

# Science

## Sample Question Paper 1 (Class 9) (Term – 1) (Session 2021-22)

Time: 1 hour 30 minutes

Number of Questions: 50

### General Instructions

1. The Question Paper contains three sections.
2. Section A has 24 questions, Attempt any 20 questions.
3. Section B has 24 questions, Attempt any 20 questions.
4. Section C has 12 questions, Attempt any 10 questions.
5. All questions carry equal marks.
6. There is no negative marking.

### SECTION – A

**Section - A consists of 24 questions. Attempt any 20 questions from this section.**

*The first attempted 20 questions would be evaluated.*

1. Which of the following is a pure substance?

- [A] Air
- [C] Steel

- [B] Distilled water
- [D] Brass

2. The element "x" having atomic number 16 is

- [A] A metal
- [C] A non-metal

- [B] A metalloid
- [D] None of these

3. Which of the following compounds contains only nonmetals?

- [A] Ammonia
- [C] Quicklime

- [B] Rust
- [D] Sodium chloride

4. Which of the following is an example of homogeneous mixture?

- [A] Polluted air
- [C] Salt solution

- [B] Muddy water
- [D] None of these

5. Girth of stem increase due to

- [A] Apical meristem
- [C] Intercalary meristem

- [B] Lateral meristem
- [D] Vertical meristem

6. Meristematic tissues is classified as apical, lateral and intercalary on the basis of shape:

- [A] True
- [C] Can't say

- [B] False
- [D] Partially True, Partially False

7. Flexibility in plants is due to

- [A] Collenchyma
- [C] Parenchyma

- [B] Sclerenchyma
- [D] Chlorenchyma

8. The husk of coconut is made up of –

- [A] Sclerenchyma
- [B] Parenchyma
- [C] Collenchyma
- [D] Chlorenchyma



9. Which cell does not have perforated cell wall?

- [A] Tracheids
- [C] Sieve tubes

- [B] Companion cells
- [D] Vessels

10. The dead element present in the phloem is-

- [A] Companion cells
- [C] Phloem parenchyma

- [B] Phloem Cells
- [D] Sieve Tubes

11. The living cells were discovered by

- [A] Robert Hooke
- [C] Leeuwenhoek

- [B] Purkinje
- [D] Robert Brown

12. The cell theory was further explained by Virchow:

- [A] True
- [C] Can't Say

- [B] False
- [D] Partially true/false

13. The shape and size of cells are related to

- [A] Type of cell
- [C] Length of cell

- [B] Function of cell
- [D] Both [A] and [B]

14. Plasma membrane is called as

- [A] Selectively permeable
- [C] Impermeable

- [B] Permeable
- [D] Semipermeable

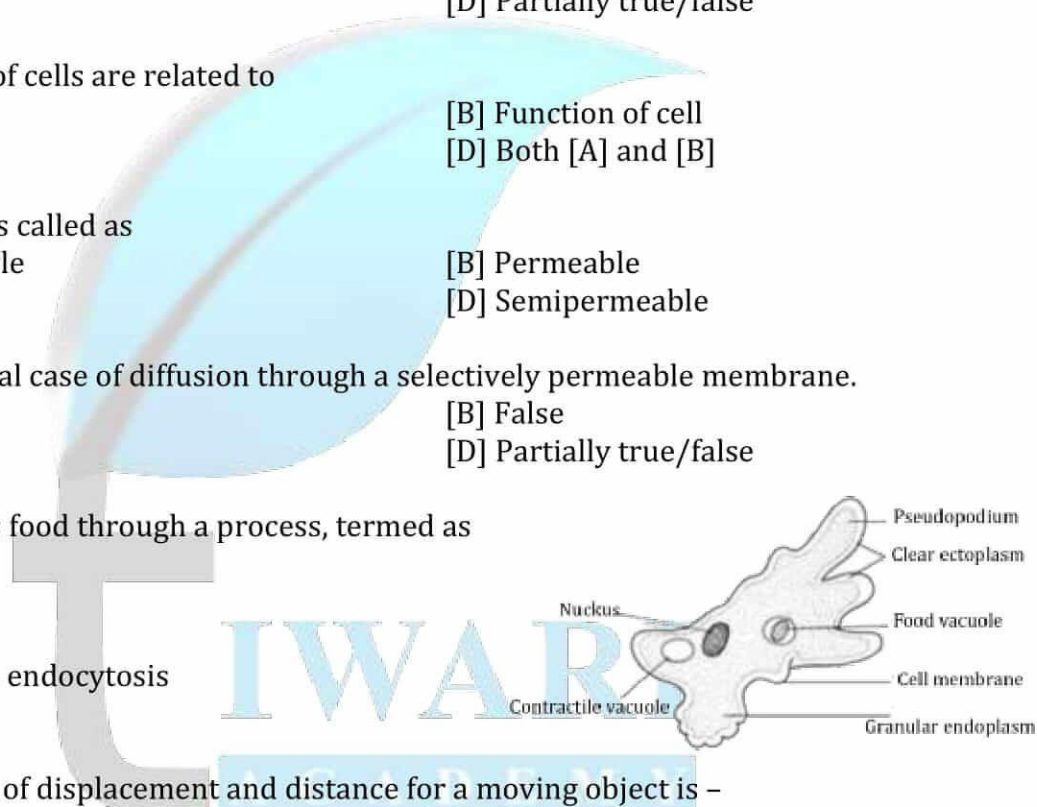
15. Osmosis is the special case of diffusion through a selectively permeable membrane.

