Science

Sample Question Paper 5
(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.

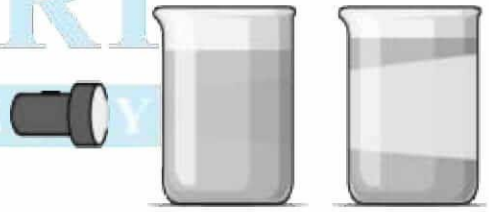
1. _____ is a heterogeneous mixture:
(A) Soda water.
(B) Sodium chloride solution.
(C) Oil-in-water.
(D) Copper sulphate solution.

2. Match the Column I with Column II and select the correct option below:

	Column I	Column II
A.	Substance consists of only a single type of constituent particles	Heterogeneous mixture
B.	Visible boundaries of separation between its constituents	Compound
C.	Constituent lose their properties	Mixture
D.	Chemical reaction does not take place during its formation	Metal

3. Air is regarded as mixture because:
(A) Its volume changes under different conditions.
(B) Its temperature main change.
(C) Its pressure may vary.
(D) Its composition may vary.

4. Which of the following will not show "Tyndall effect"?
(A) Smoke
(B) Foam
(C) Jelly
(D) Salt solution



5. Which of the following helps in repair of tissue and fills up the space inside the organ?
(A) Tendon
(B) Adipose tissue
(C) Areolar tissue
(D) Cartilage

6. The type of tissue lining of the nasal passage, bronchioles, and fallopian tube is:
(A) Cuboidal epithelium
(B) Ciliated columnar epithelium
(C) Stratified squamous epithelium
(D) Simple squamous epithelium.

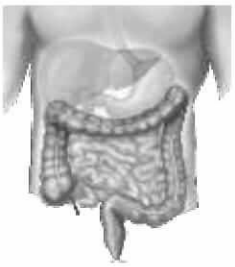
7. Choose the correctly matched pair:
(A) Inner lining of salivary ducts – ciliated epithelium.
(B) Moist surface of buccal cavity – glandular epithelium.
(C) Tubular parts of nephrons – cuboidal epithelium.
(D) Inner surface of bronchioles – squamous epithelium.

8. Match the following columns:

	Column I	Column II
A.	Simple squamous epithelium	Arranged in layers
B.	Stratified squamous epithelium	Cube shaped cells
C.	Columnar epithelium	Thin and flat cells
D.	Cuboidal epithelium	Pillar like cells

9. Endoplasmic reticulum is the site for energy generation:
(A) True
(B) False
(C) Can't say
(D) Partially true or false

10. Intestine absorb the digested food materials. What type of epithelial cells are responsible for that?
(A) Stratified squamous epithelium
(B) Columnar epithelium
(C) Spindle fibres
(D) Cuboidal epithelium



10. Which of the following helps in repair of tissue and fills up the space inside the organ?
(A) Tendon
(B) Adipose tissue
(C) Areolar tissue
(D) Cartilage

11. Match the following columns:

	Column I	Column II
A.	Cellulose	Cytoplasm
B.	Chromosome	Functional segment of DNA
C.	Cell organelles	Plant cell wall
D.	Genes	Nucleus

12. Liquid molecules in the cell are synthesized by:
(A) Smooth endoplasmic reticulum.
(B) Rough endoplasmic reticulum.
(C) Golgi apparatus.
(D) Plastids.

13. Rough endoplasmic reticulum are site of _____ (A) ____ manufacture, while smooth endoplasmic reticulum helps in manufacture of _____ (B) ____ molecules.
Choose the correct option for (A) and (B) respectively:
(A) Lipids, fats
(B) Carbohydrates, fats
(C) Protein, fats
(D) Vitamins, proteins

14. Which cell organelle plays a crucial role in detoxifying many poisons and drugs in a Cell?
(A) Golgi apparatus
(B) Lysosomes
(C) Smooth endoplasmic reticulum
(D) Vacuoles

15. Bone matrix is rich in:
(A) Fluoride and Calcium
(B) Calcium and phosphorus
(C) Calcium and potassium
(D) Phosphorus and potassium

16. The cell organelle involved in forming Complex Sugars from simple sugars are:
(A) Endoplasmic reticulum
(B) Ribosomes
(C) Plastics
(D) Golgi apparatus

