SA-II 2/2015

SUBJECT : INTEGRATED SCIENCE

CLASS : VII

Time : 2½ Hrs. **M.M.: 80**

General Instructions :

(i) This paper consists of three sections A, B and C.

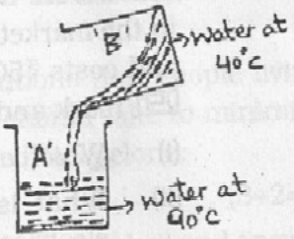
(ii) Marks are indicated against each question.

(iii) Draw neat and well labelled diagrams wherever required.

PART-A (PHYSICS)

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

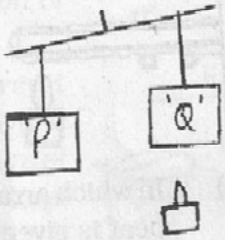
(a) Observe the given picture carefully. What would be the resulting temperature of water in container 'A'? Give reason.



(b) "For a better tomorrow save energy today." Which lightning device would you prefer to save energy – Compact Fluorescent Lamps (CFLs) or electric bulbs? Justify your preference.

(c) Identify and define the type of breeze shown in the given figure.

(d) In the given figure, two paper bags 'P' and 'Q' are tied to a balance. A candle is lighted under bag 'Q'. Why does bag 'Q' rise up?



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

(a) It is difficult to ride a bicycle against the direction of wind because air exerts _____.

(b) Normal human body temperature is _____ °C.

(c) In hot climate areas, houses are painted white as white colour is a good _____ of heat.

(d) Air moves from a region of _____ pressure to the region of _____ pressure.

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

(a) Fastest mode of heat transfer.

(b) A storm which is accompanied by lightning followed by loud sound from the clouds.

Q4. Answer briefly: (2x3=6)

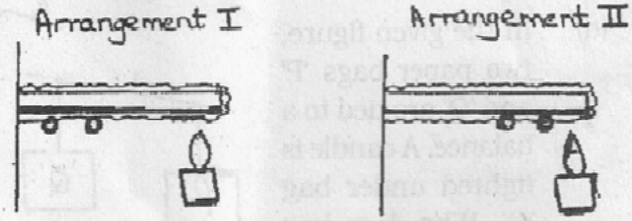
(a) Aayan went to market to purchase an electric kettle. There were two electric kettles 'X' and 'Y' available in the market. Electric kettle 'X' has ISI mark on it and costs ₹500, while electric kettle 'Y' is without ISI mark and costs ₹400.

(i) Which electric kettle should Aayan purchase?

(ii) What is the significance of ISI mark on electrical appliances?

(b) Ashu observed that a fuse is actually a wire insulated by plastic. One day when due to overloading wire of fuse burnt, she replaced it by a nichrome wire. Is it safe? Why or why not?

(c) Observe the given two arrangements in which identical iron nails are placed on identical iron rods using same amount of wax.



(i) In which arrangement pins will fall first, if same heat is given to both the rods?

(ii) Name the process of heat transfer in the given arrangements.

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

(a) Kanika measured temperature of boiling water using thermometer 'T'. She observed that water boils at 100°C.

(i) Which type of thermometer did Kanika use?

(ii) Write any two precautions that should be taken while using thermometer 'T'.

(b) In October 2014, a cyclone named 'Hudhud' caused extensive damage and loss of life and property in eastern coast of India.

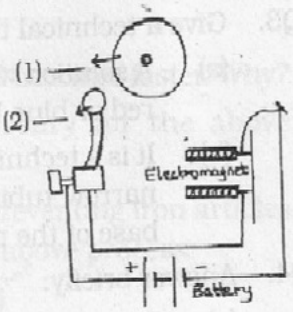
(i) What is a cyclone?

(ii) Name the calm area in the centre of the cyclone.

(iii) Write any two precautions that people living near coastal regions should take to minimise the destruction caused by cyclone.

Q6. Answer the following: (3+2=5)

(a) Look at the given figure of an electric bell and answer the following questions:

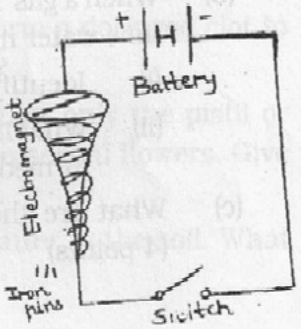


(i) Label (1) and (2).

(ii) How is sound produced in the given circuit, when current is turned 'ON'?

(iii) Name the effect of electric current used in the construction of an electric bell.

(b) Observe the given circuit diagram of an electromagnet. Will the electromagnet attract the iron pins kept near to it, when the switch is turned 'ON'? Give reason for your answer.



PART-B (CHEMISTRY)

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

(a) Which acid is present in an ant's sting?

(b) Ships suffer a lot of damage from rusting inspite of being painted. Why?

