



BIOLOGY

BOOKS - JBD PUBLICATION

CELL: THE UNIT OF LIFE

Exercise

1. Smooth Endoplasmic reticulum is the major site for synthesis of:

A. carbohydrate

B. protein

C. lipid

D. nucleic acid

Answer:



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2. The main area of various types of activities of a cell is:

A. plasma membrane

B. mitochondrion

C. cytoplasm

D. nucleus

Answer:



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3. Middle lamella mainly contains:

A. mummamic acid

B. calcium pectate

C. phosphoglycerides

D. hemicellulose.

Answer:



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4. Cells divide and new cells are formed pre-existing cells. This concept was given by:

A. Matthias Schleiden

B. Theodore Schwann

C. Matthias Schleiden and Theodore Schwann

D. Rudolf Virchow.

Answer:



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5. Which of the following is correct in plant cell?

A. Bigger vacuole with rigid cell wall

B. Centriole take part in cell division

C. Centrosome are inactive in non-dividing
cell

D. Absence of cell membrane.

Answer:



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6. Mycoplasma is not inhibited by penicillin as
it lacks:

A. cell wall

B. sexual reproduction

C. ribosomes

D. nucleus.

Answer:



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7. DNA is present in:

A. chromosomes and dictyosomes

B. chloroplasts and lysosomes

C. mitochondria and chloroplasts

D. mitochondria and endoplasmic
reticulum.

Answer:



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8. which is true for animal cells?

A. They lack cell wall.

B. They have a definite structure.

C. They have an independent structure.

D. They can never have chloroplast.

Answer:



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9. Prokaryotic genome consists of:

A. DNA without histones

B. DNA or histones

C. DNA with histones

D. histones only.

Answer:



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10. Bacterial cells were first seen by:

A. Robert Brown

B. Robert Hooke

C. Leeuwenhock

D. R. Virchow.

Answer:



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11. Why viruses cannot be cultured in any artificial media?

- A. They lack DNA
- B. RNA is absent
- C. They are non-living

D. They do not have their own machinery.

Answer:



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12. A characteristics of prokaryotic cell is:

- A. absence of nuclear envelope
- B. presence of nuclear envelope
- C. presence of distinct chromosomes
- D. absence of genetic material.

Answer:



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13. Bacterial cells contains:

A. mitochondria

B. ER

C. chloroplast

D. none of these.

Answer:



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14. The cells of protistans and monerans can share one of the following:

A. vacuoles

B. lysosomes

C. ribosomes

D. mesosomes.

Answer:



15. Schleiden and Schwann are associated with

A. cell theory

B. theory of cell lineage

C. protoplasm as a physical basis of life

D. nucleus as a control centre of a cell.

Answer:



16. The prokaryotic cells are characterised by:

- A. a distinct nuclear membrane
- B. distinct chromosomes
- C. absence of chromatin material
- D. absence of nuclear membrane.

Answer:



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17. A prokaryotic structure is seen in:

- A. bacteria and Archaeobacteria
- B. blue green algae and mycoplasma
- C. rickettsias
- D. all of these.

Answer:



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18. Diffusion of charged molecules takes place along the:

- A. concentration gradient
- B. pressure gradient
- C. electrochemical gradient
- D. none of these.

Answer:



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19. Rate of diffusion of substances is affected by:

A. concentration of molecules diffusing.

B. temperature of the medium

C. the area of cross section of diffusion pathway

D. all the three.

Answer:



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20. Intecellular junctions in plant cells are:

A. desmosomes

B. plasmodesmata

C. tight junctions

D. mesosomes.

Answer:



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21. Infolds of plasma membrane in bacteria are:

A. episomes

B. desmosomes

C. endosomes

D. mesosomes.

Answer:



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22. Fine cylindrical outfolds of cell membrane are:

A. mesosomes

B. evaginations

C. microvilli

D. intercellular junction.

Answer:



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23. Cell membrane is assymmetric due to presence of:

A. different types of lipids in two layers.

B. different types of proteins on two faces
of the membrane

C. presence of glycoproteins on the
exposed surface.

D. all the three.

Answer:





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24. Protein molecules of cell membrane may act as:

- A. carrier molecules
- B. receptor molecules
- C. enzymes
- D. all the three.

Answer:



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25. Glycolipids and glycoproteins of membrane form a structure named:

- A. glucocoat
- B. glycocalyx
- C. lipocalyx
- D. glycosomes.

Answer:



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26. