 1

Section A

1	A	6	C
2	D	7	A
3	A	8	B
4	D	9	D
5	D	10	A

Section B

Question 1

- | | |
|-----------------------|--------------|
| a) mercury or bromine | f) quadrat |
| b) oxygen | g) silver |
| c) series | h) excretion |
| d) converted | i) ability |
| e) condenses | j) hunting |

Question 2

- a) iron – a metallic element
 argon – is used in bulb
 air – is a mixture of gases
 oxygen – relights a glowing splinter
- b i) move in all directions
 particles are far apart
- ii) 1 carbon 2 oxygen
- iii) turns limewater milky
- iv) in fire extinguisher

Question 3

a) cell – is a source of energy in electrical circuit

mass- is measured in kg

sun – is the star of our solar system

heat energy – is possessed by hot objects

b)

Cell	
Switch	
Bulb	
Resistor	

c)

chemical energy $\Rightarrow$ **electrical energy** $\Rightarrow$ **light energy**

Question 4

- (a) Deforestation is the act of cutting down trees in a forest.
- (b) 1 for making furniture
 2 for agriculture
 3 for construction of infrastructure
- (c) Flood, desert, climate change, habitat loss
- (d) 1 Throwing of garbage on land
 2 releasing toxic gases in the air by burning fossil fuels
- (e) (i) marine life is affected, fish die
 (ii) lung diseases occur in people
 (iii) plants suffer and die

SPECIMEN PAPER 2

Section A

1	B	6	A
2	B	7	A
3	B	8	A
4	C	9	B
5	B	10	A

Section B

Question 1

- a) false f) true
 b) true g) false
 c) false h) false
 d) true i) true
 e) false j) false

Question 2

a)

	Mg	Metal
Oxygen		Non metal
Iron		Metal
	S	Non metal

b i) iron is shiny grey metal

sulfur is yellow powder

(ii) compound

iii) no attraction

iv) chemical change. A new substance is formed.

Question 3

a) 1 thermometer 2 mercury

3 Uranus 4 energy

b) energy can neither be created nor destroyed but can be converted into other forms

c)

(i) **gravitational potential energy**  **kinetic energy**

(ii) **chemical energy**  **heat + light energy**

d) a source that will not run out

e) renewable – sun, falling water

non renewable – coal, petrol

Question 4

Irregular

Cytoplasm

Chromosomes

Characteristics

Cell membrane

Amoeba

Multicellular

Chloroplast

Cell wall

Regular