AMITY INSTITUTE
FOR COMPETITIVE EXAMINATIONS

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SynConnect Programme

UNIT TEST - 1

CLASS - IX

SCIENCE

Time: 50 Minutes   **Date: 09.11.2016**   **Maximum Marks: 60**

GENERAL INSTRUCTIONS:
1. Fill in the response sheet with your Name, Class, School etc, in the respective columns, using a blue pen.
2. Only one choice (a), (b), (c), (d) is correct for each question. Shade the alphabet of your choice in the response sheet.
3. For each correct response you will get **2 marks**; for each **incorrect** response you will lose **1 mark**. However if the question is unanswered no marks will be deducted.
4. Use only HB pencil/Ball point pen for shading.

1. The relative density of a body weighing 30 N in air is 5. Its weight in water is:

   (a) 10 N   (b) 20 N   (c) 24 N   (d) 30 N

2. A dam for water reservoir is built thicker at the bottom than at the top because

   (a) Pressure of water is very large at bottom.
   (b) Water is likely to have more density at bottom.
   (c) Quantity of water at bottom is more
   (d) None of these

3. Two liquids of same volume but different densities d_1 and d_2 are mixed, then density of mixture is:

   (a) $\dfrac{d_1 d_2}{d_1 + d_2}$ (b) $\dfrac{2 d_1 d_2}{d_1 + d_2}$ (c) $\dfrac{d_1 + d_2}{2 d_1 d_2}$ (d) $\dfrac{d_1 + d_2}{2}$

4. A cube of edge length 10 cm is placed inside a liquid. The pressure at the upper face of the cube is 2000 Pa. What will be the force exerted by the liquid on this face.

   (a) 10 N   (b) 5 N   (c) 20 N   (d) 15 N

5. A balloon having a mass of 20 kg remains suspended motionless in the air. If the air density is 1.29 kg/m^3, the volume of the balloon in cubic meters is:

   (a) 15.5   (b) 16.5   (c) 17.5   (d) 18.5

6. How much will a body of weight 35 N weigh in water if it displaces one litre of water? (Take $g = 10$ m/s^2)

(a) 10 N   (b) 15 N   (c) 20 N   (d) 25 N

7. A solid sphere has a radius of 4cm and a mass of 4kg. The relative density of the sphere (in terms of 10^3) is:

(a) $\dfrac{1}{4}$ (b) $\dfrac{1}{16}$ (c) $\dfrac{1}{64}$ (d) $\dfrac{1}{256}$

8. Two liquids of density d_1 and d_2 are mixed with masses in the ratio 5 : 3, then density of mixture is:

(a) $\dfrac{8d_1 d_2}{5d_2 + 3d_1}$ (b) $\dfrac{8d_1 d_2}{5d_1 + 3d_2}$ (c) $\dfrac{5d_1 d_2}{3d_1 + 8d_2}$ (d) $\dfrac{5d_1 d_2}{3d_2 + 8d_1}$

9. If the relative density of substance is 7, what will be its density?

(a) 7000 kg/m^3 (b) 7100 kg/m^3 (c) 7200 kg/m^3 (d) 7300 kg/m^3

10. The pressure due to atmosphere is 10^5 Pa. The force exerted by the atmosphere on the top surface of a table 1.0 m long and 2.0 m wide is:

(a) 3×10^5 N   (b) 2×10^5 N   (c) 4×10^5 N   (d) 10^5 N

11. A sample of Ammonia molecule irrespective of source, contains 82.35% of Nitrogen and 17.65% of Hydrogen by mass. This data supports:

(a) Law of Conservation of Mass   (b) Law of Definite Proportions

(c) Law of Multiple Proportions   (d) Avogadro's Law

12. 2.016g of hydrogen (gram atomic mass of hydrogen is 1.008 g) combines with 15.999 g of oxygen to form water and 31.998 g of oxygen to form hydrogen peroxide. Hence the ratio of oxygen in both compound is:

(a) 2 : 1   (b) 1 : 2   (c) 4 : 1   (d) 3 : 1

13. Which of the following represents chemical formula of sodium thiosulphate?

(a) $Na_2(S_2O_3)_2$ (b) $Na_2S_2O_3$ (c) $Na_2(SO_4)_3$ (d) $NaSO_4$

14. The mass ratio of hydrogen to oxygen in hydrogen peroxide (H_2O_2) is:

(a) 1 : 16   (b) 2 : 16   (c) 16 : 1   (d) None of these

15. Avogadro numbers represents the number of atoms in:

(a) 12 grams of ^{12}C (b) 320 grams of sulphur

(c) 32 grams of oxygen   (d) 1 gram of ^{12}C

16. An element X is tetravalent and another element Y is divalent. The compound formed by these two elements will be:

(a) XY   (b) XY_2 (c) X_2Y (d) XY_4

17. Valency of phosphorus in P_2O_5 is:

(a) 5   (b) 2   (c) 4   (d) 6

18. Molecular mass of calcium sulphate hemihydrate ($CaSO_4.1/2\ H_2O$) in grams is:

(a) 154   (b) 145   (c) 136   (d) 1224

19. The formula of the compound formed between ferrous and sulphide ions is:
    (a) FeS
    (b) Fe_2S_3
    (c) Fe_3S_4
    (d) None of these

20. In an experiment, 1.288g of copper oxide was obtained from 1.03g of copper. In another experiment, 3.672g of copper oxide on reduction gave 2.938g of copper. The ratio of Cu and O in two samples of copper oxide is:
    (a) 2 : 1, 2 : 1
    (b) 3 : 1, 3 : 1
    (c) 4 : 1, 4 : 1
    (d) 5 : 1, 5 : 1

21. The term taxonomy in general refers to:
    (a) Classification of organisms
    (b) Identification of organisms
    (c) Nomenclature of organisms
    (d) All the above

22. Arrange the following in order of increasing group size, beginning with the smallest.
    (i) Family
    (ii) Kingdom
    (iii) Phylum / Division
    (iv) Genus
    (v) Order
    (vi) Class
    (vii) Species
    (a) (vii), (iv), (i), (v), (vi), (iii), (ii)
    (b) (i), (ii), (iii), (iv), (v), (vi), (vii)
    (c) (v), (iv), (i), (vi), (ii), (iii), (vii)
    (d) (vii), (vi), (i), (ii), (iii), (iv), (v)

23. What are mule, tigon, liger and hinny?
    (a) Species
    (b) Sub-species
    (c) Hybrids
    (d) Categories

24. In Whittaker's five kingdom system of classification, eukaryotes are placed in:
    (a) Three kingdoms
    (b) Two kingdoms
    (c) Four kingdoms
    (d) All the five kingdoms

25. Whittaker's five kingdom classification is based on:
    (a) Complexity of cell
    (b) Complexity of body organisation
    (c) Mode of nutrition
    (d) All of the above

26. Which of the following is the wall-less and smallest living cell?
    (a) Algae
    (b) Bacteriophage
    (c) Cyanobacteria
    (d) Mycoplasma

27. When bacteria are rod like, they are called:
    (a) Bacilli
    (b) Cocci
    (c) Spirilla
    (d) Vibrios

28. The scientific name of dog is correctly written as:
    (a) *canis familiaris*
    (b) Canis familiaris
    (c) *Canis familiaris*
    (d) *Canis Familiaris*

29. Plasmids are:
    (a) Main DNA
    (b) Extra chromosomal genetic elements
    (c) Repetitive genes
    (d) Organisms smaller than bacteria

30. Cyanobacteria are also referred to as:
    (a) Slime moulds
    (b) Lichens
    (c) Blue green algae
    (d) Protists

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SPACE FOR ROUGH WORK