(c) 'N' is a process by which groundwater gets recharged. Identify 'N'.

(d) A substance 'M' is used to make soap. It turns red litmus blue. Identify the substance 'M'.

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

(a) _____ is added to the soil when it is basic in nature.

(b) At places ground water is stored between layers of hard rock below the water table. This is known as an _____.

(c) Milk of magnesia contains _____.

(d) Excessive rains cause floods, whereas the absence of rains results in _____.

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

(a) A solution which does not change the colour of either red or blue litmus.

(b) It is a technique of watering plants by making use of narrow tubings which deliver water directly at the base of the plant.

Q4. Answer briefly: (2x3=6)

(a) Explain why an antacid tablet is taken when we suffer from acidity?

(b) When a gas 'M' is passed through lime water, it turns lime water milky.

(i) Identify the gas 'M'.

(ii) What is the chemical name of milky substance formed?

(c) What are the causes of depletion of water table? (4 points)

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

(a) The reaction between an acid and a base is known as neutralisation. Salt and water are produced in this process with the evolution of heat.

(i) State the role of heat produced.

(ii) Name the different types of salts formed in neutralisation reactions.

(iii) Complete the word equation:

Hydrochloric acid + Sodium hydroxide → _____ + Water + Heat

(b) (i) What do you mean by crystallisation?

(ii) Is it a physical change or a chemical change? Justify.

(iii) Give one example of such a change.

Q6. Answer the following: (5)

'X' is a process that affects iron articles and slowly destroys them.

(a) Identify the process 'X'.

(b) In coastal areas, the process 'X' becomes faster. Why?

(c) Enlist the conditions necessary for the above mentioned process.

(d) Name two methods used for preventing iron articles from getting damaged by the above process.

PART-C (BIOLOGY)

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

(a) What makes the blood look red?

(b) Name the blood cells which form a dark red clot to plug the cut at time of injury?

(c) The flowers which contain either only the pistil or only the stamens are called unisexual flowers. Give two examples of such flowers.

(d) Humus is the rotting dead matter in the soil. What is its role?

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

(a) _____ is a ripened ovary.

(b) The mixture of rock particles and humus is called the _____.

(c) The process in which blood is passed through an artificial kidney to remove waste products is _____.

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

(a) The transfer of pollen grains from the anther to the stigma of a flower.

(b) The vascular tissue for the transport of food to the various parts of the plant.

Q4. Answer briefly: (2x3=6)

(a) (i) What do you mean by soil erosion?

(ii) Erosion of soil is more severe in areas of little or no surface vegetation. Justify.

(b) (i) The way in which excretory products are removed from the body of the animal depends on the availability of water. Mention the excretory products of following animals:

Animal	Excretory product
Lizard	_____
Fishes	_____
Human beings	_____

(ii) Name the organ which filters out waste from the human blood.

(c) Riya's brother was feeling hungry after playing. He asked her for a sandwich. She noticed greenish-black patches on the slices of bread. So, she gave fruits instead.

(i) What were these greenish-black patches found on the bread slices?

(ii) What value was shown by Riya?

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

(a) (i) 200ml of water takes 40 minutes to percolate completely in a particular soil. Calculate the percolation rate of water in this soil.

(ii) Soil A has a high percolation rate of water whereas soil B has a low percolation rate of water. Which of the two soils A or B is more suitable for growing paddy (rice crop) and why?

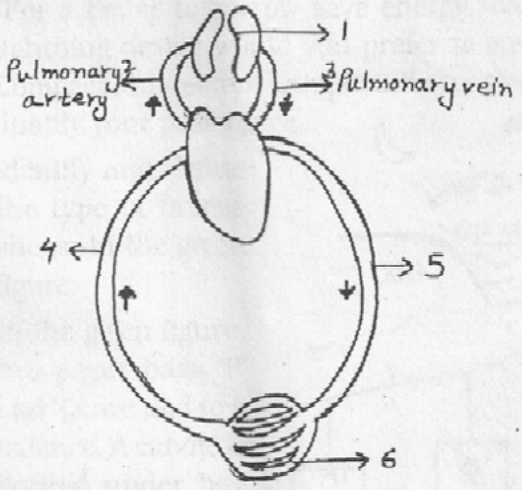
(b) (i) Dispersal of seeds and fruits is essential for plants. Justify. (2 points)

(ii) Give one example each of seed/fruit dispersed by water and wind.

(iii) Write any one special feature of the seed or fruit which is dispersed by water.

Q5. Answer the following: (5)

The figure given below shows a simplified schematic diagram of circulation of blood. Observe the figure carefully, and answer the following questions :



(a) Label the parts 1, 4, 5 and 6.

(c) Artery always carry oxygen rich blood but pulmonary arteries carry carbondioxide rich blood. Why are pulmonary arteries called arteries not veins?

(d) Define '4' and '6'.