

GENERAL KNOWLEDGE

1. Who discovered cell first time by observing cork?

(1)



Alexander Fleming

(2)



Robert Hooke

(3)



Leeuwenhoek

(4)



Isaac Newton

2. Who is known as father of microbiology?

(1)



Alexander Fleming

(2)



Robert Hooke

(3)



Leeuwenhoek

(4)



William Edwin Adams

3. Washing soda is the common name for

- (1) Sodium carbonate
- (2) Calcium bicarbonate
- (3) Sodium bicarbonate
- (4) Calcium carbonate

4. From which mineral is radium obtained?

- (1) Rutile
- (2) Haematite
- (3) Limestone
- (4) Pitchblende

5. ADP, an important organic compound in metabolism stands for:

- (1) Adenosine triphosphate
- (2) Adenosine diphosphate
- (3) Adenine diphosphate
- (4) Adenine diphenyl

6. Seema visited a Natural Gas Compressing Unit and found that the gas can be liquefied under specific conditions of temperature and pressure. While sharing her experience with friends she got confused. Help her to identify the correct set of conditions.

- (1) Low temperature, low pressure
- (2) High temperature, low pressure
- (3) Low temperature, high pressure
- (4) High temperature, high pressure

7. Which of the following are physical changes?

- (i) Melting of iron metal
- (ii) Rusting of iron
- (iii) Bending of an iron rod
- (iv) Drawing a wire of iron metal

- (1) (i), (ii) and (iii)
- (2) (i), (ii) and (iv)
- (3) (i), (iii) and (iv)
- (4) (ii), (iii) and (iv)

8. Which one of the following has maximum number of atoms?

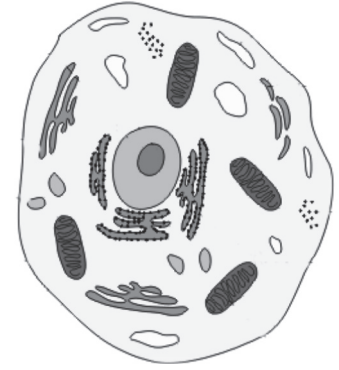
- (1) 18 g of H_2O
- (2) 18 g of O_2
- (3) 18 g of CO_2
- (4) 18 g of CH_4

9. In a sample of ethyl ethanoate ($\text{CH}_3\text{COOC}_2\text{H}_5$) the two oxygen atoms have the same number of electrons but different number of neutrons. Which of the following is the correct reason for it?

- (1) One of the oxygen atoms has gained electrons.
- (2) One of the oxygen atoms has gained two neutrons.
- (3) The two oxygen atoms are isotopes.
- (4) The two oxygen atoms are isobars.

10. Cell secretions are processed and packed up by:

- (1) Golgi apparatus
- (2) Nucleus
- (3) Ribosomes
- (4) Mitochondria



LIFE SCIENCE

11. A cell will swell up if

- (1) the concentration of water molecules in the cell is higher than the concentration of water molecules in surrounding medium.
- (2) the concentration of water molecules in surrounding medium is higher than water molecules concentration in the cell.
- (3) the concentration of water molecules is same in the cell and in the surrounding medium.
- (4) the concentration of water molecules does not matter

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

- (1) intercalary meristem
- (2) conducting tissue
- (3) apical meristem
- (4) parenchymatous tissue

13. In which group of animals coelom is filled with blood?

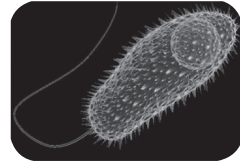
- | | |
|----------------|-------------------|
| (1) Arthropoda | (2) Annelida |
| (3) Nematoda | (4) Echinodermata |

14. Organisms without nucleus and cell organelles belong to

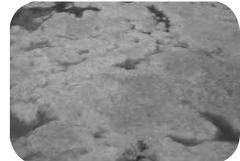
- (1)  fungi



(2)  protista



(3)  algae



(4)  bacteria



15. Which cells do not have perforated cell walls?

- | | |
|-----------------|---------------------|
| (1) Tracheids | (2) Companion cells |
| (3) Sieve tubes | (4) Vessels |

16. Find out the correct sentence:

- (i) Hybridisation means crossing between genetically dissimilar plants.
- (ii) Cross between two varieties is called as interspecific hybridisation.
- (iii) Introducing genes of desired character into a plant gives genetically modified crop.
- (iv) Cross between plants of two species is called as intervarietal.

