CARMEL CONVENT SCHOOL, CHANDIGARH

TERM EXAMINIATION

CLASS IX SUB: SCIENCE

PHYSICS

MCQ

1. A cyclist moving on a circular track of radius 40 m completes half a revolution in 40 s. Its average velocity is

a) zero (b) 2 ms^{-1} (c) 2 π ms^{-1} (d) 4 π ms^{-1} 1

2. An object travels 10 km at a speed of 100 ms-1 and another 10 km at 50 ms-1 1

- The average speed over the whole distance is

a) 75 ms-1 (b) 55 ms-1 (c) 66.7 ms-1 (d) 33.3 ms-1

3. The numerical value of the ratio of displacement to distance is : 1

(a) always less than one (b) always equal to one

(c) always more than one (d) equal to or less than one

4. Why does a person in a bus tend to fall forward, when the bus stops suddenly ? This is due to 1

(a) inertia of motion of upper part of his body (b) inertia of motion of lower part of his body

(c) inertia of rest of the person (d) None of the above

5. In collision between a heavier body and a lighter body 1

(a) both experience the same force (b) both undergo same change in momentum

(c) lighter body is likely to be damaged more than the heavier body

(d) all the above

6. What is linear momentum of a toy car of mass 300 gram, moving with a speed of 18 km/h. 1

(a) 1.5 kg m/s (b) 3.0 kg m/s (c) 5.4 kg m/s (d) None of the above

7. A body of mass 2 kg is moving over a perfectly smooth surface with a uniform velocity of 5 mis. The external force acting on the body is 1

(a) 10 N (b) 10 dyne (C) zero (d) cannot say

Assertion Reason

For Question numbers 8 to 11, two statements are given - one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

(A) Both A and R are true and R is correct explanation of A.

B) Both A and R are true, but R is not the correct explanation of A.

C) A is true, but R is false. (D) A is false, but R is true.

8. Assertion. Forces of action and reaction act on the same body.

Reason. These forces are always equal and opposite.

(a) A (b) B (c) C (d) D

9. Assertion. Though every pair of tow objects exerts gravitational pull on each other, yet they cannot move towards each other. 1

Reason. The gravitational pull is too weak to overcome the frictional force between them to enable them to move.

(a) A (b) B (c) C (d) D

10. Assertion. When both the bodies are heavy, gravitational force between them is very large 1

Reason. This large gravitational force exerted by earth on moon, is responsible for revolution of moon around the earth.

(a) A (b) B (c) C (d)D

11. Assertion. Average velocity = $\frac{\text{initial velocity + final velocity}}{2}$ 1

Reason. This happens when velocity of the body is changing at a constant rate.

(a) A (b) B (c) C (d) D

12. A force of 2N gives a mass m_1 an acceleration of $5m/s^2$ and mass m_2 an acceleration of $7\ m/s^2$. What acceleration would be produced if both the masses are tied together? 2

13. The driver of a car A travelling at 54 km/h applies the brakes and stops the car in 4 seconds. Another driver of car B travelling at 36 km/h applies the brakes and stops the car in 6 seconds. Plot speed versus times graphs for the two cars. Which of the two cars travelling further before stopping. 2

14. (a) Draw a distance – time graph of a body moving with constant acceleration. 2

(b) A force of 500 N is required just to move a table on floor at a constant speed. What is the frictional force exerted by the floor on the table.

15. Give reasons: - 3

a. Road accidents at high speeds very much worse than at low speeds.

b. it is difficult to walk on a slippery road.

c. A sheet of paper fall slower than one that is crumpled into a ball.

16. A ball thrown up vertically returns to the thrower in 8s. Find 3

a. the velocity with which it was thrown up.

b. the maximum height it reaches.

c. its position after 6s.

PISA

Gravitational force between any two objects of masses m, and my separated by a distance r is

$$F = \frac{Gm_1m_2}{r^2}$$

ver Question Numbers to on the basis of your understanding of the above paragraph and the ated studied concepts: 4

17. When two bodies of mass 1 kg each are 1 metre apart, the gravitational force of attraction between them is

(a) $6\text{-}67 \times 10^{-11}$ N (b) 6.67×10^{11} N (c) 9-8 N (a) None of these

18. When a body of mass 1 kg is held on the surface of earth, gravitational force of attraction between the body and earth is

(a) $6\text{-}67 \times 10^{-11}$ N (b) 9.8 N (c) 6.67×10^{11} N (d) None of these

19. If mass of earth is 6×10^{24} kg and mass of moon is 7.4×10^{22} kg, the gravitational force between earth and moon is (Given distance of moon from earth: 3.84×10^{8}m)

(a) 9.8 N (b) 9.8×10^{3} N (c) 2.01×10^{20} N (d) none of the above

20. Gravitational force between two objects is F. How will the force change when distance between them is reduced to half?

