

BIOLOGY

BOOKS - ARIHANT PUBLICATION

THE FUNDAMENTAL UNIT OF LIFE

Question Bank

1. Which of the following is incorrect?

- A. Unicellular organisms have independent existence
- B. Antony van leeuwenhoek first saw and described a living cell
- C. Robert brown discovered the nucleus
- D. cell theory was proposed by two british scientists schleiden and rudolf virchow

Answer: D



- **2.** Comparing small and large cells, which statement is correct?
 - A. small cells have a small surface area per volume ratio
 - B. exchange rate of nutrients is fast with large cells
 - C. smalls cells have a large surface area per volume ratio
 - D. exchange rate of nutrients is slow with small cells



- **3.** Which of the following first explained that new cells are formed from pre existing cells (omnis cellula-e-cellula)?
 - A. Robert Hooke
 - B. Robert Brown
 - C. Rudolf virchow
 - D. Scheiden



- **4.** Which one of the following is not a constituent of cell membrane
 - A. cholesterol
 - B. glycolipids
 - C. calcium pectate
 - D. phospholipids



- **5.** About 98 percent of the mass of every living organisms is composed of just six elements including carbon, hydrogen, nitrogen, oxygen and
 - A. phosphorus and sulphur
 - B. sulphur and magnesium
 - C. magnesium and sodium

D. calcium and phosphorus

Answer: A



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6. Which of the following cell organelles are non membranous and found in both prokaryotic and eukaryotic cells?

A. Lysosomes

B. Microbodies

- C. Ribosomes
- D. Vacuoles



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7. Which of the following are not membrane bound cell structures?

- A. Mitochondria and chloroplast
- B. golgi body and ER

- C. Lysosome and vacuole
- D. centrioles and ribosomes

Answer: D



- 8. Select the incorrect statement from the following
 - A. Both chloroplasts and mitochondria contain an inner and an outer

membrane

B. Both chloroplasts and mitochondria

have an internal compartment the

thylakoid space bounded by the

thylakoid membrane

C. Both chloroplasts and mitochondria contain DNA

D. the chloroplasts are generally much larger than mitochondria

Answer: B

9. Mesosome is the xtension of plasma membrane into the cell it helps in

A. cell wall formation

B. DNA replication

C. respiration

D. all of the above

Answer: D

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10. Match the following columns

Column I	Column II
A. Endoplasmic reticulum	Stack of cisternae
B. Spherosome	2. Store oils or fats
C. Dictyosome	 Synthesis and storage of lipids
D. Peroxisome	4. Photorespiration
E. Elaioplasts	5. Detoxification of drugs

	Co	de	s								
		Α	В	С	D	Ε	Α	В	С	D	Ε
_	(1)	5	3	1	4	2	(2) 5	3	2	4	1
D.	(3)	2	3	1	4	5	(4) 4	3	1	5	2

Answer: A



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11. Fluid mosaic model is the most accepted model for plasma membrane structure it shows that

A. quasi fluid nature of lipid enables lateral movement of proteins within overall bilayer

- B. lateral movement within the membrane is measured as its fluidity
- C. fluid nature of membrane is important for growth formation of intercellular junction, secretion endocytosis cell division etc
- D. all of the above

Answer: D



12. The plasma membrane is selectively permeable .Many molecules can move across the membrane without any requirement of energy this is called

A. active transport

B. osmosis

C. passive transport

D. diffusion

Answer: C



13. Which one of the following statements regarding mitochondrial membrane is not correct?

A. the outer membrane is permeable to all kinds of molecules

B. the enzymes of the electron transfer chain are embedded in the outer membrane

C. the inner membrane is highly convoluted forming a series of infoldings

D. the outer membrane resembles a sleeve

Answer: B



14. Match the following columns

Column I	Column II
A. RBCs	 Round and oval
B. WBCs	2. Round and biconcave
C. Columnar epithelial cell	3. Amoebold
D. Nerve cell	4. Long and narrow
E. A tracheid	5. Elongated
F. Mesophyll cells	6. Branched and long

Codes

ABCDEF (1) 2 3 4 6 5 1

(2) 3 2 6 4 1 5

(3) 6 3 2 1 5 4

A. (4) 5 2 3 4 1 6

Codes

A B C D E F (1) 2 3 4 6 5 1

(2) 3 2 6 4 1 5

(3) 6 3 2 1 5 4 (4) 5 2 3 4 1 6

B.

Codes A B C D E F (1) 2 3 4 6 5 1

(2) 3 2 6 4 1 5 (3) 6 3 2 1 5 4

C. (4) 5 2 3 4 1 6

Codes

A B C D E F

(1) 2 3 4 6 5 1

(2) 3 2 6 4 1 5

(3) 6 3 2 1 5 4

D. (4) 5 2 3 4 1 6

Answer: A



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15. Which of the statements are correct?

I.Occurence of different types of tissues ,organs and organ system results in division of labour

II.A new cell always develops by the division of a pre existing cells

III.Cells are totipotent

IV.Cell is the smallest unit,capable of independent existence and performing the essential functions of life.

The correct option is

A. I,II,III

B. I,III,IV

C. II,III,IV

D. all of the above

Answer: D



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16. Two animal cells are interconnected by

A. plasmodesmata

B. cell wall

C. desmosome

D. plasma membrane

Answer: C



17. In a woody dicotyledonous tree, which of the following parts wall mainly consist of primary tissues

A. stem and root

B. all parts

C. shoot tips and root tips

D. flowers, fruits and leaves

Answer: C



18. Mitochondria will be found in abundance in cells of tissues having

A. minimum activity

B. average activity

C. maximum activity

D. none of the above

Answer: C



A. outer membrane

B. inner membrane

C. thylakoids

D. stroma

Answer: C



20. Match the following columns

Column I	Column II
A. Sphaerosomes	1. RNA synthesis
B. Peroxisomes	Lipid storage
C. Plasmodesmata	 Glycolate metabolism
D. Nucleolus	4. Transport of macromolecules

D. 📝

Answer: A

21. Different cells have different sizes arrange the following cells in an ascending order of their size Choose the correct option among the followings

I.Mycoplasma

II.Ostrich eggs

III.Human RBC

IV.Bacteria

A. I,IV,III,II

- B. I,II,III,IV
- C. II,I,III,IV
- D. III,II,I,IV

Answer: A



- 22. Prokaryotic and eukaryotic flagella differ in
 - A. Type of movement and placement in cell
 - B. location in cell and mode of functioning

C. microtubular organisation and type of movement

D. microtubular organisation and function

Answer: C



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23. Cell organelle responsible for autolysis is

A. dictyosome

B. lysosome

- C. peroxisome
- D. glycosome

Answer: B



- 24. Nuclear membrane is absent in
 - A. penicillium
 - B. agaricus
 - C. volvox

D. nostoc

Answer: D



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25. Tonoplast is the membrane covering of

A. vacuole

B. mitochondria

C. chloroplast

D. lysosome

Answer: A



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26. Which Of the following statement are correct

I.Mycoplasmas are the smallest cells

II.Nerve cells are the longest cells of our body

III.Ribosomes are non membrane bound

organelles found only in eukaryotic cells

IV.The cytoplasm is the main arena of cellular

activities only in plant cells.

- A. I,II,III
- B. I,II
- C. II,III
- D. I,II,III,IV

Answer: B



27. Match the following column

Column I	Column II
A. Smooth endoplasmic reticulum	1. Amoeba
B. Lysosome	2. Bacteria
C. Nucleoid	3. Detoxification
D. Food vacuoles	4. Suicidal bags

Codes

ABCD

(1) 1 2 3 4

(2) 4 3 2 1

(3) 1 4 3 2

A (4) 3 4 2 1

Codes

ABCD

(1) 1 2 3 4

(2) 4 3 2 1

(3) 1 4 3 2

B. (4) 3 4 2 1

Codes

ABCD
(1) 1 2 3 4
(2) 4 3 2 1
(3) 1 4 3 2
(4) 3 4 2 1

Codes
ABCD
(1) 1 2 3 4
(2) 4 3 2 1

D. (3) 1 4 3 2 (4) 3 4 2 1

Answer: D



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28. Which one of the following does not differ in E.coli and chlamydomonas?

