

SUBJECT : INTEGRATED SCIENCE

Time : 2½ Hrs.

M.M.: 80

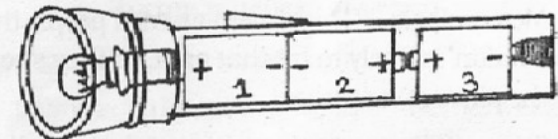
General Instructions :

- (i) This paper consists of three sections A, B and C.
- (ii) Marks are indicated against each question.
- (iii) Draw neat and well labelled diagrams wherever required.

PART-A (PHYSICS)

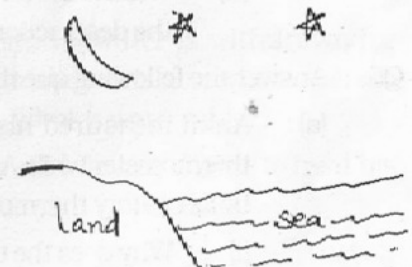
Q1. Answer the following in one sentence each : (1x4=4)

- (a) The bulb in the torch shown in the figure does not glow. Identify the problem.



- (b) Kanika purchased a cooking utensil painted black at the bottom for faster cooking. Justify the reason for her choice.

- (c) Label the direction of movement of cold air and hot air in the following diagram of land breeze.



- (d) A tall building caught fire due to short circuit. What causes short circuit?

Q2. Fill in the blanks : (1x4=4)

- (a) Elements used in electric heater should have _____ melting point.
- (b) Monsoon winds flow because of uneven heating of _____ and _____.
- (c) _____ is the fastest mode of heat transfer.
- (d) _____ ensures that an appliance is safe and wastage of energy is minimum.

Q3. Give a technical term for the following : (1x2=2)

- (a) The process of seeping water by its downward movement in soil. It helps to recharge the groundwater.
- (b) A reaction in which an acid reacts with a base to form salt and water.

Q4. Answer briefly : (2x3=6)

- (a) Ambika was classifying different household items of daily use as acidic, basic and neutral substances. In which category did she place the following :

- (i) common salt (iii) vinegar
- (ii) detergent (iv) toothpaste

- (b) Ram and Raheem are best friends. Raheem goes to Ram's house to celebrate Diwali. Both are bursting crackers. Suddenly, a spark falls on Raheem's arm. Ram immediately washes Raheem's hand and applies a cream for burns.

- (i) Which type of change is bursting of crackers? Do you think bursting of crackers is good for our environment? Comment.

- (ii) Mention the values which have been shown by Ram.

- (c) Water is one of the most common and useful substance for the existence of life. But very small fraction of the total water present on the Earth is available for our use. List any four causes for the shortage of water in many parts of the world.

Q5. Answer the following : (3x2=6)

- (a) A white shirt has a yellow stain of curry. When soap is rubbed on this shirt during washing, the yellow stain turns red.

- (i) Name the natural indicator present in curry stain.

- (ii) What is the nature of soap as shown by the indicator present in curry stain?

- (iii) Suggest a home remedy to remove the yellow stain of curry on white shirt.

- (b) When magnesium is burned in air, a powdery ash 'X' is formed. 'X' on dissolving in water forms 'Y'.

- (i) What are 'X' and 'Y'?

- (ii) Write the action of 'Y' on litmus paper.

- (iii) What is the common name of the indigestion-relieving medicine which contains 'Y'?

Q6. When an object 'P' is kept immersed in the blue coloured solution 'Q', a chemical change takes place to form a green coloured solution 'R' and a brown layer of substance 'S' is deposited on the object. 'P' is used for making nails and 'S' is used for making electrical wires. (5x1=5)

- (a) Identify 'P' and 'S'.

- (b) Name the blue coloured solution 'Q'.

- (c) Name the green coloured solution 'R'.

- (d) Write the word equation for the above mentioned change.

PART-C (BIOLOGY)

Q1. Answer in one word or one sentence : (1x4=4)

- (a) 'X' is an instrument used by a doctor to amplify the sound of heartbeat. Identify 'X'.

- (b) Soil is one of the most important natural resources. Define the process by which soil is formed.

- (c) Flowers are the reproductive parts of a plant, why are flowers generally so colourful and fragrant?

- (d) A throbbing movement is felt on the inner side of the wrist due to the flow of the blood in the arteries. What is this throbbing known as?

Q2. Fill in the blanks : (1x3=3)

- (a) The removal of topsoil by either strong wind, flowing river water or rain is called _____.

- (b) Transfer of pollen from anther to the stigma of the same flower or of some other plant of the same species is known as _____.

- (c) Aquatic animals like fishes, excrete cell waste as _____ which directly dissolves in water.

