MID TERM EXAMINATION 2017 - 18
CLASS IX
SCIENCE

Time: 3 hours   MM: 80

General Instructions:

1.   This question paper consists of two sections - Section 'A' and Section 'B'
2.   Section 'A': Q1 - Q2 are of 1 mark each, Q3 - Q5 are of 2 marks each, Q6 - Q15 are of 3 marks each and Q16 - Q21 are of 5 marks each.
3.   Section 'B' consists of practical based Questions from Q22 to Q27 of 2 marks each.

SECTION - 'A'

1.   Name two finned fishes farmed in sea water.   (1)

2.   2.8g of nitrogen gas is allowed to react with 0.6g of hydrogen gas to   (1)
      produce 3.4g of ammonia. Show that these observations are in agreement
      with law of conservation of mass.

3.   Give reason for: (2)
      a)   On a hot humid day, people perspire a lot.
      b)   Evaporation is a surface phenomenon.

4.   Rohit travels along a straight road 500 m long and returns back 100 m. Find   (2)
      his average speed and average velocity if the time taken by him is
      30 minutes.

5.   How is the structure of nuclear membrane related to its function?   (2)

6.   Name the process associated with the following: (3)

      i)   Dry ice is kept at room temperature and at one atmospheric pressure

      ii)   A potassium permanganate crystal is in a beaker and water is
             poured into the beaker with stirring

      iii)   Milk is churned to separate cream from it

      iv)   Settling of sand when a mixture of sand and water is left
             undisturbed for some time.

      v)   An acetone bottle is left open and the bottle becomes empty.

      vi)   Fine beam of light entering through a small hole in a dark room
             illuminates the particles in it path.

7.   Pratibha got hurt while playing. Her friend Kavita took her to the chemistry   (3)
      lab. She dissolved iodine in alcohol land applied it on the wound. Pratibha
      got relief and thanked Kavita. The teacher appreciated Kavita.

i) What values are associated with kavita?

ii) What is iodine dissolved in alcohol called?

iii) What is its use?

8. A) What is the principle of crystallization? (3)
B) Why is crystallization a better technique than evaporation?

OR

A) What is chromatography?
B) List two of its applications.

9. Why mitochondria are called strange organelles? What is the implication of (3)
the same?

10. Differentiate between manures and fertilizers. (3)

OR

What factors may be responsible for losses of grains during storage?

11. What does animal feed for dairy animals consist of? (Write 3 points) (3)

12. (a) There are three solids made of aluminium, steel and wood, of the same (3)
shape and same volume. Which one of them would have highest inertia?
Give reason.

(b) Why a cricket player lowers his hand gradually while catching a fast
moving ball?

13. (a) A car accelerates uniformly at the rate of 2 m/s^2 starting from rest. Find (3)
the distance travelled and velocity attained in 4 seconds.

(b) Show a uniformly accelerated motion on a velocity-time graph.

14. (a) Give two differences between mass and weight. (3)

(b) How does the gravitational force between two objects change when the
distance between them is reduced to half? (Show calculations)

15. (a) An object is moving along a circular path in a uniform circular motion. (3)
Which one of the following physical quantities would remain constant during
its motion:

Momentum, Speed, Velocity and Acceleration.

(b) Define uniform motion.

(c) What can you say about the acceleration of an object if its velocity-time
graph is a straight line parallel to time axis. What does the area under the
velocity-time graph represent?

16. (a) Derive the expression for acceleration due to gravity. (5)

(b) What is free fall?

(c) A block of plastic is immersed under water.

   (i) Identify the two main forces acting on the block.

   (ii) Why does this block of plastic come up to the surface of water when released?

17. (a) State Newton's second Law of motion. Derive the relation between force (5) and acceleration.

(b) A motor car is moving with a velocity of 144 km/hr and it takes 4 second to stop after the brakes are applied. Calculate the force exerted by the brakes on the motor car if the mass along with the passengers is 1200 kg.

OR

(a) Write the SI unit of momentum.

(b) State the law of conservation of momentum.

(c) From a rifle of mass 4 kg, a bullet of mass 50 g is fired with a velocity of 100 m/s. Calculate the recoil velocity of the rifle.

18. a) Diagrammatically differentiate between three types of muscle fibers. (5)

b) Which property of nervous tissue helps it to transfer messages across the body?

19. (a) What is the basis for Whittaker's classification? (5)

(b) An organism as seen under the electron microscope shows cilia all around its body and has a macronucleus and a micronucleus. Which organism is this? To which Kingdom does it belong? Write two identifying features of this kingdom.

20. (A).When 5g of calcium is burnt in 2g of oxygen then 7g of calcium oxide is (5) produced. What mass of calcium oxide will be produced when 5g of calcium is burnt in 20g of oxygen?

   i) Which law of chemical combination will govern your answer?
   ii) State the law.

B. Give the Latin names and symbols of:

   (i) sodium   (ii) mercury   (iii) silver   (iv) potassium

C. Hydrogen and oxygen combine in the ratio of 1:8 by mass to form water. What mass of oxygen will be used up for combustion of 5g of hydrogen gas?

21. (a) A solution is prepared by adding 40g of sugar to 100g of water. (5) Calculate its concentration in terms of mass by mass percentage.

(b) Draw a neat labeled diagram to show the process of separation of alcohol(boiling point 78ºC) and water (boiling point 100ºC).

SECTION 'B' (PRACTICAL BASED QUESTIONS)

22. Anushka and Ankita carried out an experiment to determine the density of (2) copper using spring balance and measuring cylinder. Anushka took a copper block of mass 'm' and Ankita took the copper block of mass '2m'.

(a) How does the density of copper obtained by Anushka related to the density of copper obtained by Ankita?

(b) Write the mathematical expression for calculating the density of an object.

23. A solid is first immersed in tap water and then in strong salty water. In which (2) case one will observe loss in weight more and why?

24. In a light microscope, the power of eyepiece lens is 10X and that of (2) objective lens is 45X. What is the total magnification for an object under this microscope?

25. Rahul saw a plant in his school premises. The plant did not have any (2) seeds. He identified it as a monocot plant. How could he identify the plant without seeds? Write any two points.

26. (A)Name the gas produced when a mixture of 7g of iron filings and 4g of (2) sulphur powder is treated with sulphuric acid H_2SO_4 at room temperature.

(B)What gas would be produced if the same mixture is first heated, cooled and then treated with dilute sulphuric acid?

(C) State the cause of this difference in behaviour

27. (a)How will you show hydrogen gas is released when dil. H_2SO_4 is added to (2) zinc granules?

(b) What type of change is it?

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