A. Ribosomes

- B. chromosomal organisation
- C. cell wall
- D. cell membrane

Answer: D



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29. The structure that are formed by stacking of organised flattened membranous sacs in the chloroplasts are

- A. cristae
- B. grana
- C. stroma lamellae
- D. stroma

Answer: B



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30. The chromosomes in which centromere is situated close to end are

A. metacentric

B. acrocentric

C. telocentric

D. submetacentric

Answer: B



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31. The solid linear cytoskeletal elements having a diameter of 6nm and made up of a single type of monomers are known as

- A. microtubules
- B. microfilaments
- C. intermediate filaments
- D. lamins

Answer: B



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32. Osmotic expansion of a cell kept in water is chiefly regulated by

- A. mitochondria
- B. vacuoles
- C. plastics
- D. ribosomes

Answer: B



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33. Match the following column and select the correct answer

Column I	Column II
A. Centriole	Infoldings in mitochondria
B. Chlorophyll	2. Thylakoids
C. Cristae	3. Nucleic acids
D. Ribozymes	4. Basal body cilia or

Codes

A B C D (1) 4 2 1 3

(2) 1 2 4 3

(3) 1 3 2 4 A. (4) 4 3 1 2

Codes

ABCD

(1) 4 2 1 3

(2) 1 2 4 3

(3) 1 3 2 4 B. (4) 4 3 1 2

C. 🖳

D. 🗾

34. A major site for synthesis of lipids is

A. SER

B. Symplast

C. nucleoplasm

D. PER

Answer: A



35. The Golgi complex plays a major role

A. in digestion proteins and carbohydrates

B. as energy transferring organelles

C. in post translational modification of proteins and glycosylation of lipids

D. trapping the light and transforming it into chemical energy

Answer: C



36. Which of the following is not correctly matched for the organism and its cell wall degrading enzyme?

A. plant cells-cellulose

B. algae -methylase

C. fungal-chitinase

D. bacteria-lysozyme

Answer: B

37. What is true about ribosomes?

A. The prokaryotic ribosomes are 80s where S stands for sedimentation coefficient

B. these are composed of ribonucleic acid and proteins

C. these are found only in eukaryotic cells

D. these are self splicing introns of some

RNAS

Answer: B



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38. In eubacteria, a cellular component that resembles eukaryotic cell is

A. nucleus

B. ribosome

C. cell wall

D. plasma membrane

Answer: D



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39. Match the following columns

Column I	Column II
A. Leeuwenhoek	 Described a living cell
B. Robert Hooke	2. Unicellular
C. Chlamydomonas	3. Discovered cell membrane
D. Robert Brown	4. Wrote 'Micrographia'
E. Schwann	Discovered the nucleus





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Codes

A B C D E A B C D E

(1) 1 4 2 5 3 (2) 2 1 5 4 3

(3) 4 1 5 3 2 (4) 5 3 1 4 2
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Answer: A



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40. Satellite of chromosome is

A. rich in RNA and deficient in DNA

- B. rich in DNA and deficient in RNA
- C. rich in protein
- D. devoid of DNA

Answer: B



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41. Which one of the following structures between two adjacent cells is an effective transport pathway?

- A. plasmodesmata
- B. plastoquinones
- C. endoplasmic reticulum
- D. plasmalemma

Answer: A



- 42. Membrane bound organelles are absent in
 - A. saccharomyces

- B. streptococcus
- C. chlamydomonas
- D. plasmodium

Answer: B



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43. A plant tissue, when stained, showed the presence of hemicellulose and pectin in cell wall of its cells, the tissue represents

- A. collenchyme
- B. sclerenchyma
- C. xylem
- D. meristem

Answer: A



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44. Passage cells are thin walled cells found in

- A. endodermis of roots facilitating rapid

 transport of water from cortex to

 pericycle
 - B. phloem elements that serves as entry point for substance for transport to other plant parts
 - C. testa of seeds to enable emergence of growing embryonic axis during seed germination

