ANANDALAYA
PERIODIC TEST – 3
Class : IX

Subject: Science

Date : 03-01-2023

MM : 40

Time: 1 Hr. 30 min.

General Instructions:
1. There are 17 questions in this question paper. All questions are compulsory.
2. This question paper has four sections: Section A, Section B, Section C and Section D.
3. Section A - Q. No. 1 to 5 are objective type questions and carry 1 mark each.
4. Section B - Q. No. 6 to 10 are short answer questions and carry 2 marks each.
5. Section C - Q. No. 11 to 15 are long answer questions (I) and carry 3 marks each.
6. Section D - Q. No. 16 &17are long answer questions (II) and carry 5 marks.
7. There is no overall choice. However an internal choice has been provided in one question of three marks and one question of five marks. You have to attempt only one of the choices in such questions.

SECTION A

1. The masses of scooter and bike are in the ratio 2:3. Both are moving with the same speed of 108 km/h. What is the ratio of their kinetic energy? (1)

2. The number of electrons in an element X is 15 and the number of neutrons is 16. Write the correct representation of the element. (1)

3. Can Cl^{35} and Cl^{37} have different valencies? Justify your answer. (1)

4. Which among the following is the incorrect statement? (1)
   (A) Meristematic tissues have dense cytoplasm
   (B) Meristematic tissues are not capable of division.
   (C) Meriatematic tissues have prominent nucleus.
   (D) They are living tissue.

5. Fill in the blank by choosing the correct word. (1)
   Hepatitis-B and_____ are viral diseases.
   (A) Malaria   (B) AIDS   (C) Athlete's foot   (D) Tuberculosis.

SECTION B

6. (a) Define relative density. (2)
   (b) A solid weighs 80 g in air and 60 g in a water. Calculate relative density of solid.

7. When is the work done by a body negative? Give an example of negative work. (2)

8. Atomic number of sodium is 11 and mass number is 23. What type of ion will it form and how will you represent it? (2)

9. Medical professionals are more exposed to infectious agents than others in the community. How do they protect themselves from falling ill? Suggest valid points. (2)

10. Classify epithelial tissues into its subtypes by giving the structural differences among them. (2)

SECTION C

11. (a) State Archimedes principle. (3)
    (b) Name two factors on which the buoyant force acting on an object depends.
    (c) A half kg spherical iron ball sinks in water but floats when converted into a box. Does density of the spherical ball change in these cases? Justify your answer.

OR

(a) Define SI unit of Pressure.
(b) A box has dimensions 1.5 m x 2m x 2.5m. Calculate the pressure exerted by the box if it is rested on the surfaces at (i) 1.5 m x 2 m (ii) 2 m x 2.5 m (iii) 1.5 m x 2.5 m. Given that the mass of box is 30 kg and g is 10 m/s^2. Arrange the value of pressure in ascending order of their magnitude.

12. The average atomic mass of a sample of an element X is 16.2 u. What are the percentages of isotopes $_8X^{16}$ and $_8X^{18}$ in the sample. (3)

13. Explain why fluorine forms F^- ion and nitrogen forms N^{-3} ion. Also explain why Magnesium forms Mg^{2+} ion. (3)

14. Draw a model representing the structure of the nucleus and distribution of electrons representing the phosphorous atom (Atomic number of P = 15, atomic mass= 31). What will be valency of phosphorus atom? (3)

15. Using a flowchart, classify permanent plant tissue into its various types. (3)

SECTION D

16. (a) What is the law of conservation of mechanical energy? (5)
    (b) Explain the conservation of energy in the case of a freely falling object.

17. (a) "Prevention is better than cure" is a common adage. Maintenance of sanitation and hygiene can go long way to prevent contagious diseases. How would you ensure the same for you and your family? (5)

OR

(a) Which are the two approaches one may have to take to get well while suffering from an infection? Explain with examples.
(b) Making anti-viral medicines is harder than making anti- bacterial medicines. Explain the reason.