CLASS 9TH

FULL SYLLABUS TEST - 02

GENERAL INSTRUCTION

Maximum Marks = 80 Marks

Maximum Time = 180 minutes

Syllabus Covered : Full Syllabus of Class 9 Mathematics NCERT

1. This question paper has 5 sections A – E.
2. Section A has 20 MCQs carrying 1 marks each.
3. Section B has 5 questions carrying 02 marks each.
4. Section C has 6 questions carrying 03 marks each.
5. Section D has 4 questions carrying 05 marks each.
6. Section E has 3 case based question 04 marks each.
7. All questions are compulsory.
8. Draw neat figures wherever required. Take π = 22/7 whereever required if not stated.

Section A

1. Match the following with the correct response:-

(1) Element	(A) Sugar
(2) Compound	(B) Mercury
(3) Mixture	(C) Salt solution
(4) Liquid element	(D) Gold

a) 1-B, 2-D, 3-A, 4-C

b) 1-D, 2-A, 3-C, 4-B

c) 1-C, 2-B, 3-D, 4-A

d) 1-A, 2-C, 3-B, 4-D

2. The most abundant material on the plant cell wall is:

a) proteins

b) lipids

c) wax

d) cellulose

P.T.O

3. Area under a v - t graph represents a physical quantity which has the unit

a) ms^{-1} b) m^2

c) m d) m^3

4. Animal husbandry is the scientific management of

i. animal breeding

ii. culture of animals

iii. animal livestock

iv. rearing of animals

a) (ii), (iii) and (iv) b) (i), (ii) and (iv)

c) (i), (iii) and (iv) d) (i), (ii) and (iii)

5. Survival of plants in terrestrial environment has been made possible by the presence of

a) conducting tissue b) apical meristem

c) parenchymatos tissue d) intercalary meristem

6. The structure which forms a barrier between the protoplasm of the cell and its external environment in an animal cell is:

a) plasma membrane b) cell coat

c) cell wall d) mucilage

7. Calculate the formula unit mass of $ZnCl_2$? (nearest approximation)

a) 111 u b) 123 u

c) 124 u d) 137 u

8. To prepare a mount of human cheek cell, the sample is collected from:

a) outer side of cheek with a blade b) inner side of cheek with a toothpick

c) inner side of cheek with a blade d) outer side of cheek with a toothpick

9. An object weights 10 N in air. When immersed fully in water, it weighs only 8 N. The weight of the liquid displaced by the object will be

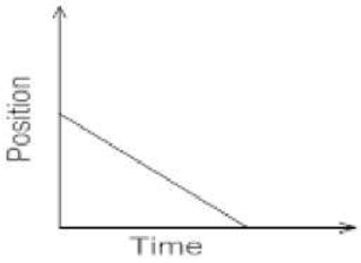
a) 12 N b) 8 N

c) 2 N d) 10 N

P.T.O

10. Which of the following is the position-time graph for a body at rest?

a)



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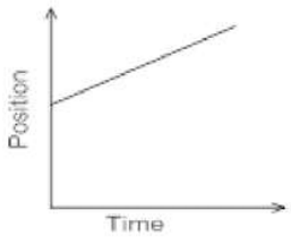

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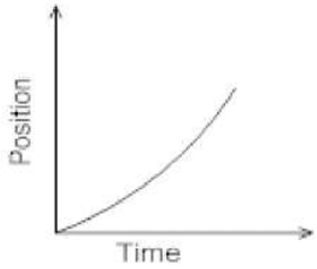
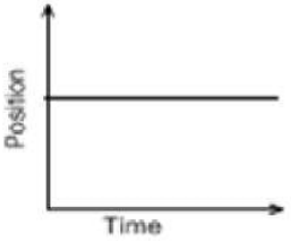


d)