17. A body is thrown vertically upward with velocity (u), the greatest height (h), to which it will rise is:

(A) u/g
(B) $u^2/2g$
(C) u^2/g
(D) $u/2g$

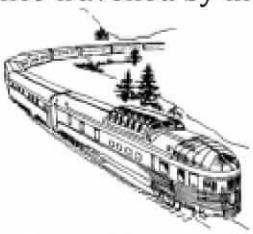
18. A car retards uniformly at the rate of 5 m/s^2 and stops in 10 s. The initial velocity of car is:

(A) 10 m/s
(B) 5 m/s
(C) 50 m/s
(D) 25 m/s

19. A body starting from rest and moving with a constant acceleration, covers a distance s_1 in the 4th second and a distance s_2, in the 6th second. The ratio s_1/s_2 is:

(A) 2/3
(B) 4/9
(C) 6/11
(D) 7/11

20. A Train starting from rest attains a velocity of 90 km/h in 2 min, then the distance travelled by the train for attaining this velocity is:

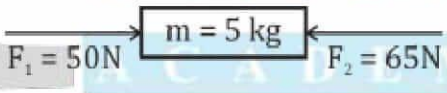


(A) 1.5 km
(B) 2 km
(C) 2.5 km
(D) 1.2 km

21. A truck moving with a speed of 54 km/h. Truck driver applied brakes suddenly and brings the truck to rest in 5 s, then the average retarding force on truck, if mass of the truck and driver is 400 kg, will be:

(A) 1200 N
(B) 600 N
(C) 800 N
(D) 500 N

22. Two forces F_1 and F_2 are acting on a body as shown in the figure, then acceleration in the body is:



(A) 23 m/s^2
(B) 3 m/s^2
(C) 2 m/s^2
(D) 22 m/s^2

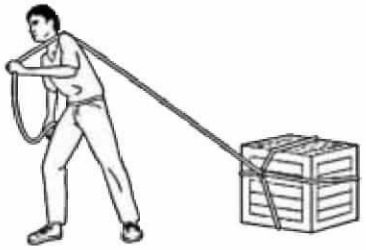
23. Match Column I with Column II and choose appropriate option from the codes given below.

	Column I	**Column II**
A.	Change in momentum	1.kg
B.	Momentum	2.N
C.	Force	3.kg-ms^{-1}
D.	Mass	4.$N^{-}s$

(A) A=3, B=4, C=1, D=2
(B) A=4, B=1, C=2, D=3
(C) A=4, B=3, C=2, D=1
(D) A=1, B=2, C=3, D=4

24. A student is able to move a block of mass 2 kg with minimum force of 1 N. The force of friction between the object and the surface will be

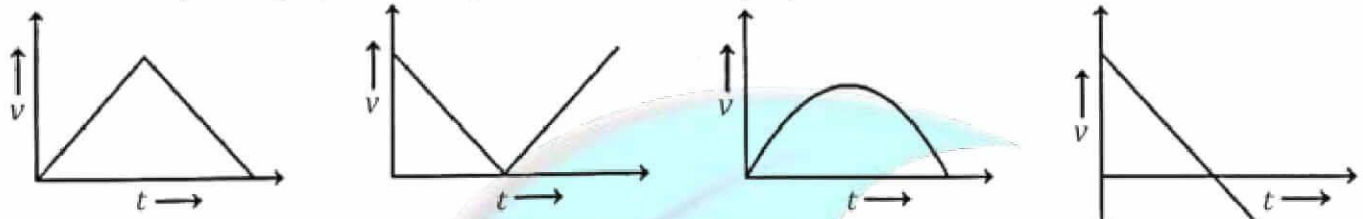
(A) 2 N
(B) 0.9 N
(C) 1N
(D) 0 N



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.

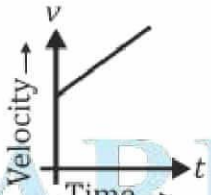
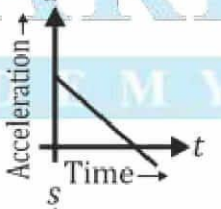
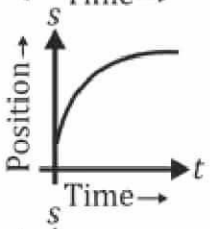
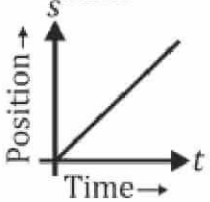
25. The velocity time graph of an object thrown vertically up is



26. Velocity time graph for a moving object is found to be curved line, then its acceleration is:

[A] Constant
[B] Variable
[C] Zero
[D] None of these

27. Match the Column-I with Column-II and choose appropriate option from the codes given below:

Column I	Column II
A. Uniform velocity	1. 
B. Uniform retardation	2. 
C. Uniform acceleration with initial velocity	3. 
D. Decreasing acceleration at steady rate	4. 

