FATHER AGNEL. Chitrangda Kharbanda

SUMMATIVE ASSESSMENT – I, 2015

SCIENCE : Class – IX

Time Allowed : 3 hours **Maximum Marks : 90**

General Instructions :

(i) The question paper comprises of **three Sections, A, B and C.**

(ii) **All** questions are **compulsory.**

(iii) There is no choice in any of the questions.

(iv) **All** questions of **Section-A,Section-B and Section-C** are to be attempted in separate answer sheets.

SECTION-A Physics

1 A body is moving with a velocity of 15 m/s. If the motion is uniform, what will be its velocity after 10 s ? 1

2 Mass of an object is 5 gms on the moon. What will be its weight on earth ? ($g=10ms^{-2}$). 1

3 A man pushes a box of mass 50 kg with a force of 80 N. What will be the acceleration of the box ? What would be the acceleration if the mass is halved? 2

4 On a position-time graph, draw three lines/curves to represent the motion of an object : 3

(a) Remaining at rest.

(b) Moving slow.

(c) Moving fast.

5 For each of the following questions decide whether the statement is referring to distance or displacement. Explain your answer. 3

(a) How far is your house from school by car ?

(b) How far it is from Mumbai to Goa by airplane ?

(c) The length of the Jhelum river.

6 Find what happens to the gravitational force between two objects when : 3

(i) Distance between them is doubled.

(ii) Masses of both the objects are doubled.

7 You drop a rock -off the top of a tall building. How tall is the building if it hits the ground 8.0 sec later. What is the impact velocity of the rock. 3

8 What do you mean by recoil of gun? Derive the expression for the recoil velocity of a gun when a bullet is fired. 3

9 a) Define acceleration. By using speed time graph derive the equation $s=ut+1/2\ at^2$ 5

b) Calculate distance travelled by an object, starting from rest in 5 sec. if it is travelling with an acceleration of $2m/s^2$.

10 If the engine of a car provides an acceleration of $2m/s^2$ to start it from rest, assuming the mass to be 1000kg, calculate: 5

a) Force provided by the engine.
b) Momentum after 10 sec.
c) Time after which the car comes to rest, if the engine is turned off after 15 sec. and if retardation due to friction is $2m/s^2$.

11 A body is accelerated if: 1

(a) Balanced force acts on it (b) Unbalanced force acts on it
(c) No force acts on it (d) Frictional force acts on it

SECTION – B Biology

1 In a neuron cell what are the branched structures called ? 1

2 Describe the process of shrinking of a cell on being put in a strong salt solution. 2

3 Write six functions of epithelial tissues. 3

4 a) Name the animal tissue which is present in the larynx? 3
b) Write chemical constituents of this tissue.
c) What functions does this tissue perform.

5 How is a bacterial cell different from amoeba in terms of cellular arrangement 3

6 Ravi visited his village during vacations of school. He observed that elders of the village always talked about different cropping systems like mixed cropping, intercropping and crop rotation. But they did not know the scientific reason behind these practices. Ravi explained them the scientific reason so that they could use them more gainfully. 3

a) What do we call the kind of farming system with minimal or no use of chemical.
b) Write the basis if selection of crops of intercropping.
c) Village elders appreciated Ravi. Give two possible reasons.

7 Draw the labeled diagram of transverse section of parenchyma, collenchyma and sclerenchyma tissues. Write one function of each and mention the location of any two of the above mentioned tissues. 5

8 (a) Mention the type of shelters which should be provided to cattles in dairy farming and for birds in poultry farming? 5

(b) Mention the preventive measures taken to control diseases of dairy animals and poultry birds?

9 Starch is a complex form of carbohydrates found in : 1

(a) Human beings (b) Plants
(c) Amoeba (d) Paramecium

10 To observe starch granules in bread under a microscope, we will place it on slide. Then the stain which is poured and will confirm its presence clearly is: 1

a) Eosin b) Methylene blue
c) Saffranin d) Iodine Solution

(2)

11 The name and composition of the outermost layer of the human cheek cell is : 1

(a) Cell wall, cutin

(b) Cell wall, cellulose

(c) Cell membrane, proteins and lipids

(d) Cell membrane, lignin

12 A student added two drops of concentrated Hydrochloric acid to adultrated dal in test tube A. another student added a little sample of concentrated Hydrochloric acid to test tube B. they would observe : 1

a) Appearance of pink colour in test tube A.
b) No change of colour in any test tube.
c) Appearance of pink colour in test tube B.
d) Appearance of pink colour in test tubes A& B.

