

SUMMATIVE ASSESSMENT - I, 2014
SCIENCE / Class - IX

Time Allowed : 3 hours

Maximum Marks : 90

General Instructions :

1. The question paper comprises of two Sections, A and B. You are to attempt both the sections.
2. All questions are compulsory
3. All questions of Section-A and all questions of Section-B are to be attempted separately.
4. Question numbers 1 to 3 in Section-A are one mark questions. These are to be answered in one word or in one sentence
5. Question numbers 4 to 6 in Sections-A are two marks questions. These are to be answered in about 30 words each.
6. Question numbers 7 to 18 in Section-A are three marks questions. These are to be answered in about 50 words each
7. Question numbers 19 to 24 in Section-A are five marks questions. These are to be answered in about 70 words each.
8. Question numbers 25 to 33 in Section-B are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.
9. Question numbers 34 to 36 in Section-B are questions based on practical skills are two marks questions.

SECTION-A

- 1 ✓ What is the other name given to the cell organelle mitochondria? 1
- 2 What will be the mass of a body at the centre of the earth as compared to other places on the earth? 1
- 3 ✓ What is the difference between the motion of an object moving with uniform speed on a linear path and that on a circular path? 1
- 4 ✓ Evaporation is known as surface phenomenon. Justify this statement. 2
- 5 ✓ 1.5 Draw the diagram showing the location of the different meristmatic tissue. 2
- 6 ✓ A ball 'X' of mass 1 kg travelling at 2 m/s has a head on-collision with an identical ball Y at rest. 'X' stops and 'Y' moves off. Calculate the velocity of 'Y' after the collision. 2
- 7 ✓ List two differences between a pure substance and a mixture. Give one example of each. 3
- 8 ✓ How does pressure help in liquefaction of gas? Name two liquefied gases used in daily life. 3
- 9 ✓ How will you separate a mixture of common salt, camphor and Iron filings? Describe the process. 3
- 10 (a) Draw a neat and well labelled diagram of sclerenchyma tissue as seen in the transverse section. 3
b) Mention the function of this tissue.
- 11 ✓ Describe the structure, function and location in each case : 3
(a) Bone (b) Areolar tissue (c) Striated muscle
- 12 ✓ A man travels a distance of 1.5 m towards East, then 2.0 m towards South and finally 4.5 m towards east. 3
(i) Calculate the total distance travelled. (ii) Calculate the resultant displacement.
- 13 ✓ A particle is released from rest from a height. Find the distance it falls through in (a) 1 sec (b) in 3 sec. 3
Also find the speed with which it strikes the ground after 3 secs.

~~POWER HOUSE~~

~~1.5~~

~~1.5~~

14 On what factors do the following physical quantities depend? 3

Inertia ✓ Momentum ○ Impulse

15 If the distance between masses of two objects is increased by five units, by what factor would the mass of one of them have to be altered to maintain the same gravitational force? Would there be an increase or a decrease in the mass? 3

16 (a) Draw a graph between distance and time for a car moving with non-uniform speed. 3
 (b) A body is accelerating at a constant rate of 10 ms^{-2} . If the body starts from rest, how much distance will it cover in 2 s?

17 Girdhari lal and his family worked very hard in cultivating wheat and had a good harvest but while keeping the produce they were a little careless and as a result had to bear huge losses. His son Mukesh told his father about the precautions that need to be taken in the next season. He took special care for storing grains. 3

- (i) List two factors which may be responsible for the losses of grains during storage.
- (ii) What measures should be taken before grains are stored for future use?
- (iii) List the values of Mukesh which saved Girdhari Lal from further losses.

18 What are Xanthium, Parthenium and Cyperinees Rothendus? How do they harm the crop production? 3

19 (a) Explain the effect of temperature on the movement of particles of matter. 5
 (b) Give reason why we get smell of hot sizzling food even when we are meters away from it?

20 Identify the physical and chemical changes from the following- 5

- (a) Heating the mixture of iron and sulphur. (b) Ripening of fruits
- (c) Dissolution of salt in water (d) Rusting of iron-chair.
- (e) Making egg omelets

21 Classify the muscle fibres based upon their structure, and location. Draw neat and labelled diagram of any two of the muscle fibers. 5

22 (a) Define momentum. Write its SI units. 5
 (b) Calculate the change in momentum of a car weighing 1500 kg, when its speed increases from 36 kmh^{-1} to 72 kmh^{-1} uniformly.