(A) A=3, B=4, C=2, D=1
(B) A=4, B=3, C=1, D=2
(C) A=4, B=1, C=2, D=3
(D) A=1, B=2, C=3, D=4

28. A body moving with an initial velocity of 5 metre per second and accelerates at 2 metre per second square. Its velocity after 10 second is:
[A] 20 m/s
[B] 25 m/s
[C] 5 m/s
[D] 22.5 m/s

29. The motion of blades of an electric fan around the axle is an example of:
[A] Uniform circular motion
[B] Linear motion
[C] Uniform retarded motion
[D] Non-uniform motion

30. The minute hand of wall clock is 14 m long. The distance and displacement covered by a tip of minute hand from 9 a.m. to 9:30 a.m. are
[A] 88 cm, 28 cm
[B] 28 cm, 44 cm
[C] 28 cm, 88 cm
[D] 44 cm, 28 cm

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): The component present in large amount is solute.
Reason (R): Solvent is the dissolving phrase.
[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): Lateral Meristem are present along the side of various organs in plants.
Reason (R): These help in the healing of wounds in plants.
[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): Cells having cell wall with stand very dilute (hypotonic) external media without bursting.
Reason (R): The cell wall exerts an equal pressure against the swollen cell.
[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): Acceleration of a moving body is always positive.
Reason (R): Acceleration of a moving body is the rate of change in velocity with respect to time.
[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): Mass is a measure of inertia of the body in linear motion.
Reason (R): Greater the mass, greater is the force required to change its state of rest or of uniform motion.
[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 not true regarding properties of a solution?
(A) It is a homogeneous mixture.
(B) The solute particles do not settle down when left undisturbed.
(C) The particles of a solution are smaller than 1 nm in diameter.
(D) The solute particles can be separated from the mixture by the process by filtration.

37. In a sweetened tea, the sugar is called:
(A) Solvent
(B) Solute
(C) Solution
(D) None of the above

38. The concentration of a solution represents:
(A) The total quantity of solution.
(B) The quantity of the solvent present in the solution.
(C) The quantity of the solute present in the solution.
(D) The quantity of the impurities presents in a solution.

39. Select the incorrect sentence:
(A) Blood has Matrix containing proteins, salts, and hormones.
(B) Two bones are connected with ligament.
(C) Tendons are non-fibrous tissue and fragile.
(D) Cartilage is a form of connective tissue.

40. Contractile proteins are found in
(A) Bones
(B) Blood
(C) Muscles
(D) Cartilage

41. The cells of connective tissue are _____ (A) _____ spaced and embedded in an _____ (B) ____ matrix.
(A) A=Tightly, B=Extracellular
(B) A=Loosely, B=Intercellular
(C) A=Loosely, B=Extracellular
(D) A=Tightly, B=Intercellular

42. Lysosome arises from
(A) Endoplasmic reticulum
(B) Golgi apparatus
(C) Nucleus
(D) Mitochondria

43. Which of the following are covered by a single membrane?
(A) Mitochondria
(B) Vacuole
(C) Lysosome
(D) Plastid

44. Mitochondria have two membranes. The outer membrane is very _____ (A) ____, while the inner membrane is ____ (B) _____.
(A) A=Porous, B=Deeply folded
(B) A=Folded, B=Porous
(C) A=Rigid, B=Soft
(D) A=Porous, B=Rigid

45. 1 dyne is equal to:
(A) 10^5 N
(B) 10^7 N
(C) 10^{-5} N
(D) 10^{-7} N

46. A Bus of mass 500 kg is moving with a velocity of 5 metre per second and is acted upon by a forward force of 500 Newton due to engine and retarding force of 200 Newton due to friction. Velocity of bus after 20 seconds will be:
(A) 15 m/s
(B) 17 m/s
(C) 19 m/s
(D) 21 m/s