(a) 4 F (b) 2 F (c) F/4 (d) F/2

CHEMISTRY

MCQ

1. In which of the following substances, the inter-particle forces of attraction are the strongest ? 1
(a) Sodium chloride (b) Glycerine (c) Ethyl alcohol (d) Carbon dioxide

2. Which of the following generalizations cannot be made about the phase change of a pure substance from solid to liquid? 1

(a) It involves a change in potential energy. (b) It involves a change in kinetic energy.

(c) It involves no change in temperature

(d) It may take place at different temperatures for different compounds.

3. Which of the following indicates the relative randomness of particles in the three states of matter? 1

(a) solid > liquid > gas (b) liquid < solid < gas

(c) liquid > gas > solid (d) gas > liquid > solid

4. Which of the following is a heterogeneous mixture? 1

(a) Dust free air (b) Brass (c) Iodised salt (d) ~~Steel~~ Smog

5. Which of the following is not a compound ? 1

(a) Marble (b) Washing soda (c) Quick lime (d) Brass

6. Scattering of light occurs when a beam of light is passed through 1

(a) Blood (b) Water (c) Copper sulphate solution (d) Brine

7. 7g of iron filings and 4g of sulphur powder were thoroughly mixed together. The material w
divided into two groups of students A and B. A was told to heat the mixture. Answer the follo

i. What are the observation if both the groups were told to add dil H_2SO_4 to it.

ii. What will be observed by each group when CS_2 solution is added.

iii. What will be observed when a magnet is placed above the material by each group.

iv. Which gas is observed by group "A". What are the characteristics of the gas. 2

8. Calculate the mass of a salt required to prepare its 40% solution in 100g of water. 2

9. What are the characteristics of particles of matter? 2

10. A beaker containing hot water at a temperature of 50°C is placed in a freezing (ice -salt) mixture, (temp < 0°C). The contents of the beaker were constantly stirred and the temperature measured after regular intervals of time. Draw the graph between change in temperature as a function of time to form ice at -15°C. Label the various regions of the graph. 3

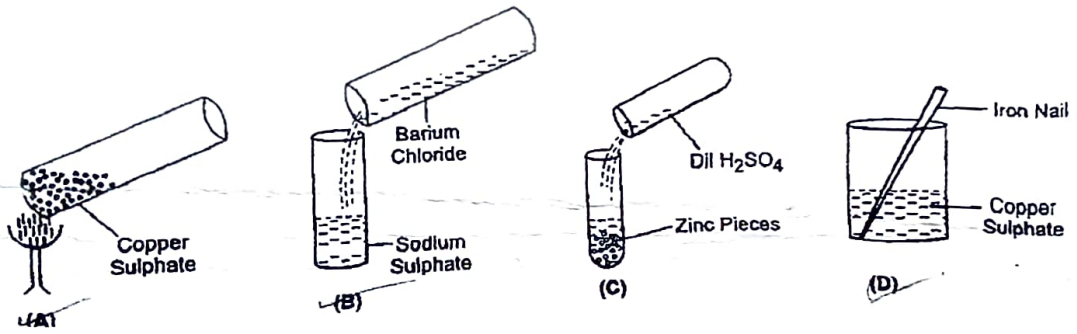
11. Give examples. 3

a. Aqueous and non-aqueous solution.

b. Solid sol and solid foam

c. Two e.g. of metalloids.

12. Observe the following reactions. 4



Predict the product/s in each reaction and write one observation each.