23 (a) Gravitational force acts on all objects in proportion to their masses. Why does a heavy object not fall faster? Justify with the help of an expression. 5

- (b) Why does the value of 'g' vary on earth's surface?
- (c) How is the force of attraction dependent on the masses of two objects and distance between them?

24 (a) Draw the diagram of a cell and label any six parts. 5
 (b) Write two differences between prokaryotic and eukaryotic cell.

SECTION - B

25 A student is provided with four samples wheat flour, chalk powder, talcum powder and lime juice. He had to perform starch test. He poured 2-3 drops of iodine solution to each sample and observed blue black colour in : 1

- (a) Wheat flour (b) chalk powder
- (c) talcum powder (d) lime juice

26 Starch is a complex form of : 1

- (a) proteins (b) carbohydrates
- (c) fats (d) vitamin.

$$F = \frac{G \cdot m_1 \cdot m_2}{r^2}$$

$$\frac{F \cdot r^2}{m_1 \cdot m_2} = G$$

$$\frac{F \cdot 5R^2}{m_1} \times (-5m)$$

$$\begin{array}{r} 1500 \\ \times 20 \\ \hline 0000 \\ 30000 \end{array}$$

$$\begin{array}{r} 1500 \\ \times 22 \\ \hline 3000 \\ 108000 \\ \hline 108,000 \end{array}$$

A mixture of iron filings and sulphur powder was heated in a hard glass test tube for sometime till a greyish black product was formed. The test tube was cooled and a few drops of carbon disulphide were added and this content shaken well. The observation made is :

- (a) The solution remains colourless (b) The solution turns blue
(c) The solution turns pale green (d) The solution turns yellow

A mixture of iron filings and sulphur powder can be easily separated by :

- (a) using magnet (b) dissolving in carbon disulphide
(c) dissolving in water (d) Both (a) and (b)

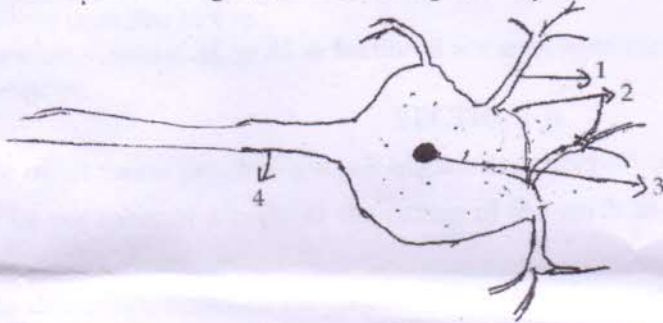
Small amount of blue litmus solution is added to magnesium oxide in a China dish. Its colour changes to :

- (a) red (b) colourless
(c) green (d) there is no change in colour

Which one of the following will you not find in the human cheek cell ?

- (a) Ribosome (b) Nucleolus
(c) Chloroplast (d) Nucleus

The students were shown the slide of a nerve cell and were asked to draw its labelled diagram. The correct labeling 1, 2, 3 and 4 respectively is :



- a) cilia, nucleus, dendrite, cyton (b) Axon, cytoplasm, dendrite, nucleus
c) Dendrite, cyton, nucleus, axon (d) axon, nucleus, dendrite, cytoplasm

Dry ice is stored under high pressure due to its nature of :-

- (a) sublimation (b) acidic (c) basic (d) neutral

Friction can be increased by :

- (a) By making the contact surface rough
(b) By increasing the weight of one of the sliding bodies
(c) Both a and b
(d) None of the above

State the method by which we can prepare colloid of starch.

In an experiment to determine the melting point of ice in laboratory, what form of ice should be preferably used? When should the reading of thermometer be noted?

A student recorded the mass of dry raisins as 4.0 g and the mass of raisins after soaking as 7 g. Calculate the percentage of water absorbed by raisins

$$p = m \times v$$

$$p = 1 \times 2$$

$$p = 2 \text{ kg m/s}$$