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**Max Time : 1 hr** **Class = 9th Science Max Marks : 80**

**Mid Term Exam**

Section – A

1. Multiple choice questions : [ 1 X 20 = 20 ]
2. What is linear momentum of a toy car of mass 300 g, moving with a speed of 18 km/h.

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1.5 kg m/s | b) 3 kg m/s | c) 5.4 kg m/s | d) None |

1. The S.I. unit of linear momentum is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Newton | b) Dyne | c) kg m/s | d) g m/s |

1. A particle undergo displacement of 3 m due to north and 4 m due to east. The net displacement is:

|  |  |  |  |
| --- | --- | --- | --- |
| a) 5 m | b) 7 m | c) 1 m | d) None of these |

1. A body starting from rest acquires a velocity of 10 m/s in 2 seconds. The acceleration of the body is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 5 m/s2 | b) 10 m/s2 | c) 1 m/s2 | d) zero |

1. If a membrane allows passage of solvent freely but selects the passage of specific solute particles, it is called as :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Impermeable | b) permeable | c) Semi - permeable | d) Selectively permeable |

1. Fluid mosaic model was presented by :

|  |  |
| --- | --- |
| a) Singer and Nicolson (1972) | b) Danielli and Davson (1935) |
| c) Robertson (1959) | d) Robert brown (1858) |

1. Chromosomes are made up of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) DNA | b) Protein | c) DNA & protein | d) RNA |

1. In solid, liquid and gas the interparticle spaces increase in the order:

|  |  |  |  |
| --- | --- | --- | --- |
| a) liquid > gas > solid | b) solid > liquid > gas | c) gas > solid > liquid | d) none |

1. Fats are stored in human body as :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Cuboidal epithelium | b) Adipose tissue | c) Bones | d) Cartilage |

1. Nerve cell does not contain :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Axon | b) Nerve endings | c) Tendons | d) Dendrites |

1. Skeleton tissue comprises:

|  |  |
| --- | --- |
| a) Tendons and ligaments | b) Bones and cartilage |
| c) Blood and lymph | d) All of these |

1. Which of the following cell play a role in defence mechanism?

|  |  |  |  |
| --- | --- | --- | --- |
| a) WBC | b) RBC | c) Platelets | d) None of these |

1. The boiling point of diethyl ether , acetone and n-butyl alcohol are 35 , 56 and 118 respectively. Which one of the following correctly represents their boiling points in kelvin scale?

|  |  |
| --- | --- |
| a) 306 K , 329 K , 391 K | b) 308 K , 329 K , 392 K |
| c) 308 K , 329 K , 391 K | d) 329 K , 392 K , 308 K |

1. Which condition out of the following would increase the evaporation of water?

|  |  |
| --- | --- |
| a) Increase in temperature of water | b) Decrease in temperature of water |
| c) Less exposed surface area of water | d) Adding common salt to water |

1. The dead element present in phloem are :

|  |  |  |  |
| --- | --- | --- | --- |
| a) companion cell | b) phloem fibres | c) phloem parenchyma | d) sieve tubes |

1. Meristematic tissue in plants are :

|  |  |
| --- | --- |
| a) localized and permanent | b) not limited to certain region |
| c) localized and continuously dividing cells | d) growing in volume |

1. Flexibility in plants is due to :

|  |  |  |  |
| --- | --- | --- | --- |
| a) collenchyma | b) sclerenchyma | c) parenchyma | d) chlorenchyma |

1. Girth of stem increases due to :

|  |  |
| --- | --- |
| a) apical meristem | b) lateral meristem |
| c) intercalary meristem | d) vertical meristem |

1. When a branch of a tree is shaken, some of the fruits may fall down. This happens due to :

|  |  |
| --- | --- |
| a) Inertia of rest | b) Inertia of motion |
| c) Inertia of direction | d) None of the above |

1. The S.I. unit of linear momentum is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Newton | b) Dyne | c) kg m/s | d) g m/s |

Section – B [ 1 x 10 = 10 ]

1. Where are protein synthesis occur inside the cell?
2. What types of clothes should we wear in summer?
3. Define Solubility.
4. Define Newtons second laws of motion.
5. Define One newton.
6. Define Latent heat of Fusion.
7. What is meant by a pure substance?
8. Why lysosomes called as suicidal bag of the cell?
9. Name the fat storing tissue in our body?
10. Define Tyndall effect.
11. What is mass percent of a solution ?
12. Name two elements which exist in liquid state at room temperature.

Section – C [ 2 x 10 = 20 ]

1. Convert the following temperatures to the Celsius scale:

(a) 293 K (b) 470 K

1. What are the characteristics of particles of matter?
2. Differentiate between homogeneous and heterogeneous mixture.
3. Define Balanced and Unbalanced forces.
4. Differentiate between Smooth Endoplasmic Reticulum and Rough Endoplasmic Reticulum.
5. For any substance, why does the temperature remain constant during the change of state?
6. An object starts from O and travels 5 km towards East , 5 km towards North and finally 10 km towards West. Calculate distance travelled and displacement of the object.
7. A train starting from a railway station and moving with uniform acceleration attains a speed of 40 km/h in 10 minutes. Find its acceleration
8. A 150 g ball travelling at 30 m/s strikes the palm of a player’s hand and is stopped in 0.06 s. Calculate the force exerted by the ball on the hand
9. Define Tendons and Ligaments.

Section – D [ 3 x 15 = 15 ]

1. Draw labelled diagram of mitochondria. Write the functions of mitochondria.
2. A force of 4 N acts on a body of mass 2 kg for 4 s. Assuming the body to be initially at rest. Find :
3. Its velocity when the force stops acting.
4. The distance covered in 10 s after the force starts acting.
5. Differentiate between RBC , WBC and Platelets.
6. Distinguised between the properties of Mixture and Compound.
7. Write four points to distinguish between true solution , colloidal solution and suspension.

Section – E [ 3 x 15 = 15 ]

1. (i) A 8000 kg engine pulls a train of 5 wagons, each of 2000 kg along a horizontal track. If the engine exerts a force of 40000 N and the track offers a frictional force of 5000 N, then calculate :

(a) The net accelerating force (b) The acceleration of the train (c) The force of wagon 1 on 2.

(ii) Define Linear momentum.

1. Compare the 5 properties of each solid , liquid and gaseous particles.
2. Define the following terms : [ 1 x 5 = 5 ]

(a) Exosmosis (b) Active Transport (c) Plasmodesmata (d) Chromosome

(e) Hypertonic solution.