11. Following are a few definitions of osmosis read carefully and select the correct definition.

a) Movement of solvent molecules from its higher concentration to lower concentration

b) Movement of solvent molecules from higher concentration to lower concentration of solution through a permeable membrane

c) Movement of solute molecules from lower concentration to higher concentration of solution through a semipermeable membrane

d) Movement of water molecules from a region of higher concentration to a region of lower concentration through a semipermeable membrane

12. The cells enclosing the stoma are called _____ cells.

a) cambial

b) guard

c) subsidiary

d) epidermal

13. Viruses do not show any characteristic of living until they enter a living cell, because of the absence of:

a) membrane

b) mitochondria

c) nucleic acid

d) proteins

14. Chromosomes are made up of

a) RNA

b) DNA

c) DNA and protein

d) Protein

15. A given solid is weighted in air using a spring balance. It is then weighed separately by immersing it fully first in vessel containing tap water and then in a vessel containing salt solution. The reading of the spring balance would be:

a) least in water
b) equal in all the three cases
c) least in air
d) least in salt solution

16. When a body moves uniformly along the circle, then:-

a) its speed changes but velocity remain the same
b) both speed and velocity changes
c) both speed and velocity remain the same.
d) its velocity changes but speed remain the same

17. **Assertion (A):** The bus travels 250 km from Delhi to Jaipur towards the West and then comes back to the starting point. Total displacement is zero.

Reason (R): The average velocity of the bus for the whole journey (both ways) is 0 kilometers per hour.

a) Both A and R are true and R is the 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.

18. **Assertion (A):** The term vapour is used to represent the gaseous state of a substance that is otherwise liquid at room temperature.

Reason (R): It is proper to regard the gaseous state of ammonia as vapours.

a) Both A and R are true and R is the 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.

19. **Assertion (A):** Epidermal cells on the aerial parts of the plant often secrete a waxy, water-resistant layer on their outer surface.

Reason (R): This aids in protection against loss of water, mechanical injury, and invasion by parasitic fungi.

a) Both A and R are true and R is the 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.

P.T.O

20. **Assertion (A):** Electrons moving in the same orbit will lose or gain energy.

Reason (R): On jumping from higher to lower energy level, the electron will gain energy.

a) Both A and R are true and R is the 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.

Section B

21. A ball is dropped from a height of 10 m. If the energy of the ball reduces by 40 per cent after striking the ground, how high can the ball bounce back? ($g = 10\ ms^{-2}$)

OR

Give reason : Ice bergs floating in the sea are dangerous for the ship.

22. How will you demonstrate that air contains water vapours?

23. A wave is moving in the air with a velocity of 340 m/s. Calculate the wavelength if its frequency is 512 Hz.

24. What are the characteristics of the particles of matter.

25. An object of mass 1 kg travelling in a straight line with a velocity of 10 ms^{-1} collides with and sticks to a stationary wooden block of mass 5 kg. Then they both move off together in the same straight line. Calculate the total momentum just before the impact and just after the impact. Also, calculate the velocity of the combined object.

OR

Which of the following has more inertia:

a. a rubber ball and a stone of the same size?

b. a bicycle and a train?

c. a five-rupee coin and a one-rupee coin?

26. The relative atomic mass of copper is 63.5u. It exists as two isotopes which are $^{63}_{29}Cu$ and $^{65}_{29}Cu$. Calculate the percentage of each present in if.

Section C

27. Two children are at opposite ends of an aluminium rod. One strikes the end of the rod with a stone. Find the ratio of times taken by the sound wave in air and in aluminium to reach the second child.

[speed of sound in air = 344m/s ; speed of sound in aluminium = 6420m/s]

28. In the following table, the mass numbers and the atomic numbers of certain elements are given.

Element	A	B	C	D	E
Mass no.	1	7	14	40	40
At. no.	1	3	17	18	20

i. Select a pair of isobars from the above table.

ii. What would be the valency of element C listed in the above table?