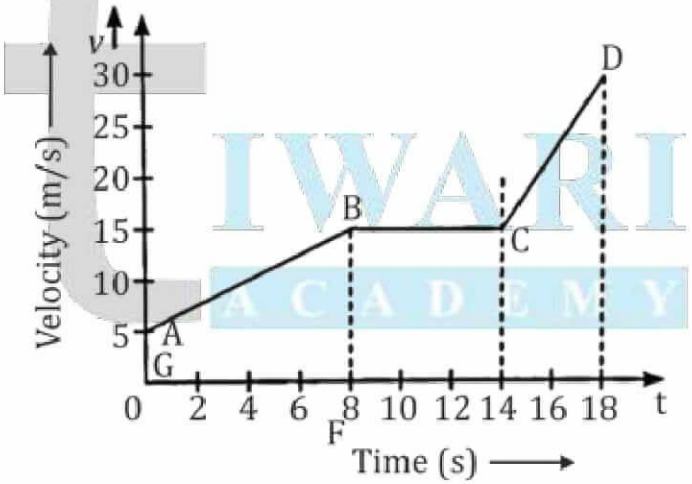
47. When a person jumps down from a tower into a stretched tarpaulin, then he receives:
(A) Greater injury
(B) Less injury
(C) No injury
(D) None of these

48. Shock absorbers are provided in the vehicles to smooth out shock impulses which away Newton's first law:
(A) True
(B) False
(C) Can't say
(D) Partially true or partially false

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:
Observe the following velocity time-graph of a body in motion and answer the questions that follow:



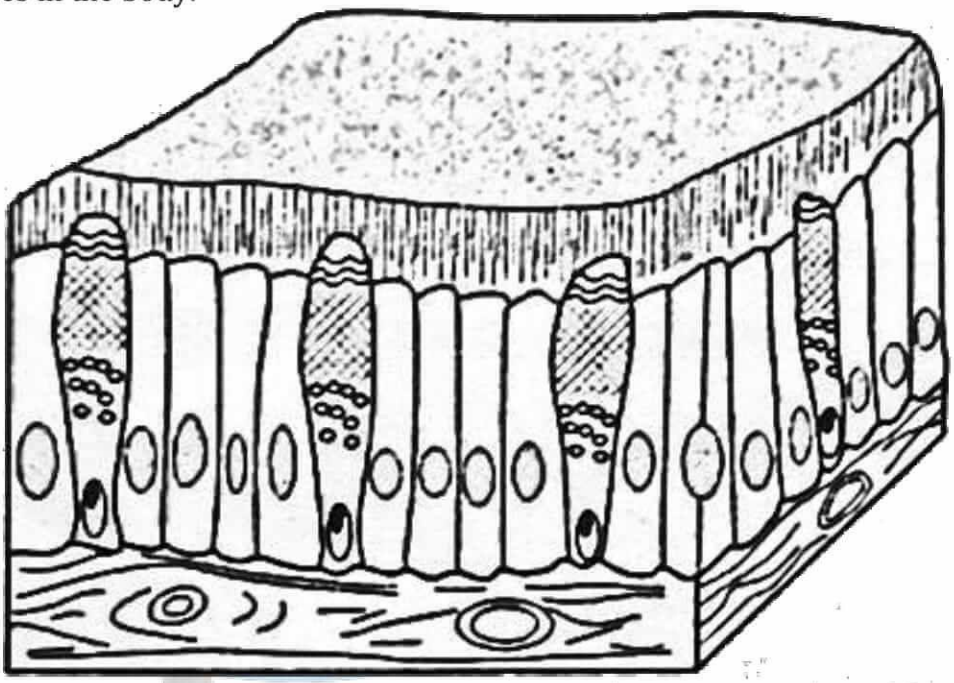
49. Calculate the acceleration of the body from C to D.
(A) 3 m/s^2
(B) 3.75 m/s^2
(C) 4.5 m/s^2
(D) 5.25 m/s^2

50. What is the displacement of the body in first 8 second of the motion?
(A) 20 m
(B) 40 m
(C) 80 m
(D) 160 m

51. What is the difference between acceleration from A to B and from C to D?
(A) 2.5 m/s^2
(B) 5 m/s^2
(C) 7.5 m/s^2
(D) Zero

52. The displacement of the body from t = 8 s to t = 14 s is:
(A) 60 m (B) 70 m
(C) 80 m (D) 90 m

Case – 2:
Animal cells are grouped together to form animal tissues. These tissues have variable structures, functions, and origin. Some of the tissues from the inner lining of the body and organs, whereas some point other tissues in the body.