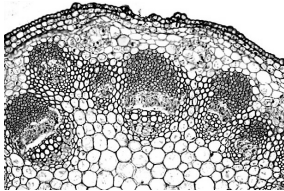
- | | |
|--------------------|--------------------|
| (1) (i) and (iii) | (2) (ii) and (iv) |
| (3) (ii) and (iii) | (4) (iii) and (iv) |

17. Find out the correct sentence about manure:

- (i) Manure contains large quantities of organic matter and small quantities of nutrients.
- (ii) It increases the water holding capacity of sandy soil.
- (iii) It helps in draining out of excess of water from clayey soil.
- (iv) Its excessive use pollutes environment because it is made of animal excretory waste.

- (1) (i) and (iii) (2) (i) and (ii)
- (3) (ii) and (iii) (4) (iii) and (iv)

18. Parenchyma is a type of _____.

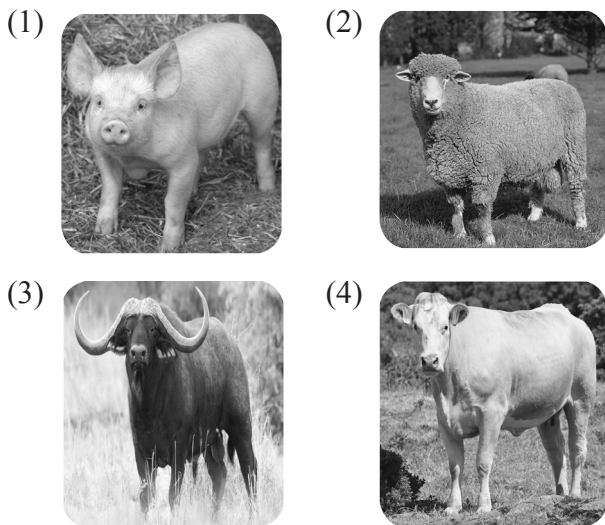


- (1) Simple tissue (2) Complex tissue
- (3) Xylem (4) Phloem

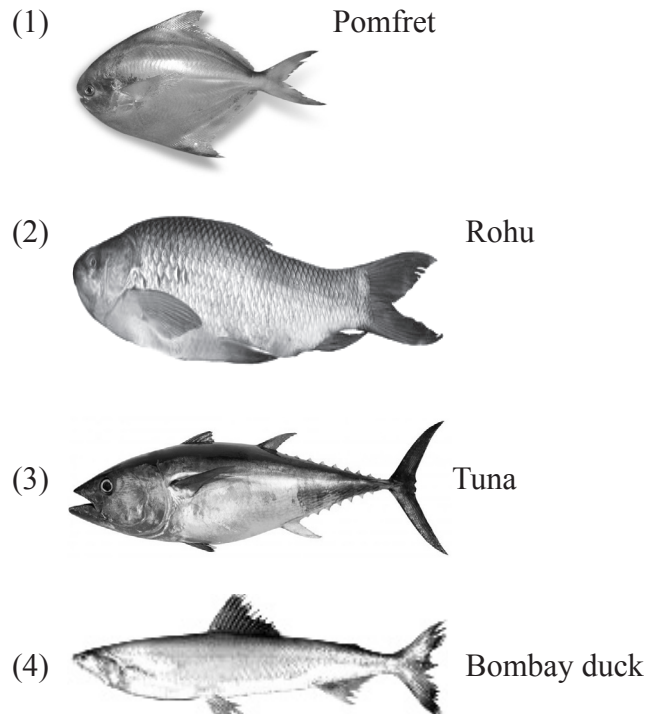
19. Which meristem is present at the base of the leaves or internodes on twigs?

- (1) Apical meristem
- (2) Cambium
- (3) Intercalary meristem
- (4) Epidermis

20. *Bos indicus* is the scientific name of



21. Which of the following is not a marine fish?



22. A permanent slide shows thin walled isodiametric cells with a large vacuole. The slide contains:

- (1) Parenchyma cells (2) Nerve cells
- (3) Sclerenchyma cells (4) Collenchyma cells

23. Aditi observed following observations while looking into a permanent slide.

- (i) Cells are long and cylindrical
- (ii) Light and dark bands are present.