- [A] True
- [C] Can't say

- [B] False
- [D] Partially true/false

16. Amoeba acquires its food through a process, termed as

- [A] Exocytosis
- [B] Endocytosis
- [C] Plasmolysis
- [D] Both exocytosis and endocytosis



17. The numerical ratio of displacement and distance for a moving object is -

- [A] Always less than 1
- [C] Always more than 1

- [B] Always equal to 1
- [D] Equal to or less than 1

18. Odometer measures \_\_\_\_\_ covered by the vehicles:

- [A] distance
- [C] frame of reference

- [B] displacement
- [D] reference point

19. What does the path of an object look like when it is in uniform motion?

- [A] Straight
- [C] Zig-zag

- [B] Curved
- [D] Circular

20. The ratio of magnitudes of average speed and average velocity is -

- [A] Always less than one
- [C] Always more than one

- [B] Always equal to one
- [D] Equal to or more than one

21. A force cannot change the speed of a moving object

[A] True

[C] Can't say

[B] False

[D] Partially true or false

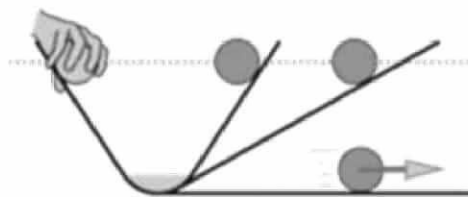
22. The inertia of a moving object depends on:

[A] Momentum of the object

[B] Speed of the object

[C] Mass of the object

[D] Shape of the object



23. A Heavy object will have more inertia than lighter one:

[A] True

[C] Can't say

[B] False

[D] Partially true or False

24. The quantity of motion in a body is also known as \_\_\_\_\_

[A] Momentum

[C] Speed

[B] Velocity

[D] Acceleration

### SECTION - B

**Section - B consists of 24 questions (Sl. No. 25 to 48). Attempt any 20 questions from this section.**

*The first attempted 20 questions would be evaluated.*

25. Magnitude of displacement is greater than the distance travelled by the object:

[A] True

[C] Can't say

[B] False

[D] Partially true/false

26. Speedometer is a device which is used to measure:

[A] Average speed

[B] Average acceleration

[C] Instantaneous speed

[D] Instantaneous acceleration

27. To specify the speed of an object, we require only .....

[A] Magnitudes

[C] Both [A] and [B]

[B] Direction

[D] None of the above

28. If velocity of an object decreases with time, then it is called:

[A] Retardation

[B] De - acceleration

[C] Negative acceleration

[D] All of the above

29. A particle cannot be accelerated if its \_\_\_\_\_ is constant:

[A] Speed

[C] Distance

[B] Velocity

[D] Displacement

30. The area under the velocity-time graph gives the value of:

[A] Distances

[C] Acceleration

[B] Displacement

[D] Speed



**Question No. 31 to 35 consists of two segments – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option 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**

31. Assertion (A): Gold, silver and bromine are the pure substances.

Reason (R): The metals and non-metals are the types of elements based on the variation in properties.

- [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.

32. Assertion (A): Water hyacinth can float on water surface.

Reason (R): Aerenchyma tissue is present in water hyacinth.

- [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.

33. Assertion (A): Robert Brown discovered nucleus.

Reason (R): Nucleoplasm and cytoplasm of a living cell together form the protoplasm.

- [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.

34. Assertion (A): Displacement of body may be zero, when distance travelled by it is not zero.

Reason (R): The displacement is the longer distance between initial and final positions.

- [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.

35. Assertion (A): No force is required by the body to remain in any state.

Reason (R): In uniform linear motion, acceleration has a finite value.

- [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.