The solubility of four different substances at different temperatures is given in the following table :

	283 K	293 K	313 K	333 K	353 K
Substance dissolved	**Solubility**				
A	22	33	63	104	166
B	37	37	37	38	38
C	36	37	41	45	53
D	25	38	42	54	64

Answer the following questions on the basis of the data given above. 4

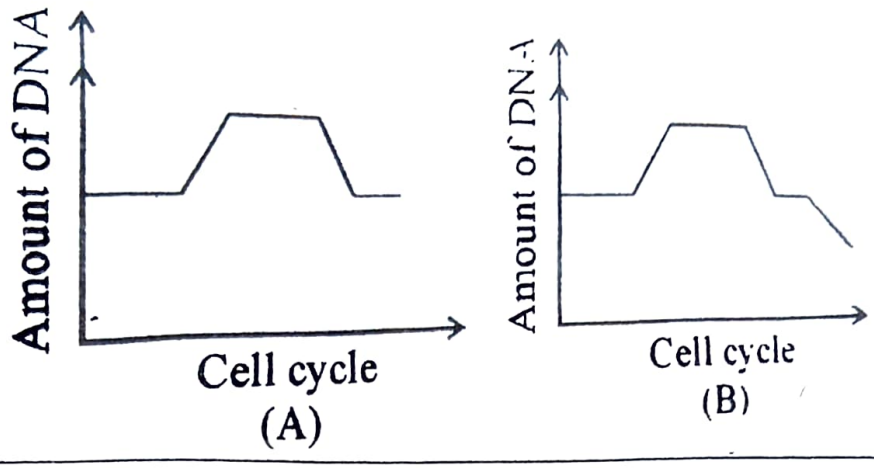
i. What mass of A would be required to produce its saturated solution in 50 grams of water at 313 K?

ii. A student prepares a saturated solution of C in 100 of water at 353 K and then cools it to room temperature?

iii. On the solubility of which salt the effect of temperature is maximum?

iv. A saturated solution of the salt C in 100 g of water was prepared at 333 K and then it was cooled to 293 K. What mass of the salt would reappear?

CCT BASED Question (4)



1. The above graphs (A and B) depicts changes in DNA Content during cell cycle. Identify the cell division from A and B

   a. A→Meiosis-II. B→Meiosis-I
   b. A→Mitosis, B→Meiosis-II
   c. A→Meiosis-I. B→Mitosis
   d. A→Mitosis, B→Meiosis-1

2. Which of the events listed below is not observed during mitosis?

   a. Chromatin condensation
   b. Movement of centrioles to opposite poles
   c. Appearance of chromosomes with two chromatids joined together at the centromere.
   d. Crossing over

3. What is the proper sequence in mitosis?

   a. Anaphase, metaphase, telophase and prophase
   b. Telophase, anaphase, metaphase and prophase
   c. Prophase, metaphase, anaphase and telophase
   d. Metaphase, telophase, prophase and anaphase

4. Meiosis is found at

   a. Shoot apex
   b. Reproductive part
   c. Leaves bud
   d. Vegetative parts

II. Answer the following Questions: (3 marks each)

1. Identify the tissue. Give its location. Label the part marked A. (3)

2. 1. Name the tissue (3)

   a. located in leaf stalks below the epidermis.

   b. that causes involuntary movement & found in the iris of the eye, in ureters and in the bronchi of the lungs.

   c. that has a solid matrix composed of proteins and sugars.

3. Draw a neat and well labelled diagram of the section of the striated muscular tissue. Give one function of this tissue. (3)

4. Give reasons: (3)

   a. Lysosomes are called the suicide bags

   b. Aerenchyma tissue has air spaces between the cells.

   c. Companion cells are so called.

5. Give the functions of the following: (3)

   a. Cuboidal epithelial tissue

   b. Ribosomes

   c. Adipose tissue

III. ASSERTION AND REASONING (1 mark each 3X1=3)

DIRECTION : In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

(c) Assertion (A) is true but reason (R) is false.

(d) Assertion (A) is false but reason (R) is true.

Assertion : Meristematic tissues constitute the major portion of the plant body.
Reason : Meristematic tissues consist of differentiated cells.

2. Assertion : Mitochondria and chloroplasts are semiautonomous organelles
Reason : They are formed by division of pre-existing organelles and contain DNA but lack protein synthesizing machinery.

3. Assertion: Lateral meristems add thickness of plants.
Reason : Lateral meristems are located on the sides of the stem. (a)

IV. Answer the following Question: (5)

1. Give a term for the following:

a. The process during which young, immature unspecialized cells take on individual characteristics and take up a specific form and function.

b. The process of contraction or shrinkage of the protoplasm of a plant cell when it is placed in a hypertonic solution. Plasmolysis

c. The ingestion of large particles (such as bacteria) and the uptake of fluids or macromolecules in small vesicles by the cell. Endocytosis

d. Transfer of electric chemical signals along the neurons.

e. Energy currency in the cell. mitochondria