D. central region of style through which the pollen tube grows towards the ovary

Answer: A



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45. Meristem responsible for increase in girth or diameter is

A. apical meristem

B. intercalary meristem

- C. lateral meristem
- D. none of the above

Answer: C



of

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46. Intercalary meristem is present at the base

- A. intermodes in grasses
 - B. leaves in pinus

C. nodes in mentha

D. all of the above

Answer: D



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47. Which of the following statement is true

A. vessels are multicellular and with wide

lumen

B. tracheids are multicellular and with narrow lumen

C. vessels are unicellular and with narrow lumen

D. tracheids are unicellular and with wide lumen

Answer: A



48. Lateral meristem is present in

A. vascular cambium

B. cork cambium

C. xylem and phloem

D. both(1)(2)

Answer: D



49. Identify the type of plant tissue being represented by the set of statements given below

I.Their cells are isodiametric (they may be spherical, oval round etc)

II.Their cell walls are thin and made up of cellulose

III.They may either be closely packed or have small intercellular spaces

IV.They perform functions like photosynthesis ,storage,secretion etc.

- A. sclerenchyma
- B. parenchyma
- C. collenchyma
- D. xylem

Answer: C



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50. Majority of the chloroplasts of the green plants are found in the

- A. mesophyll cells of leaves
- B. palisade cells of leaves
- C. upper epidermis of leaves
- D. lower epidermis of leaves

Answer: A



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51. In Eichhornia ,parenchyma developes air spaces such parenchyma with air cavities is known as

- A. collenchyme
- B. chlorenchyma
- C. aerenchyma
- D. sclerenchyma

Answer: C



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52. Which of the following is not correct?

- A. hardness of seed coat is due to stone cells
- B. stone cells are present in endocarp of coconut hard seed coats and fruit pulp
- C. stone cells are not present in fruit pulp of pyrus
- D. function of sclereids is storage of food

Answer: D



53. Vessel less angiosperms is

A. wintera(winteraceae)

B. tetracentron

C. trochodendron

D. all of the above

Answer: D



54. Match the following columns

Column I	Column II
A. Stem	 Xylem and phloem are arranged in alternative manner.
B, Roots	Xylem and phloem are arranged in same radius of vascular bundle
	3. Radial vascular bundle
	4. Conjoint vascular bundle

	00000	
	Α	В
	(1) 1 and 4	2 and 3
	(2) 1 and 3	2 and 4
	(3) 2 and 3	1 and 4
Λ	(4) 2 and 4	1 and 3
Л.		
	Codes	
	Α	В
	(1) 1 and 4	2 and 3
	(2) 1 and 3	2 and 4
B.	(3) 2 and 3	1 and 4
D.	(4) 2 and 4	1 and 3
	Codes	
	Α	В
	(1) 1 and 4	2 and 3
	(2) 1 and 3	2 and 4
_	(3) 2 and 3	1 and 4
((4) 2 and 4	1 and 3

Codes

Codes
A
B
(1) 1 and 4 2 and 3
(2) 1 and 3 2 and 4
(3) 2 and 3 1 and 4
D. (4) 2 and 4 1 and 3

Answer: D



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55. What is common between chloroplasts, chromoplasts and leucoplasts?

A. the presence of pigments

B. the possession of thylakoids and grana

C. storage of starch proteins and lipids

D. ability to multiply by a fission like process

Answer: D



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56. Which of the following non angiosperm plants have vessel?

A. Gnetum

B. welwitschia

- C. ephedra
- D. all of the above

Answer: D



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57. Companion cells are absent in phloem of

- A. angiosperms and bryophytes
- B. pteridophytes and gymnosperms
- C. angiosperms and gymnosperms

D. bryophytes and angiosperms

Answer: B



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58. Generally epidermis is single layered but in certain leaves ,multilayered upper epidermis is present such as

A. nerium

B. ficus

C. peperomia

D. all of the above

Answer: D



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59. Which of the following statements is not correct?