It could be a slide of:

- (1) striated muscle fibre
- (2) smooth muscle fibre
- (3) neuron
- (4) parenchyma cells

24. The inner lining of blood vessels is made up of which kind of tissue?

- (1) Nervous tissue (2) Epithelial tissue
- (3) Connective tissue (4) Muscle tissue

25. _____ are pollution indicator plants.

- (1) Mycorrhiza (2) Lichen
- (3) Rose (4) Marigold

26. Identify which of the following plant tissues are living or dead?

(i) Apical Meristem	(vii) Xylem Fibres
(ii) Parenchyma	(viii) Xylem Parenchyma
(iii) Aerenchyma	(ix) Phloem Fibre
(iv) Collenchyma	(x) Phloem Parenchyma
(v) Sclereids	(xi) Nessel
(vi) Tracheids	(xii) Sieve Tubes

- (1) (ii), (iv), (v), (x), (ix)
- (2) (i), (iii), (iv), (x), (xi), (xii)
- (3) (i), (ii), (iii), (iv), (viii), (x), (xii)
- (4) (i), (ii), (viii), (x)

27. Which of the following disease combination is caused by virus?

- (1) Influenza, Dengue, AIDS
- (2) Influenza, Kala azar, Haemophilia
- (3) Sleeping sickness, Kala azar, Dengue
- (4) Influenza, Kala azar, Dengue

28. Antibiotics generally

- (1) Are toxic to bacteria
- (2) Directly kills the bacteria
- (3) Blocks biochemical pathways of bacteria
- (4) Suffocates the bacteria

29. Which of the following is not a fish?

- (1) Shark
- (2) Rohu
- (3) Whale
- (4) Electric Ray

30. The virus for Japanese encephalitis enters into our body through

- (1) Bite of a mad dog
- (2) Bite of a mosquito
- (3) Taking in foul air
- (4) Drinking contaminated water

31. Echidna and Platypus which lay eggs belongs to the class



Echidna



Platypus

- (1) Mammalia
- (2) Reptilia
- (3) Amphibia
- (4) Aves

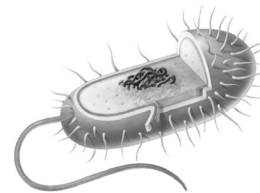
32. The immune system

- (1) Fights and kills pathogens
- (2) Develops antibodies for future attacks
- (3) Remember previous infections
- (4) All of the above

33. Chromoplasts are plant pigments which give _____

- (1) green colour
- (2) no colour
- (3) colour other than green
- (4) all of above

34. A prokaryotic cell



- (1) Do not have defined nuclear membrane
- (2) Do not have membrane bounded cell organelles
- (3) Have a single chromosome
- (4) All of the above

35. Out of 16 nutrients essential to plants, _____ nutrients are classified as macro nutrients.

- (1) 4
- (2) 6
- (3) 8
- (4) 12

36. In coastal areas during the day the air above the land gets heated faster and thus

- (1) Air from the land rushes towards the sea
- (2) Air from the land and sea rushes towards each other and collides
- (3) Air from the sea rushes towards the land
- (4) Air from the land rushes towards the sea creating a vacuum on the land

37. Elemental oxygen in the atmosphere is normally found in the form of:

- (1) Single atom
- (2) Diatomic molecule
- (3) Compound with other elements
- (4) Triatomic molecule

38. _____ is the major process through which oxygen is returned to the atmosphere.

- (1) Photosynthesis (2) Respiration
- (3) Combustion (4) All of above

39. In poultry farms, broilers are raised for their

- (1) Egg
- (2) Both egg and meat
- (3) Meat
- (4) Neither egg nor meat



40. Kala Azar is caused by a

- (1) Nematode
- (2) Protozoa
- (3) Virus
- (4) Bacteria

INTERACTIVE SECTION

41. The numerical ratio of displacement to distance covered by a moving object is

- (1) always less than 1 (2) always equal to 1
- (3) always more than 1 (4) equal or less than 1

42. Which of the following waves do not require any kind of medium to propagate?

- (1) Sound (2) Earthquake waves
- (3) Light waves (4) Water surface waves

43. Waves produced on the surface of water are:

- (1) Longitudinal only
- (2) Transverse waves only
- (3) Electromagnetic waves
- (4) Both longitudinal and transverse