29. State which of the following situations are possible and give an example for each of these. **[3]**

(a) An object moving with a constant acceleration but with zero velocity

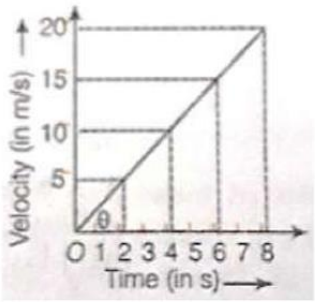
(b) An object moving in a certain direction with an acceleration in the perpendicular direction.

OR

A stone is thrown in a vertically upward direction with a velocity of 5 ms^{-1}. If the acceleration of the stone during its motion is 10 ms^{-2}in the downward direction, what will be the height attained by the stone and how much time will it take to reach there?

30. An automobile engine propels a 1,000 kg car A along a levelled road at a speed of 36 km h^{-1}. Find the power if the opposing frictional force is 100 N. Now, suppose after travelling a distance of 200 m, this car collides with another stationary car B of same mass and comes to rest. Let its engine also stop at the same time. Now, car B starts moving on the same level road without getting its engine started. Find the speed of the car B just after the collision. **[3]**

31. The motion of a body of mass 5 kg is shown in the velocity-time graph.



Find from the graph

i. The acceleration.

ii. The force acting on the body.

iii. The change in momentum of the body in 2 s after the start.

32. Differentiate between RER and SER

OR

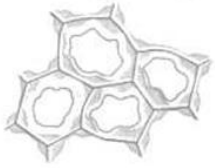
Differentiate between diffusion and osmosis. What is its importance?

33. i. Identify the tissue given in the following figure.

ii. Mention the characteristic features of the cells.

iii. Specify the function of this tissue.

iv. Name any one part of the plant, where these cells are present.



Section D

34. A stone is allowed to fall from the top of a tower 100 m high and at the same time another stone is projected vertically upwards from the ground with a velocity of 25 ms^{-1}. Calculate when and where the two stones will meet. **[5]**

OR

Define acceleration due to gravity. Derive an expression for acceleration due to gravity in terms of mass of the earth (M) and universal gravitational constant (G).

35. What are cell organelles? Write the names of different cell organelles. **[5]**

OR

i. Describe the role played by the lysosomes. Why are they termed as suicidal bags? How do they perform their function?

ii. What happens to the dry raisins, when placed in plain water for some time? State the reason for whatever is observed. What would happen if these raisins are then placed in concentrated salt solution?

36. Classify each of the following as a physical or a chemical change. Give reasons. **[5]**

i. Drying of a shirt in the sun.

ii. Rising of hot air over a radiator.

iii. Burning of kerosene in a lantern.

iv. Change in the colour of black tea on adding lemon juice to it.

v. Churning of milk cream to get butter.

Section E

37. **Read the text carefully and answer the questions:** **[4]**

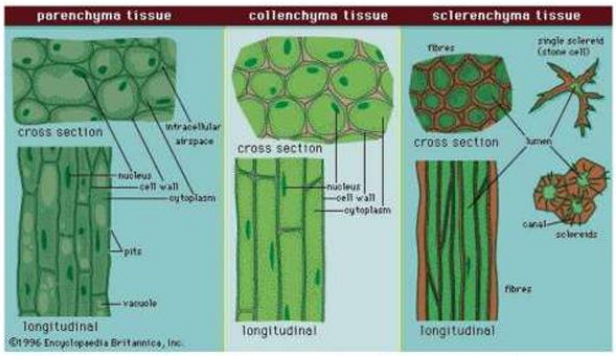
Permanent tissues are of two types that is Simple permanent tissues and Complex permanent tissues.

Simple permanent tissues subdivided as follows:

i. **Parenchyma:** Tissues provide support to plants. They are loosely packed and has large intracellular space. Parenchyma with chlorophyll which performs photosynthesis is called chlorenchyma.

ii. **Collenchyma:** Tissue are thickened at the corners, have very little intercellular space. It allows easy bending of various parts of a plant without breaking.

iii. **Sclerenchyma:** Cells of this tissue are dead and commonly seen in the husk of a coconut.



