MODEL QUESTION PAPER

CLASS – IX **SUBJECT -- SCIENCE**

General instructions

1. **All questions are compulsory**
2. **Marks are indicated against each question**

SECTION A

1) The chemical molecule not involve in formation of plasma membrane [1]

a) protein b) lipid c) Glycolipid d) Starch

2) Which one is not related to production of food item [1]

a) Pisciculture b) agriculture c) sericulture d) apiculture

3) One major difference between broiler and egg layer is [1]

a) egg layer need low temperature than broiler

b) egg layer is generally male while broiler is generally female

c) egg layer is always female while broiler is generally male

d) broiler need calcium rich diet while egg layer do not need special diet

4) Adipose tissue found in [1]

a) only plant body b) only animal body

c) both plant and animal body d) neither plant nor animal body

5) Choose the correct statement about elephantiasis. [1]

a) It is caused due to virus. b) the pathogen is a worm which found in lymphatic vessels.

c) caused due to bacterial infection in which legs swell. d) It is a respiratory disorder.

6) If a particle covers equal distances in equal time intervals, it is said to [1]

(a) be at rest (b) move with a uniform speed

(c) amore with a uniform velocity (d) move with a uniform acceleration

7) The area under a graph between two quantities is given in the unit m/s. The quantities are [1]

(a) speed and time (b) distance and time

(c) acceleration of a particle (d) velocity and time

8) When a stone tied to a string is whirled in a circle, the work done on it by the string is [1]

(a) positive (b) negative (c) zero (d) undefined

9) Who was the first to propose atomic theory? [1]

a) J. J. Thomsom b) John Dalton c) E. Rutherford d) Neils Bohr

10) The Chemical symbol for nitrogen gas is [1]

a) Ni b) N 2 c) N + d) N

11) An atom with 3 protons and 4 neutrons will have a valency of - [1]

a) 3 b) 7 c) 1 d) 4

12) Give an example of such a situation, when the acceleration is acting on a bogy but the velocity is

zero. [1]

13) Which one the following has maximum number of atoms? [1]

a) 18 g of H 2 O b) 18 g of O 2 c) 18 g of CO 2 d) 18 g of CH 4

14) Which one of the following is correct representation of electronic configuration of Mg atom? [1]

a) 3, 8, 1 b) 2, 8, 2 c) 8, 2, 2 d) 1, 8, 3

15) Find the number of atoms found in sodium bicarbonate. [1]

Questions number 16 to 20 consists of two statements - Assertion (A) and Reason (R). Answer the question

selecting the options given below

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

(b) Both A and R are true and R is not the correct explanation of A

(c) A is true but R is false

(d) A is false but R is true

16) 'A' – A boatman pushes the river bank with a bamboo pole to take his boat into the river.

'R' – Action and reaction are equal and opposite and act on different bodies. [1]

17) 'A' – Lactation period is the period before birth of a calf.

'R' – There is maximum milk production during lactation period. [1]

18) 'A' – When a resin or any seed kept in water, it swell up.

'R' – Water make isotonic solution and create difference in concentration level. [1]

19) 'A' – particles of a colloidal solution do not settle down when left undisturbed.

'R' – Suspension cough syrup need to shake well before use. [1]

20) 'A' – Osmosis is a special kind of diffusion.

'R' – Spreading of smell of cake being baked throughout the house is due to osmosis. [1]

SECTION - B

21) Give one similarity and one different between mitochondria and chloroplast. [2]

OR

With the help of suitable diagram, show the location of meristematic tissues in plant body.

22) Name the following [1/2 x 4 = 2]

a) Control room of the cell b) Kitchen of the cell

c) Digestion bag of cell d) Plastids involved in conversion of green tomato to red.

