SA-I (CLASS-VIII) 9/2014

SUBJECT : INTEGRATED SCIENCE

Time : 2½ hours MM : 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.

SECTION-A (PHYSICS)

Q1. Answer in one word or one sentence : (1x5=5)

(a) An earthquake measures 3 on Richter scale :

(i) Would it be recorded by a seismograph?

(ii) Is it likely to cause much damage? Why?

(b) What do you observe when two different poles of a magnet are brought near each other? Is it a push or a pull?

(c) A hot piece of iron is hammered by a blacksmith. How does the force due to hammering affect it?

(d) Your parents are going to buy a house. They have been offered one house on the main road and another house three lanes away from the main road. Which house would you suggest your parents should buy? Give reason.

(e) What conclusion do you draw from the observation that a fountain of water is created at the leaking joint of pipes of the main water supply line?

Q2. Answer briefly : (2x4=8)

(a) Look at the picture and answer the following questions :

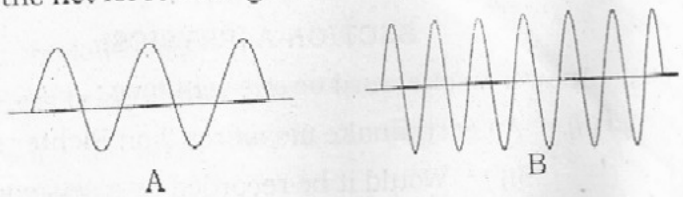
(i) Which type of force is being used in this picture?

(ii) When the boy pushes the ring, why does the speed of ring increase?

(b) With the help of a well labelled diagram show the transfer of charges using an electroscope.

(c) Two forces of 16N and 20N are acting on an object in the east direction whereas a force of 10N is acting on the same object but in the west direction. Find the net force acting on the object.

(d)



A B

(i) Which of the two sound waves shown above would be shriller and why?

(ii) The roar of a lion is very loud while the sound of a bird is quite feeble. Give reason.

Q3. Answer the following : (3x3=9)

(a) Why are our bodies not crushed by the large pressure exerted by the atmosphere? Show the existence of atmospheric pressure with the help of an activity.

(b) Name the device which is used to protect tall buildings from lightning. Suggest any two measures to protect ourselves from lightning.

(c) The sound from an insect is produced when it vibrates its wings at an average rate of 1000 vibrations per second.

(i) What is the frequency of the vibrations?

(ii) What is the time period of the vibrations?

(iii) Can we hear this sound? Why or why not?

Q4. Answer in detail : (5x1=5)

(a) Reena was walking on sand wearing pointed heels. Will she be able to walk comfortably? Why or why not?

(b) Arrange the three types of friction in the increasing order of magnitude.

(c) What are lubricants? Give any two examples.

SECTION-B (CHEMISTRY)

Q1. Answer in one word or one sentence : (1x5=5)

(a) The manufacture of which of the following fibres contributes to deforestation. Give reason.

Nylon, Polyester, Rayon, Terylene.

(b) Complete the given word equation :

_____ + water + carbondioxide + oxygen ⟶ copper hydroxide + _____

(c) Complete the given analogy :

Iodine : antiseptic solution :: _____ : fertilisers :: chlorine : _____

(d) Identify the elements that are stored in kerosene from the ones given below :

Magnesium, Potassium, Sodium, Carbon, Copper

(e) Plastics are the materials of choice but one property of plastics makes them an environmental hazard. Name the property.

Q2. Answer briefly : (2x4=8)

(a) Name any one non-metal present in the following acids : Nitric, acid, Hydrochloric acid.

What is the nature of oxides of non-metals?

(b) Give reason :

(i) Sulphur cannot be used to make pipes and wires.

(ii) Silver is used for making foil for decorating sweets.

(c) In the evening, Sonu plays guitar for the poor children of his colony. They all enjoy listening to guitar. Sonu

even teaches some of them how to play guitar free of cost.

(i) Why are the strings of guitar made up of a metal?

(ii) State one value shown by Sonu.

(d) Classify the following as biodegradable and non-biodegradable :

PET bottles, leather belts, coke cans, match sticks.

Q3. Answer the following : (3x3=9)

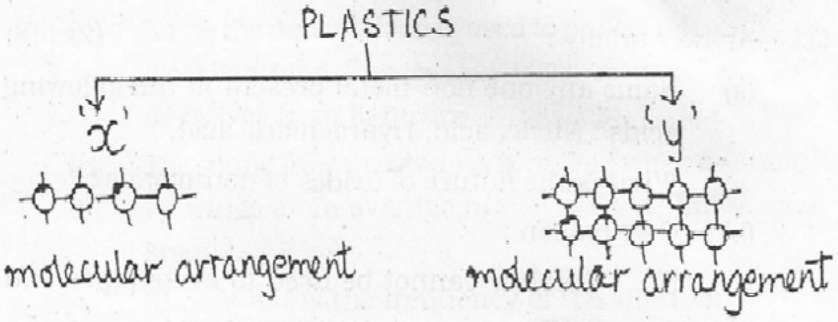
(a) Name one metal which will fit each of the following descriptions. Choose a different metal each time.

(i) A metal which is galvanised using zinc and is an important constituent of haemoglobin.

(ii) A metal that burns in oxygen with a dazzling white flame and is a part of chlorophyll molecule.