44. Which of the gas is not known as greenhouse gas?

- (1) Methane (2) Nitrous oxide
- (3) Carbon dioxide (4) Hydrogen

45. In longitudinal waves, the particles vibrate in a _____ direction of propagation.

- (1) parallel
- (2) perpendicular
- (3) curved
- (4) both parallel and perpendicular

46. Quartz crystals normally used in quartz clocks etc. is chemically

- (1) silicon dioxide
- (2) germanium oxide
- (3) a mixture of germanium oxide and silicon dioxide
- (4) sodium silicate

47. A medium transmits a sound wave by virtue of its

- (1) elasticity
- (2) inertia
- (3) density
- (4) both inertia and elasticity

48. The number of oscillations completed in one second is called _____.

- (1) time period (2) velocity
- (3) frequency (4) wavelength

49. The gas usually filled in the electric bulb is:

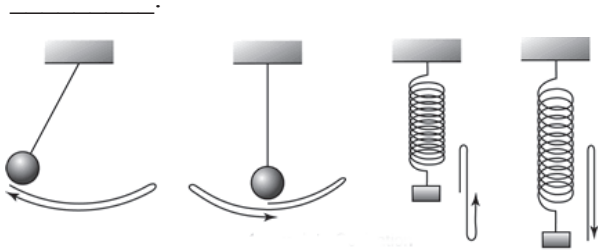
- (1) Nitrogen (2) Hydrogen
- (3) Carbon dioxide (4) Oxygen



50. What type of sound waves can propagate in solids?

- (1) Longitudinal only
- (2) Transverse only
- (3) Either longitudinal or transverse
- (4) Non-mechanical waves only

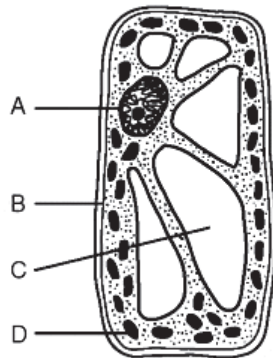
51. The time taken to complete one oscillation is called _____.



- (1) time period (2) velocity
(3) frequency (4) wavelength

52. Which labelled structure indicates a cell structure that directly controls the movement of molecules into and out of the cell?

- (1) A
(2) B
(3) C
(4) D



53. The quantity $1/\lambda$ is known as

- (1) wave velocity (2) frequency
(3) wavelength (4) wave number

54. In which of the following, speed of the sound is maximum?

- (1) air (2) water
(3) steel (4) kerosene

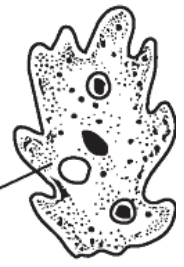
55. When DNA separates into two strands, the DNA would most likely be directly involved in

- (1) Replication (2) Fertilization
(3) Differentiation (4) Evolution

56. Which process normally occurs at the placenta?

- (1) Oxygen diffuses from fetal blood to maternal blood.
(2) Materials are exchanged between fetal and maternal blood.
(3) Maternal blood is converted into fetal blood.
(4) Digestive enzymes pass from maternal blood to fetal blood.

57. A single-celled organism is represented in the given diagram. An activity is indicated by an arrow.



If this activity requires the use of energy which substance would be the source of this energy?

- (1) DNA (2) ATP
(3) a hormone (4) an antibody

58. Which activity would stimulate the human immune system to provide protection against an invasion by a microbe?

- (1) receiving antibiotic injections after surgery
(2) choosing a well-balanced diet and following it throughout life
(3) being vaccinated against chicken pox
(4) receiving hormones contained in mother's milk while nursing

59. In an ecosystem, the presence of many different species is critical for the survival of some forms of life when

- (1) ecosystems remain stable over long periods of time
(2) significant changes occur in the ecosystem
(3) natural selection does not occur
(4) the finite resources of Earth increase

60. Individual cells can be isolated from a mature plant and grown with special mixtures of growth hormones to produce a number of genetically identical plants. This process is known as

- (1) cloning
(2) meiotic division
(3) recombinant DNA technology
(4) selective breeding



END OF THE EXAM