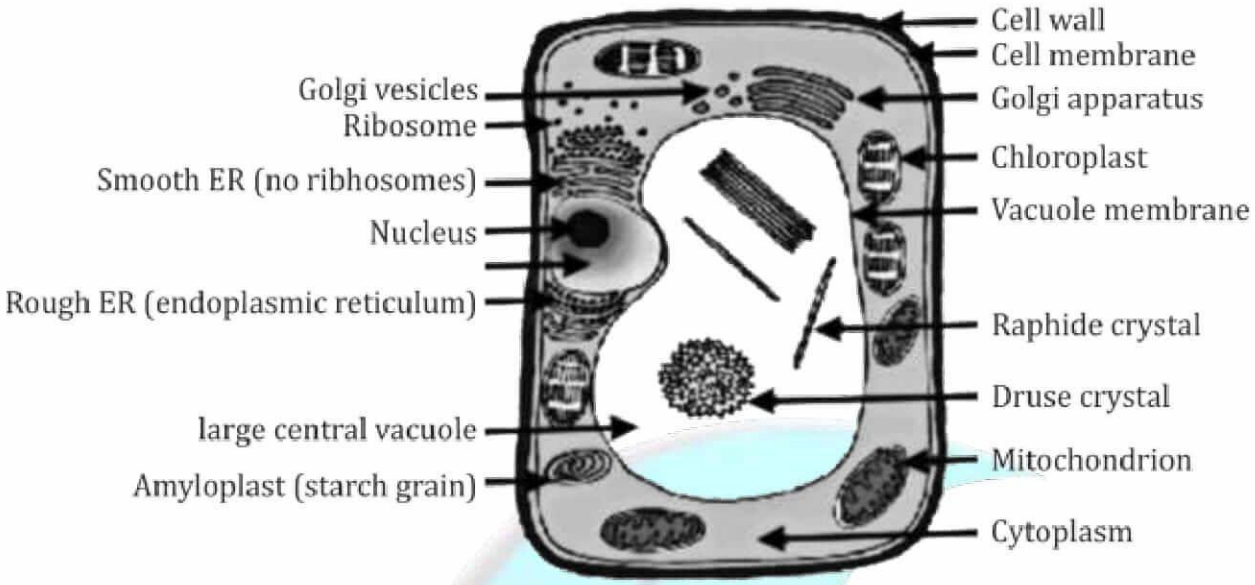
53. Which of the following is a major difference between Plant and Animal tissue?
(A) There are more dead supportive tissues in plants and more living tissues in animals.
(B) There are more dead supportive tissues in animals and more living tissues in plants.
(C) Organisation of plant tissues is quite complex when compared to animals.
(D) None of the above.

54. The diagram given in the passage depicts
(A) Connective tissue
(B) Ciliated columnar epithelium
(C) Simple squamous epithelium
(D) Columnar epithelium

55. Which among the following is not an animal tissue?
(A) Epithelial tissue
(B) Blood
(C) Glandular epithelium
(D) Epidermal tissue

56. In which of the following places, can we not find ciliated columnar epithelium?
(A) Mouth
(B) Respiratory tract
(C) Kidney tubules
(D) Oviduct

Case – 3:
Study the diagram of plant cell and answer the following questions:



57. Plant Cell wall is made up of
(A) Chitin, Cellulose, starch
(B) Cellulose, hemicellulose, pectin
(C) Pectin, Chitin, Starch
(D) Cellulose, Chitin, pectin.

58. The special structures in plant cell known as Kitchen of the Cell:
(A) Ribosomes
(B) Cytoplasm
(D) Chloroplast
(C) Lysosomes

59. Plant Cell have large _____ than animal cells.
(A) Vacuole
(B) Mitochondria
(C) Cytoplasm
(D) Nucleus

60. Which cell organelle is involved in synthesis of vacuoles?
(A) Chloroplast
(B) Nucleus
(C) Golgi apparatus
(D) Mitochondria