36. Which of the following is considered to be a pure substance?

- |                     |                      |
|---------------------|----------------------|
| [A] Sodium chloride | [B] Muddy water      |
| [C] Granite         | [D] Milk of magnesia |

37. Which of the following is not a compound?

- |                     |               |
|---------------------|---------------|
| [A] Sodium chloride | [B] Germanium |
| [C] Water           | [D] Methane   |

38. The metal present in quicklime is lithium.

- [A] True
- [C] Can't say

- [B] False
- [D] Partially true/false

39. Meristematic tissues in plants are:

- [A] Localised and permanent
- [B] Not limited to certain regions
- [C] Localised and dividing cells
- [D] Growing in volume

40. Cells of intercalary meristem lacks:

- [A] Vacuoles
- [C] Cytoplasm
- [B] Nuclei
- [D] Cell wall

41. Parenchyma cells are:

- [A] Relatively unspecified and thin walled
- [C] Lignified
- [B] Thick walled and specialised
- [D] None of the above

42. The term "protoplasm" was coined by

- [A] Purkinje
- [C] Virchow
- [B] Robert Hooke
- [D] Robert Brown

43. The covering of the cell that separates the content of the cell from its external environment is called:

- [A] Cell wall
- [C] Cell membrane
- [B] Cytoplasm
- [D] Nucleus

44. The flexibility plasma membrane can be contributed to the presence of:

- [A] Proteins
- [C] Nucleic acids
- [B] Lipids
- [D] Both[a] and [b]

45. The resultant force acting on a body is zero, then

- [A] Body is not in equilibrium
- [B] Body is in equilibrium
- [C] Body moves with constant acceleration
- [D] Body moves with retardation.

46. A force cannot change the speed of a moving object.

- [A] True
- [B] False
- [C] Can't say
- [D] Partially true/false

47. A faster moving body has greater momentum than a slower one irrespective of their masses.

- [A] True
- [C] Can't say
- [B] False
- [D] Partially true/false

48. Which of the following is an example of colloidal solution?

- [A] Milk
- [C] Sugar in water
- [B] Urea
- [D] Common salt in water



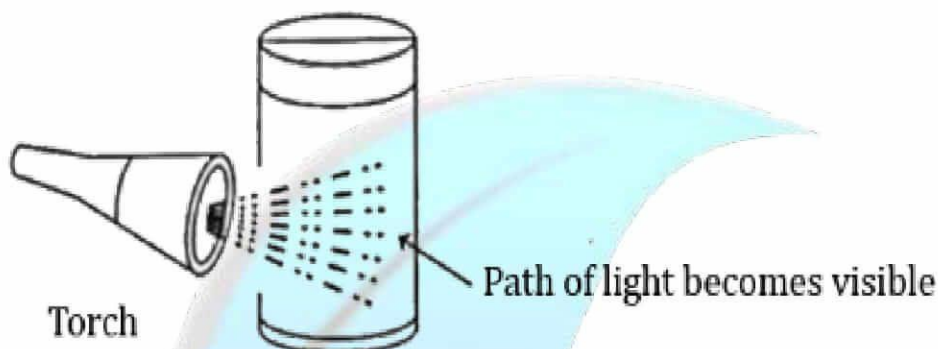
### SECTION – C

**Section - C consists of three Cases followed by questions. There are a total of 12 questions in this section. Attempt any 10 questions from this section.**

*The first attempted 10 questions would be evaluated.*

#### Case – 1:

The scattering of a beam of light by colloidal particles is called Tyndall effect. Due to scattering of light, the path of the light becomes visible. The source of light may be explored completely. The size of the scattering particles determines the colour of scattered light. The colloidal particles may be seen moving as points of light moving against a black backdrop. Ravi took some amount of substance X and add it into a transparent beaker containing water. He mixed the solution very well and then passed light through this solution by using a torch. The result observed by him is shown below:



Ravi wants to show this experiment to his younger brother. He kept the solution for 10 minutes and calls his brother and further repeat the experiment, but results are different at this time. The path is not visible.

49. What was the reason for change in result?

- [A] In first case, the path is visible because of the presence of impurities
- [B] In second case, the particles settle down
- [C] In second case, the concentration increases
- [D] In second case, the impurities dissolve in the solution

