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**INDIAN SCHOOL MUSCAT
MID TERM EXAMINATION
SCIENCE**

SET-A

CLASS: IX

Sub. Code: 086

Time Allotted: 3 Hrs

01.10.2018

Max. Marks: 80

1. What does the following represent: 1
 - (a) Slope of the velocity – time graph
 - (b) Area under a velocity – time graph
2. Name the type of colloid in which the dispersed phase is a liquid and dispersing medium is a solid. 1
3. Draw the displacement – time graphs for an object (i) at rest and (ii) in uniformly accelerated motion. 2
4. A body of mass 1000Kg moving at a speed of 10m/s reaches the speed of 50m/s in 20sec. 2
Calculate the force required to do so.
5. Name SI unit of measuring temperature. The boiling point of water is 100°C under normal atmospheric pressure. Convert this temperature to S I units. 2
6. When a solution is said to be saturated? How can you change a saturated solution to an unsaturated solution? 2
7. Give reasons: (a) Gases fill up completely the vessel in which they are kept. 2
(b) Wet clothes dry faster when we spread them out.
8. Why the inner membrane of Mitochondria is highly folded? Why mitochondria are considered as strange organelle? 2
9. Write two features of plant cell which provide them with strength and rigidity. 2
10. Write two functions of areolar connective tissue. 2
11. How are simple tissues different from complex tissues in plants? (any two points) 2
12. For how long should a force of 100N act on a body of mass 20Kg at rest so that it acquires a velocity of 100m/s? 3

(OR)

A gun of mass 500g fires a bullet of mass 10g with a speed of 100m/s. Find the recoil velocity of the gun.

13. Two bodies A and B of same mass are moving with velocities v and $3v$ respectively. Compare their (i) inertia (ii) momentum and (iii) the force needed to stop them in the same time. 3
14. State and prove law of conservation of momentum. 3
15. (i) Write two differences between speed and velocity. 2+1
(ii) Under what condition, the average speed of a moving object is equal to the magnitude of the average velocity.
16. (a) Define Solubility. 3
(b) A solution contains 60g of sugar in 480g of water. Calculate the concentration of solution in terms of mass by mass percentage of the solution.

(OR)

Identify the dispersed phase and dispersing medium in the following examples of colloids: (a) Fog, (b) Milk (c) Foam

17. Name the process associated with the following: 3
(a) Dry ice is kept at room temperature and under one atmosphere pressure.
(b) A crystal of potassium permanganate is put in water contained in a beaker and stirred with a glass rod.
(c) Milk is churned to separate cream from it.
18. (a) Differentiate between homogeneous mixture and heterogeneous mixture. 3
(b) Give an example for Solid - Liquid homogeneous mixture.
19. (i) Identify the type of tissues present in the following 3
a) Skin b) Bark of tree c) lining of kidney tubule
d) Bone e) Brain f) vascular bundles

(OR)

- (ii) Differentiate Parenchyma, chlorenchyma & collenchyma cells on the basis of their cell wall.
20. What are genes? Write the difference between genes and chromosomes? Write an important function of nucleus? 3
21. Write any three differences between voluntary and involuntary muscles. 3
22. (i) Draw velocity – time graph for an uniformly accelerated object. Using velocity – time graph, derive $\mathbf{v = u + at}$. 3+2

- (ii) A car travels 100km at a speed of 60kmph and returns with a speed of 40kmph. Calculate the average speed for the whole journey.

(OR)

- (i) Draw velocity – time graph for an uniformly accelerated object. Using velocity – time graph, derive $v^2 - u^2 = 2as$.

- (ii) A body starting from rest travels with uniform acceleration. If it travels a distance of 100m in 5sec, find the value of acceleration.

23. (a) State universal law of gravitation. Derive an expression for gravitational force between two bodies. 3+2

- (b) What happens to the force between two objects, if (i) the mass of one object is doubled?
(ii) The distance between the two objects is reduced to half.

24. (a) Compare Colloids, True Solution and Suspension with respect to the following properties: 5
(a) Stability (b) Particle size (c) Filterability

- (b) What is Tyndall effect?

(OR)

- (a) Which separation techniques you will apply for the separation of the following mixtures:

- (i) Oil from water (ii) Coloured component (dye) from blue ink

- (b) Explain with the help of a neat labelled diagram to show the separation of common salt from ammonium chloride.

25. (a) Differentiate between Boiling and Evaporation. 5
(b) How do Temperature and Humidity affect the rate of evaporation.

26. With the help of a neat labeled diagram write the importance of nerve cells in animals. 5

(OR)

Draw the labeled section of phloem. Write the functions of vascular bundles in plants.

27. Briefly describe the structure and any three functions of Golgi apparatus. 5

End of the Question Paper