23) What type of tissue present in - [1/2 x 4 = 2]

a) Husk of coconut b) Our heart c) Joints of muscle and bone d) Edible pulp of mango

24) Why it is difficult to make antiviral drugs? [3]

25) What is pasturage? How is it related to honey production? [3]

26) Different between (Any four)- [2 x 2 = 4]

a) Epidemic disease and Endemic disease b) Congenital disease and acquired disease

c) Simple squamous epithelium and simple columnar epithelium

d) Endosmosis and exosmosis e) composite fish culture and mariculture

27) Some sixteen inorganic nutrients are essential for plant growth, development and reproduction. Nine of

them are required in larger amounts. They are called macronutrients. Seven of the sixteen essential

nutrients / elements are needed in smaller quantities. They are called micronutrients. All the micronutrients

are provided by soil. Out of the nine macronutrients, soil is the source of six while other three are obtained

from air and water.

a) Differentiate between micronutrient and macronutrient.

b) How are minerals replenished after being picked up and used by plants?

c) Give one example of each – micronutrient and macronutrient. [2+1+1+1=5]

28) Why does a cricket player moves his hand backward while catching the ball ? [2]

29) what is buoyant force? Write the factors on which it depends. [2]

30) what is potential energy? Write the expression for it. [2]

SECTION - C

31) The wavelength of waves produced on the surface of water is 20 cm. If wave velocity 24 m/s, calculate [3]

(a) the number of waves produced in one second (b) the time required to produce one wave.

32) With the help of the graph, derive the relation - $S = ut + 1/2\ at^2$. Here the terms have their usual meaning. [3]

33) (a). Define acceleration due to gravity. Derive an expression for acceleration due to gravity.

(b). A ball is thrown vertically upwards with a velocity of 49 m/s. Calculate

(i) the maximum height to which it rises.

(ii) the total time it takes to return to the surface of the earth. [3 + 2 = 5]

34) Sports and Second Law- [1 x 4 = 4]

You might know that it is easier to catch a fast moving cricket ball by pulling back your arms while

taking the catch. This allows you to catch the ball by applying a small force on it. If you keep your

arms still as you catch the ball, you have to apply a much larger force on the ball. The duration for

which the forces are applied are also different in the two cases. When you full your arms back with

the ball, you apply a smaller force for a longer time. This is because the ball stops completely when

your hands stop. In the second case, the ball stops almost immediately as it hits your still hands. You

have to apply a larger force for a lesser time.

Now give the answer of the following questions-

i) A goalkeeper in a game of football pulls his hands backwards after holding the ball shot at the

goal. This enables the goalkeeper to

a) Exert larger force on the ball b) Reduce the force exerted by the ball on hands

c) Increase the rate of change of momentum d) Decrease the rate of change of momentum

ii) According to second law of motion

a) Rate of charge of acceleration is directly proportional to force

b) Rate of change of linear momentum is directly proportional to force

c) Rate of change of velocity is directly proportional to force

d) None of these

iii) Momentum of a body of mass m moving with velocity v is

a) ½ mv (b)1/2 mv^2 (c) mv (d) mv^2

iv) An object of mass 1 kg is moving with a constant velocity of 2m/s on a frictionless table. The

force required to keep the object moving with the same velocity is

(a) 16 N (b) 0 N (c) 2N (d) 1N

35) Is it possible for the atom of an element to have one electron, one proton and no neutron? If so, name the

element with symbol. [2]

36) Show diagrammatically the electron distribution in a sodium atom and a sodium ion and also give their

atomic number. [2]

37) Convert into mole [3]

a) 12 g of Oxygen gas b) 20 g of water c) 6.022 x 10^{24} atoms of Nitrogen

38) If bromine atom is available in the form of say, two isotopes, 35 Br 79 (49.74 %) and 35 Br 81 (50.3 %), calculate the

average atomic mass of bromine atom. [3]

39) Explain with example -

i) Atomic number ii) Mass number iii) Isotopes iv) Isobars

Identify element X and give detail information about 11 X 23 . [5]

40) **What is the mass of:**
(a) 1 mole of nitrogen atoms ?
(b) 4 moles of aluminium atoms (Atomic mass of aluminium = 27) ?

(C) 10 moles of sodium sulphite (Na_2SO_3) ?