(iii) Write the word equations to show the reaction of the two metals named in (i) and (ii) with oxygen.

(b) Study the flowchart and answer the questions.



(i) Identify '*x*' and '*y*'.

(ii) Give one example of plastics of type '*x*' and one example of plastics of type '*y*'.

(iii) State one use of each example.

(c) Given below are the labels on T-shirts in a popular shop. Observe these labels and answer the questions that follow.

(i) Ridhaan is going to Jaipur for his summer vacations. Which T-shirt A, B or C do you think he should take? Give reason.

(ii) Name the blended fabric of which T-shirt 'C' is made up of.

(iii) Write any two uses of polyester fibres.

(5)

Q4. Answer the following :

Reehan performed the following chemical reactions in the laboratory to show displacement reaction.

Reaction 'X' : $FeSO_4 + Cu \longrightarrow$

Reaction 'Y' : $ZnSO_4 + Fe \longrightarrow$

Reaction 'Z' : $CuSO_4 + Zn \longrightarrow$

(a) Which of the above reactions do you think will not take place? Justify.

(b) Write the products formed in the reaction that shows displacement.

(c) Define displacement reaction.

(d) Arrange the metals Fe, Zn and Cu in order of their increasing reactivity.

SECTION-C (BIOLOGY)

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

(a) Certain species of plants and animals are found exclusively in a particular area. Give a term for these species.

(b) Organisms are classified on the basis of their nuclear organisation into two types 'A' and 'B'. Name the types 'A' and 'B'.

(c) Complete the given analogy :

Louis Pasteur : Pasteurisation :: _____ : Cell :: Alexander Fleming : _____

(d) Chromosomes are thread like structures found in the nucleus of a cell. Write the function of chromosomes.

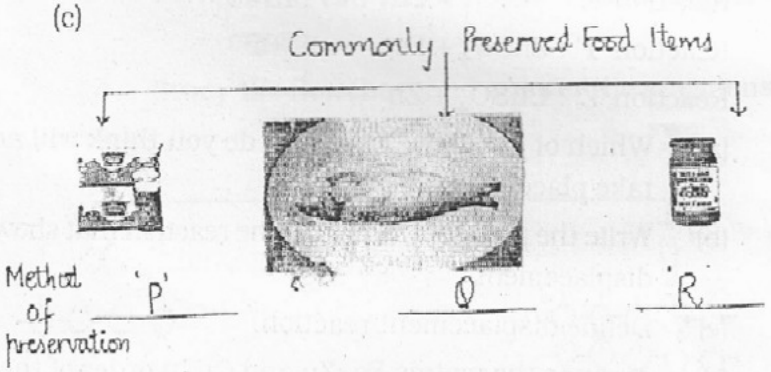
Q2. Answer briefly : (2x4=8)

(a) Large scale deforestation leads to increase in the amount of gas 'X' in the atmosphere. The increased amount of 'X' leads to excessive heating of earth causing an undesirable phenomenon 'Y'. Identify 'X' and 'Y'. How does deforestation lead to floods?

(b) Classify the following as bacterial, viral, protozoan and fungal diseases :

Rust of wheat, malaria, typhoid, chickenpox.

(c)



Identify the methods of preservation 'P', 'Q' and 'R' and state the principle on which method 'P' is based.

(d) Protected areas are important to conserve biodiversity. Name the three categories of protected areas and define any one of them.

Q3. Answer the following : (3x3=9)

(a) Microbes have become an indispensable part of medical science especially in the production of antibiotics and vaccines.

(i) What are antibiotics? Name the first antibiotic discovered.

(ii) Fill in the blanks :

Vaccine when administered into a healthy body stimulates the _____ to produce suitable _____ which remain in the body and provide protection against the disease causing microbe for the _____.

(b) Nyasa's teacher gave her the following information and asked her to answer the given questions.

S.No.	Cell	Characteristic feature
1	A	pseudopodia
2	B	longest cell of the human body
3	C	spindle shape
4	D	contains haemoglobin

(i) Identify the unicellular organism from the cells A, B, C and D.

(ii) State the function of cell 'B' in the human body.

(iii) Draw the diagram of cell 'C'

(iv) Write the significance of haemoglobin in cell 'D'.

(c) Though nitrogen is required by all living organisms still the amount of nitrogen in the atmosphere remains constant. This is possible due to the Nitrogen-cycle present in the environment. Rearrange the given steps of Nitrogen-cycle in the correct sequence.

(i) Conversion of nitrogenous wastes into nitrogenous compounds by microbes.

(ii) Synthesis of plant proteins.

(iii) Bacteria convert nitrogenous compounds into gaseous nitrogen.

(iv) Uptake of nitrogenous compounds from soil by plants.

(v) Nitrogen fixation.

Q4. Answer the following : (5)

Neha loves to eat pizza, burger and cakes.

(a) Name the fungi used in the preparation of these dishes.

(b) Explain the role of this fungus in making bread.

(c) The fungus used in making bread also has a large scale commercial use in the alcohol industry. The equation given below represents the process 'M' used in the production of wine, beer etc.

$$\text{Natural sugars} \xrightarrow[\text{in the absence of } O_2]{\text{fungus}} \text{'N'} + \text{Carbondioxide}$$

Name and define the process 'M' and identify the product 'N'.

(d) Name any two sources of natural sugars used in the alcohol industry.