Q3. Give one technical term for the following: (1x2=2)

- A vertical section through the soil showing the different layers of soil.
- The process of filtering blood and the removal of wastes by artificial kidney or machine.

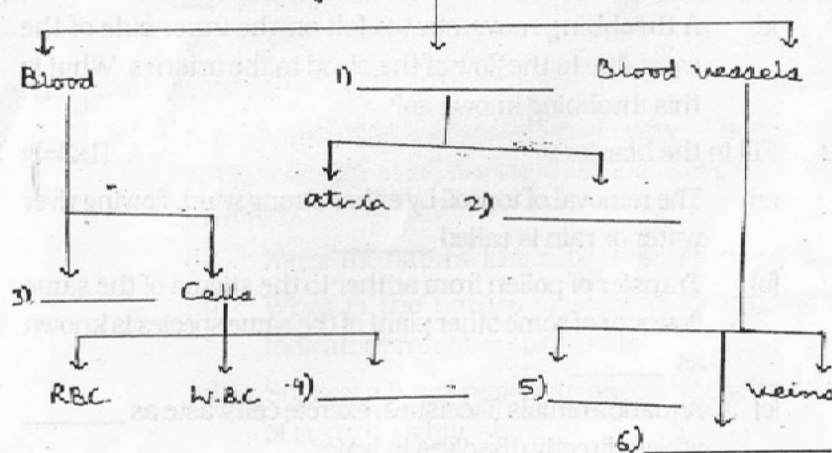
Q4. Answer briefly: (2x3=6)

- (a) A student conducted an experiment to determine the percolation rate of water in a soil. He observed that it took 45 minutes for 180 ml of water to percolate through the soil. Calculate the percolation rate of water in soil.
- (b) Arteries normally carry oxygen rich blood whereas veins carry carbon dioxide rich blood.
- (i) Name one artery which carries deoxygenated blood and a vein which carries oxygenated blood.
- (ii) Thin walled blood vessels called veins are characterised by the presence of valves. Why do veins have valves?
- (c) Name the process which can pull the water to great heights in the tall trees. Write any two advantages of this process in the plants.

Q5. Answer in detail : (3x2=6)

- (a) Complete the following chart:

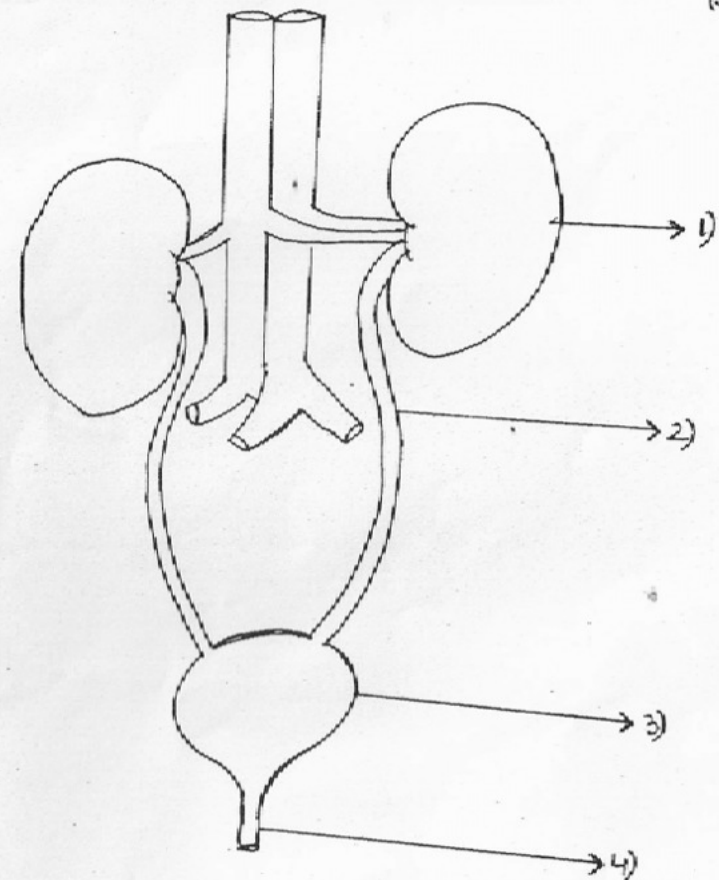
Circulatory System In Humans



(6)

- (b) (i) Write the various ways by which the seeds/fruits of the following plants are dispersed :
castor, drumstick, urena, coconut
- (ii) Mention any two benefits of seed dispersal in plants.

Q6. Observe the given diagram, and answer the following questions :
(5x1=5)



- The above figure represents _____.
- Label the parts (1), (2), (3) and (4).
- State the function of part (1)
- Name the waste product stored in part (3). Write its composition also.

[7]