Sample Paper
2017-18

Subject : Science	Class : IX	Time Duration : 3 Hrs.	M.M.: 80

This paper contains 4 printed pages and 27 questions.
General Instructions: All questions are compulsory.

Section A

1. Define amu.   1

2. An Italian bee variety *A. mellifera* has been introduced in India for honey production. Write any two desirable traits of it over other varieties.   1

3. The speedometer readings of a car moving on a straight road are shown below. Find acceleration of the car and its displacement.   2

Time	**Speedometer reading**
9:25 am	36 km/h
9:45 am	72km/h

4. State and explain Newton's third law of motion with the help of an example.   2

5. Difference between evaporation and boiling.   2

6. Let a planet has a mass of 6.6×10^{23} kg and a radius of 3200 km. What is the expected value of g on the surface of the planet? Given that $G = 6.7 \times 10^{-11}$ Nm^2kg^{-2}.   3

7. State any three applications of Law of Floatation.   3

8. Give the principle involved in the following techniques: -   3
   - (a) Sublimation
   - (b) Crystillization
   - (c) Chromatography

9. Give reasons for the following: 3
   - a) Your fingers tend to get squeezed when placed for long time in detergent solution.
   - b) Golgi bodies are found more in cells which secrete digestive enzymes.
   - c) Mitochondria and chloroplast are called as semi autonomous cell organellae.

10. Calculate number of atoms in   3
    - (a) 52u of He
    - (b) 52g of He
    - (c) 52 moles of He

11. Why blood is called as a fluid connective tissue? Mention and give one function each of its components.   3

12.   State Work- Kinetic energy theorm. Derive its mathematical expression.   3

13.   a) How is capture fishery different from culture fishery?   1+2
       b) Define composite fish culture. How is it done for efficient utilization of
       resources and for high yield?

14.   Define the terms and give one example of each: 3
           a) Coelome
           b) Triploblastic
           c) Radially symmetrical

OR

Classify the following plants into different divisions: -
           a) Spirogyra   3
           b) Ferns
           c)   Funaria
           d) Pinus
           e) Apple tree and
           f) Mustard plant

15.   A gardener was seen burning dry leaves in the garden daily by a bunch of   3
       school kids. The kids went to him and advised not to burn those leaves and
       told them about this practice's ill effects.
           a) What ill- effects were the kids talking of?
           b) What do you suggest the gardener to do with the leaves instead of
               burning?
           c) Write any two values shown by the kids?

16.   a) What do you understand by Longitudinal and Transverse waves?   1+4
       b) Define Echo. What are the conditions for production of Distinct Echo?

OR

a) What do you understand by Reverberation?   1+1+3
b) Why are the ceiling s of conference halls usually curve?
c) With the help of a diagram, explain how does a SONAR works?

17.   a) Ramesh goes from a residence to a market 25 km away. Finding the   2+3
          market closed, he returns back to his residence. What is the distance
          covered by Ramesh? What is his displacement?
       b)A driver of a car travelling at 52 km/h applies the brakes and accelerates
          uniformly in the opposite direction. The car stops in 5 seconds. Another
          driver going at 3 km/h in another car applie3s his brakes slowly and stops
          in 10 s. On the graph paper, plot the speed versus time graphs for the two
          cars. Which of the two cars travelled farther after the brakes were applied?

18. The substance X normally exists in a physical state which can flow easily 2+1+2 but does not fill it's vessel completely. It also turns anhydrous copper sulphate blue. When substance X is cooled excessively, it changes into a substance Y which has a fixed shape as well as fixed volume. If, however, the substance X is heated strongly, it changes into substance Z which has neither fixed shape nor a fixed volume.

a) Name the substances X , Y and Z.

b) What is the process of conversion of X into Y known as?

c) At what temperature X gets converted into Y?

d) What is the process of conversion of X into Z known as?

e) At what temperature X gets converted into Z?

19. The liquid air has three components X , Y and Z whose boiling points are:- 3+2
- 186^0C, - 183^0C and – 196^0C respectively. When liquid air is fed into a tall fractional distillation column from near it's bottom and warmed up slowly:

   1. Which component will be collected from near the bottom of the fractional distillation column? Why?

   1. Which component will be collected from the top part of the fractional distillation column? Why?

   2. Which component will be collected from the middle part of the fractional distillation column? Why?

   3. What could the component X, Y and Z be?

20. a)What do you understand by immediate and contributory cause of a 2+1+2 disease? Explain taking example of the child suffering from diarrhoea.

b) Balanced diet keeps us healthy. Comment on the statement giving reason.

c) Explain the mechanism of action of antibiotics.
.

21. a) Distinguish between Bryophyte and thallophyte giving two examples 2+2+1 each.

b) Which organism is more complex and evolved among bacteria, mushroom and mango tree. Give reasons.

c) Jelly fish and star fish are not true fishes. In which group do they belong? Give one characteristic feature of each to say why they belong to the respective groups

Section B

22. A Student observed the following diagram under the microscope: 2

a (i)

Answer the following questions based on the observations:
a) Identify the above diagram
b) Mention its two identifying features.
c) Give its one function.

23.   a) Which stain is used to prepare a slide of onion peel?   2
             b) Which part takes up the stain?

24.   A large wooden block kept on a horizontal surface is pushed with forces F1   2
and F2 on its two opposite sides such that F1=F2. What will be the change in
state of motion or rest of the block if F1 becomes greater than F2 and why?

25.   A child while playing with a ball throws it in a vertically upward direction.   2
He wonders why the ball falls back to the ground. Which force according to
you brings the ball back to the ground? Give any one property of this force.

26.   Write the principle to separate sand, ammonium chloride and salt from a   2
mixture.

27.   Explain law of conservation of mass with an example.   2

SERVICE BEFORE SELF