A. in xerophytes stomata are of sunken

tupe

- B. in some monocots like doob grass guard cells are dumbbell or barbell shaped
- C. the guard cells are nonliving and contain no chloroplast
- D. epidermal cells also possess anthocyanin pigments tannins and different crystals

Answer: C



60. Match the following columns

Column I	Column II	
A. Stomata	 Contains chloroplasts 	
B. Mesophyll	2. Light colour	
C. Lenticels	3. Dark colour	
D. Springwood	4. Epidermis of leaves	
E. Autumn wood	Exchange of gases	

Codes

ABCDE

(1) 4 1 5 2 3

(2) 2 1 3 5 4 (3) 5 4 2 1 3

A. (4) 1 2 3 4 5

Codes

ABCDE

(1) 4 1 5 2 3

(2) 2 1 3 5 4

(3) 5 4 2 1 3

B. (4) 1 2 3 4 5

Codes

ABCDE

(1) 4 1 5 2 3

(2) 2 1 3 5 4

(3) 5 4 2 1 3

(4) 1 2 3 4 5

Codes

ABCDE

(1) 4 1 5 2 3

(2) 2 1 3 5 4

(3) 5 4 2 1 3

D. (4) 1 2 3 4 5

Answer: A



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61. In angiosperms pericycle gives rise to

A. primary roots

B. lateral roots

C. secondary growth

D. cork cells

Answer: B

62. Genes present in the cytoplasm of eukaryotic cells are found in

A. mitochondria and inherited via egg cytoplasm

B. lysosomes and peroxisomes

C. golgi bodies and smooth endoplasmic reticulum

D. plastics and inherited via male gamete

Answer: A



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63. Companion cells are closely associated with:

- A. vessels
- B. sperms
- C. sieve elements
- D. guard cells

Answer: C



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64. Match the following columns

Column I	Column II		
A. Sclereids	 Conducting tissue 		
B. Xylem	Sclerenchymatous cells		
C. Phloem fibres	3. Epidermal tissue		
D. Trichome	4. Fruit walls of nuts		

Codes

A B C D A B C D

(1) 2 1 3 4 (2) 4 1 2 3
(3) 3 4 2 1 (4) 1 2 3 4



D. 📝

Answer: B



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65. Which statements are correct about guard cells?

I.They are modified group tissues

II.They are chlorophyllous

III.Its outer wall is thin and inner wall is highly

thickened

IV.They regulates stomatal movement for transpiration and gaseous exchange

- A. All except I
- B. all except II
- C. all except III
- D. all except Iv

Answer: A



66. Interfascicular cambium develops from the cell of

A. xylem parenchyma

B. endodermis

C. pericycle

D. medullary rays

Answer: D



67. Ground tissue includes

A. all issues except epidermis and vascular bundles

B. epidermis and cortex

C. all tissues internal to endodermis

D. all tissues external to endodermis

Answer: A



60	11: . 1	•			•
68.	Histogens	capping	root apical	meristem	IS
		33.77	p		

- A. dermatogen
- B. calyptrogen
- C. periblem
- D. plerome

Answer: B



- A. group of separate organs that are coordinated in their activities
- B. group of similar cells that function together to perform an activity
- C. layer of cells surrounding an organ
- D. sheet of cells one layer thick

Answer: B



70. An organ is a

- A. group of two or more kinds of tissues united structurally and coordinated together to perform an activity
- B. group of similar cells that function together to perform an activity
- C. multilayered sheet of cells
- D. solid structure formed of embryonic mesoderm

Answer: A



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71. Select the correctly matched pair

- A. chondroblast-matrix secreting cells of cartilage
- B. elastic cartilage-in pubic symphysis
- C. fibrous cartilage-pinna of ear
- D. hyaline cartilage-intervertebral disc

Answer: A



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72. Which one of the following statements is incorrect?

