

DAV SUMMATIVE ASSESSMENT - II (2014-15) 0GAS38C  
Samastipur SCIENCE Class - IX

Time allowed: 3 hours

Maximum Marks: 90

### SECTION-A

- 1 What is the atomicity of the following: (a)  $K_2CO_3$  (b)  $HCO_3^-$  1
- 2 What is the maximum number of electrons which can be accommodated in the outermost orbit of an atom? 1
- 3 What are vectors? Give one example. 1
- 4 The frequency of the sound emitted by a loudspeaker is 1020 Hz. Calculate the wavelength of the sound wave in air. (velocity of sound in air is = 340 m/s) 2
- 5 An object of mass  $m$  and velocity  $v$  has kinetic energy = 900 J. Find the new kinetic energy if the velocity of the object becomes one third. 2
- 6 (a) An element X has a valency of 2. Write the chemical formula for  
(i) Bromide of the element (ii) Oxide of the element 3  
(b) Define formula unit mass of a substance.
- 7 (a) Name the three sub-atomic particles of an atom.  
(b) An atom of an element has 5 electrons in L-shell.  
(i) What is the atomic number of the element?  
(ii) State its valency.  
(iii) Identify the element and write its name. 3
- 8 (a) State two points of difference between atom and molecule with an example of each. 3  
(b) Mention the difference between  $2N$  and  $N_2$ .
- 9 Mention three characteristics of phylum chordata. 3
- 10 How can we prevent exposure to: (a) Air borne infections 3  
(b) Water borne infections (c) Vector borne infections
- 11 (a) Identify and name the kingdoms that comprise of: 3  
(i) Unicellular prokaryotes  
(ii) Multicellular eukaryotes without cell wall  
(iii) Multicellular heterotrophs with cell wall  
(b) Identify the phylum with the following features: (i) spiny - skinned  
(ii) jointed appendages (iii) cylindrical body
- 12 Name and define the S.I. unit and commercial unit of energy. Establish a relationship between the two. 3
- 13 A block of wood of mass 5 kg and dimensions 40 cm  $\times$  20 cm  $\times$  10 cm is placed on a table top. Find the pressure exerted if the block lies on the table top with sides of dimension ( $g = 10 \text{ ms}^{-2}$ ) (a) 40 cm  $\times$  20 cm (b) 40 cm  $\times$  10 cm 3
- 14 How does the sound produced by a vibrating object in a medium reach our ears? Explain giving the names of main parts of ear which help in the process. 3



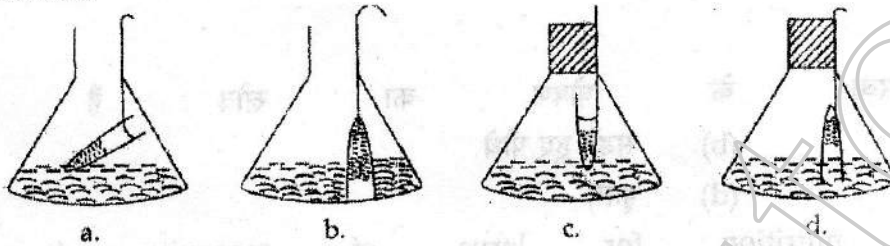
- 15 Define relative density. Relative density of mercury is 13.6. The density of water is  $10^3 \text{ kg/m}^3$ . What is the density of mercury in S.I. unit? 3
- 16 The milkman in our society started carrying lactometer. His move was well appreciated by the society members. 3
- (a) What is the use of lactometer? On what principle it works?  
 (b) What values of milkman is shown by the move?
- 17 Name two elements which have isotopes. Write the symbols of their isotopes and provide an account of the subatomic particles present in each of these isotopes. 5
- 18 Bacteria and Cyanobacteria are included under kingdom Monera. Explain in detail, the structure of E. coli bacteria. What kind of body design does it have? State its mode of nutrition. 5
- 19 Explain giving reasons: 5
- (a) Balanced diet is necessary for maintaining healthy body.  
 (b) Health of an organism depends upon the surrounding environmental conditions.  
 (c) Our surrounding areas should be free of stagnant water.  
 (d) Social harmony and good economic conditions are necessary for good health.
- 20 The volume of 100 g of a solid substance is  $25 \text{ cm}^3$  and the density of water is  $1 \text{ g/cm}^3$  5
- (a) Find the density of the substance. Will it float or sink in water?  
 (b) Find the relative density of the substance.  
 (c) Ravi finds his mass to be 42 kg on a weighing machine. Is his actual mass more or less than 42 kg?
- 21 Calculate the electricity bill amount for a month of 31 days, if the following devices are used as specified: 5
- (a) 3 bulbs of 40 W for 6 hours. (b) 4 tubelights of 50 W for 8 hours.  
 (c) A TV of 120 W for 6 hours. Given the rate of electricity is ₹ 2.50 per unit.

### SECTION - B

- 25 The wave property of sound which does not affect the hearing process is: 1
- (a) Intensity (b) Loudness  
 (c) Velocity of sound (d) Amplitude
- 26 Three identical cuboids A, B and C having masses 5kg, 6kg and 7kg respectively are kept on wheat flour in a similar position. Which of the three will exert minimum pressure on the flour? 1
- (a) A (b) B (c) C (d) Both B and C
- 27 The qualities in a string which you will look to choose it for your experiment on speed of pulse are:
- (a) It should be short, soft and flexible. (c) It should be short, rigid and flexible.  
 (b) It should be long, soft and flexible. (d) It should be long, rigid and flexible.

- 28 Four students observed the specimens of two plants and sketched them as shown below. They noted in their notebook the identification and the names of the group to which these plants belong as given below. The correct identification is :
- (a) A - moss ; Bryophyta      (b) A - pine ; Gymnosperm  
 B - fern ; Pteridophyta      B - leafy plant ; Angiosperm
- (c) Both A and B are moss and belong to Bryophyta  
 (d) Both A and B are ferns and belong to Pteridophyta.

- 29 Which of the following is the correct set up for observing the law of conservation of mass in a chemical reaction before the solutions are mixed ?



- 30 28g nitrogen combines with 6g hydrogen to form ammonia gas. If the law of conservation is true, the mass of ammonia gas will be :

(a) 28 g    (b) 6 g    (c) 22 g    (d) 34 g

- 31 Flowers in of dicotyledonous plants are generally :

(a) trimerous                      (b) hexamerous  
 (c) pentamerous                (d) octamerous

- 32 Rushil observed the root of a plant and found that as extensive mass of similarly sized roots, without any primary or central roots and named it as :

(a) stilt root                      (b) fibrous root  
 (c) prop root                    (d) tap root

- 33 The source of nutrition for larva of mosquito is

(a) Zooplanktons                (b) Decaying plant  
 (c) Human blood                (d) Worms

- 34 Write two main precautions to be taken to read the water level in the graduated cylinder. !

- 35 State Archimedes' Principle ?

- 36 Differentiate between male and female cockroach (2 points)