50. What is the nature of solution obtained, when X is added to water?

- [A] Colloid
- [B] True solution
- [C] Suspension
- [D] Data insufficient

51. Which of the following show Tyndall effect?

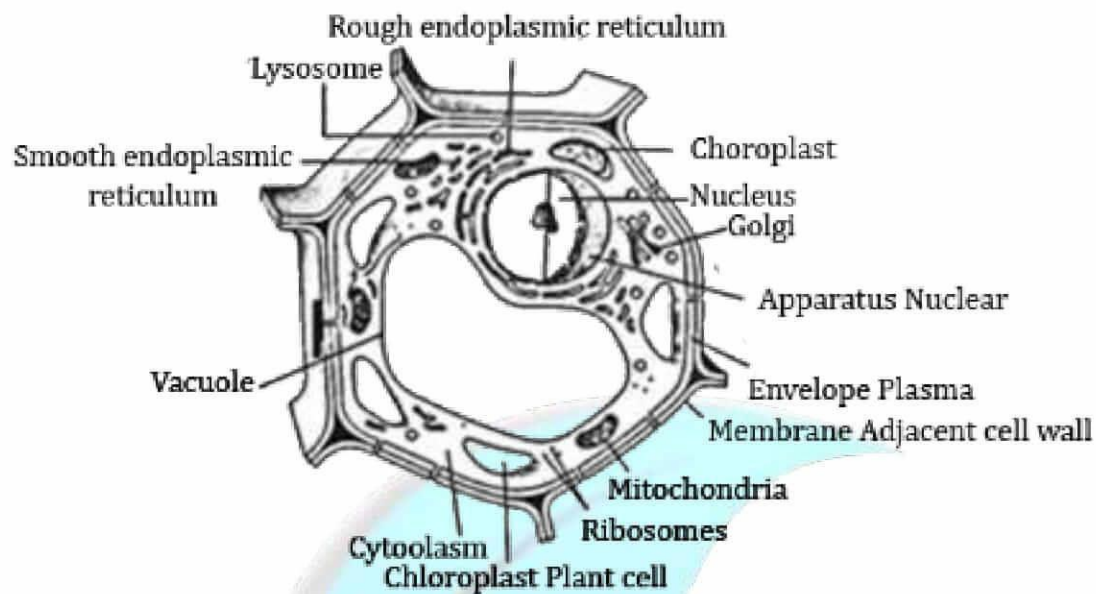
- [A] Sugar solution
- [B] Salt solution
- [C] Starch solution
- [D] Copper sulphate solution

52. When the light passes through the solution in this experiment, then

- [A] Scattering of light is observed
- [B] Path of light becomes visible
- [C] Tyndall effect is observed
- [D] All of the above

**Case – 2:**

All the living organisms are made up of cells. It is fundamental, structure and functional unit of life. The given diagram shows the plant cell.



53. On the basis of given diagram, answer the following question: Which of the following differentiate plant cells from animal cell?

- [A] Large vacuoles, plastid, and cell wall
- [B] Cell wall, plastid, and centriole
- [C] Cell wall, plastid, and mitochondria
- [D] Cell membrane, plastids, and cell wall

54. Chloroplasts found in plant cells

- [A] Are colourless plastids
- [B] Do not contained DNA
- [C] Are involved in storing of starch, oils and proteins
- [D] Contain various yellow or orange pigments

55. Choose the incorrect pair

- [A] Chloroplast-traps light energy
- [B] Leucoplast-stores nutrients
- [C] Chromoplasts-imparts colours to the plant
- [D] None of the above

56. The central vacuole of some plant cells may occupy of the cell volume:

- [A] 50-90%
- [B] 60-170%
- [C] 30-40%
- [D] 1-2%

**Case – 3:**

While catching a fast-moving Cricket ball, a fielder in the ground gradually puts his hands backwards with the moving ball. In doing so, the fielder increases the time during which the high velocity of the moving ball decreases to zero. Thus, the acceleration of the ball is decreased and therefore the impact of a catching the fast-moving ball (see figure) is also reduced.



A fielder pulls his hands gradually with the moving ball while holding a catch

If the ball is stopped suddenly then its high velocity decreases to zero in a very short interval of time. Thus, the rate of change of momentum of the ball will be large. Therefore, a large force would have to be applied for holding the catch that may hurt the palm of the fielder.

57. Why a fast-moving cricket ball can cause more injuries to a cricketer than a moving tennis ball?

- [A] Due to large force
- [B] Due to large velocity
- [C] Both [A] and [B]
- [D] None of the above

58. Momentum of a bullet of mass 0.2 kg moving at 400 m/s will be

- [A] 4 kg m/s
- [B] 80 kg m/s
- [C] 8 kg m/s
- [D] 40 kg m/s

59. The unit of measuring momentum of a moving body is:

- [A]  $\text{ms}^{-1}$
- [B]  $\text{kg}\cdot\text{ms}^{-1}$
- [C]  $\text{kg}\cdot\text{ms}^{-2}$
- [D]  $\text{N}\cdot\text{m}^2\text{kg}^{-2}$

60. If the mass of a body and the force acting on it are both doubled, what happens to the acceleration?

- [A] Doubled
- [B] Halved
- [C] Remains same
- [D] Becomes zero