A. cartilage contains chondrin which makes

the matrix

B. matrix of bone is formed by ossein

C. haversian canal system is characteristic of mammalian bone

D. volkmann's canal connect the lacuna present in the cartilage

Answer: D



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73. The bone marrow is composed of

A. muscle fibres and adipose tissue

- B. areolar tissue and adipose tissue
- C. adipose tissue and calcified cartilage
- D. adipose tissue areolar tissue and blood vessel

Answer: D



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74. Identify the incorrect statement

- A. majority of adult tissues originate from endoderm
- B. multipolar neurons are found in human brain
- C. nodes of ranvier are characteristic of non myelinated neurons
- D. lungs are lined by mesothelial cell

Answer: B



75. Identify the incorrect statement

A. tendons connect skeletal muscle with bones

B. ligaments connect bones with bones

C. adipose tissue stores fat

D. matrix of cartilage is filled with mast cells and macrophages

Answer: D



76. Epithelial tissues arise from

- A. ectoderm
- B. endoderm
- C. mesoderm
- D. all of the above

Answer: D



77. In which of the following brown fat is found?

A. blubber of whales

B. hump of camel

C. newborn babies

D. none of the above

Answer: C



- A. fallopian tube
- B. small intestine
- C. stomach
- D. trachea

Answer: A



79. Assertion . True nucleus is absent in E. coli and other prokaryotes.

Reason. An undifferentiated, unorganised, fibrillar nucleus without any limiting membrane is found in prokaryotic cells.

A. Both Assertion and Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true but

Reason is not the correct explanation of

Assertion

- C. Assertion is true but Reason is false
- D. Both Assertion and Reason are false

Answer: A



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80. In each of the following questions a statement of Assertion is given followed by a corresponding statement of Reason just below it of the statements mark the correct answer as

Assertion(A):Powerhouse of a cell is mitochondria

Reason:ATP is produced in mitochondria

A. Both Assertion and Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true but

Reason is not the correct explanation of

Assertion

C. Assertion is true but Reason is false

D. Both Assertion and Reason are false

Answer: A



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81. In each of the following questions a statement of Assertion is given followed by a corresponding statement of Reason just below it of the statements mark the correct answer as

Assertion(A): Cell wall is not found in plant cell

Reason:Animal cells are covered by cell wall

A. Both Assertion and Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true but

Reason is not the correct explanation of

Assertion

- C. Assertion is true but Reason is false
- D. Both Assertion and Reason are false

Answer: D



82. Assertion: Histones are basic proteins of major importance in packaging of eukaryotic DNA, DNA and histones comprise chromatin forming the bulk of eukaryotic chromosome. Reason: Histones are five major types H_1, H_2A, H_2B, H_{30} and H_4

A. Both Assertion and Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true but

Reason is not the correct explanation of

Assertion

C. Assertion is true but Reason is false

D. Both Assertion and Reason are false

Answer: B



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83. In each of the following questions a statement of Assertion is given followed by a corresponding statement of Reason just below it of the statements mark the correct

answer as

Assertion(A):The number of cells in a multicellular organism is inversely proportional to size of body

Reason:all cells of biological world are alive

A. Both Assertion and Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true but

Reason is not the correct explanation of

Assertion

C. Assertion is true but Reason is false

D. Both Assertion and Reason are false

Answer: D



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84. Assertion: The quiescent centre acts as a reservoir of relatively resistant cells, which constitute a permanent source of active initials.

Reason: The cells of the inactive region of

quiescent centre become active, when the previous active initials get damaged.

A. Both Assertion and Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true but

Reason is not the correct explanation of

Assertion

C. Assertion is true but Reason is false

D. Both Assertion and Reason are false

Answer: A

85. Assertion: In collateral vascular bundles phloem is situated toward inner side.

Reason : In monocot stem, cambium is present

- A. Both Assertion and Reason is the correct explanation of Assertion
- B. Both Assertion and Reason are true but

 Reason is not the correct explanation of

Assertion

C. Assertion is true but Reason is false

D. Both Assertion and Reason are false

Answer: D



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86. Assertion: Fascicular vascular cambium, interfascicular cumbium and cork-cambium are examples of lateral miristems.

Reson: These are responsible for producing the secondary tissues.

A. Both Assertion and Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true but

Reason is not the correct explanation of

Assertion

C. Assertion is true but Reason is false

D. Both Assertion and Reason are false

Answer: B