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(i) In which of the simple plant tissue, deposition of lignin is found? Also describe lignin.

(ii) Why is cork impervious to gases and water?

OR

Which type of tissue is present in the cortex of the root and veins of the leaves?

38. **Read the text carefully and answer the questions:** **[4]**

The practice of keeping or rearing, caring, and management of honey bee on a large scale for obtaining honey and wax is called apiculture. The place where bees are raised is called an apiary. Bee-keeping requires low investment and generates additional income, hence it is done by farmers along with agriculture.

Following are the Honey bee varieties that are used for bee-keeping as follows:

Indigenous varieties	**Exotic varieties**
Apis cerana indica (Indian bee)	Apis mellifera (Italian bee)
Apis dorsata (Rock bee), Apis florae (Little bee)	Apis adamsoni (South African bee)

(i) Why bee keeping should be done in good pasturage?

(ii) Does honey bee help in pollination? Which type of flowers attracts the honey bee?

(iii) Mention the products obtained from the honey bee.

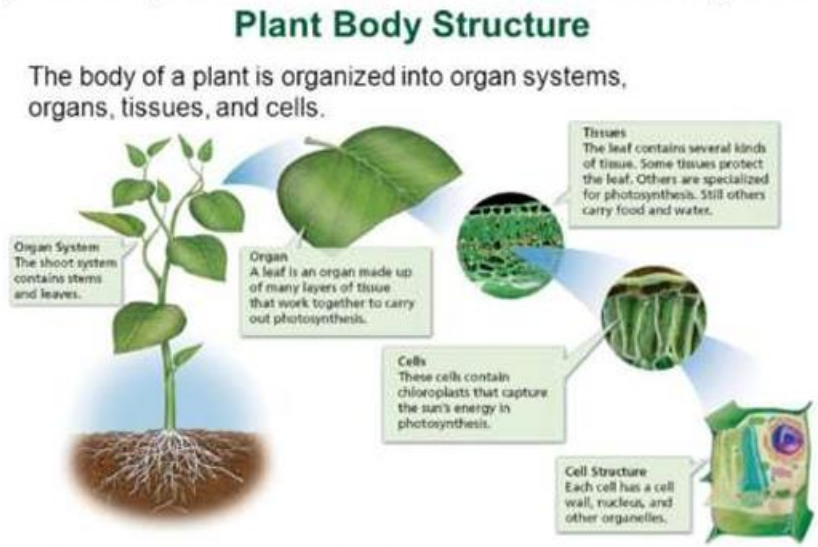
OR

What is the best season to start beehive?

39. **Read the text carefully and answer the questions:** **[4]**

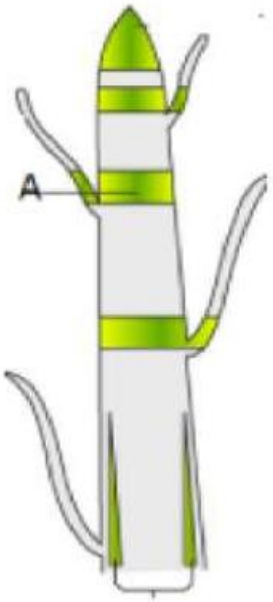
Plants are stationary or fixed they don't move. Since they have to be upright, they have a large quantity of supportive tissue. The supportive tissue generally has dead cells. Animals, on the other hand, move around in search of food, mates and shelter. Another difference between animals and plants is in the pattern of growth. The growth of plants occurs only in certain specific regions. New cells produced by meristem are initially like those of meristem itself, but as they grow and mature, their characteristics slowly change and they become differentiated as components of other tissues. The girth of the stem or root increases due to lateral meristem (cambium). Cells of meristematic tissue are very active, lack vacuoles.

P.T.O



(i) Is meristematic tissue composed of a single type of cell?

(ii) Identify A in the given figure



OR

Which meristematic is present at the growing tips of stems and roots?