13 In the experiment of determining the percentage of water absorbed by raisins, two students Rahul and Rohan used the following formula respectively: 2

(I) $\frac{W1-W2}{W1} X100$ (II) $\frac{W2-W1}{W1} X100$

(a) Which student used wrong formula?
(b) What are W_1& W_2 in the correct formula?

Section C: Chemistry

1 State the principle used to separate two immiscible liquids of a mixture. Draw a neat and labeled diagram of the apparatus used. 2

2 a) State one property of a solid which liquid does not possess and one property of a liquid which solid does not possess. 3
b) List any two properties of gases.

3 Explain (giving reasons) with two examples from your daily life where cooling is caused by evaporation. 3

4 With the help of flow chart show how to obtain the following gases from air:- 3
Oxygen , Argon , Nitrogen with boiling points -183^0 C, -186^0 C, -196^0 C respectively. Which gas will liquify first in the process.

5 Two students '**A**' & '**B**' got the mixture of iron fillings and sulphur. '**A**' heated the mixture strongly while '**B**' kept it as such. They divided the mixture into 3 parts and did the following tests: (Tabulate their observations) 5

a) Both added dilute HCl to the first part.
b) Both added CS_2 to the second part.
c) Both used magnet to separate the constituents in the third part.

(3)

6 Answer the following: 5

a) A sponge can be compressed yet it is a solid, justify.

b) Which out of honey and water will diffuse faster and why?

c) List three characteristics of particles of matter.

7 To separate a mixture of Iron filings, sulphur powder and Iron sulphide, which sequence of methods should be used ? 1

(a) Magnet, dissolve in CS_2, filter, evaporation.

(b) Magnet, dissolve in water, filter, evaporation.

(c) Dissolve in water, filter, crystallize, decant.

(d) Magnet, filter, decant, crystallize.

8 When iron filings and sulphur powder are taken in china dish, mixed properly and heated strongly then : 1

(a) An element is formed.

(b) A compound is formed.

(c) A homogeneous mixture is formed.

(d) A heterogeneous mixture is formed.

9 On mixing sodium sulphate and barium chloride solution together a white insoluble substance is formed. This is an example of : 1

(a) Physical change

(b) Physical and chemical changes both

(c) Chemical change

(d) Neither chemical change nor physically change

10 The purpose of separating the components of a mixture is : 1

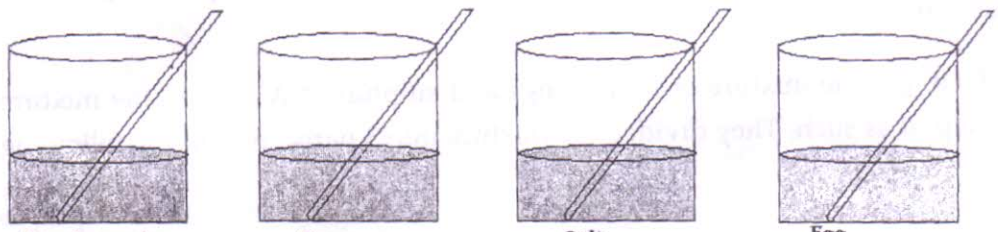
(a) Separation makes it possible to study and use the individual components of mixture.

(b) It is helpful in removing any harmful or undesirable constituents.

(c) It is helpful in removing the pure form from impure form.

(d) It is helpful in separation of all solids

11 Four students A, B, C and D are asked to prepare colloidal solutions. The following diagrams show the preparation done by them. Name the student, who will be able to prepare colloidal solutions. Write two properties of colloidal solution. 2



12 While doing an experiment to determine the boiling point of water, a student heated water in a beaker and observed that when water starts boiling the temperature remains constant. State reason. Where does the heat energy go? 2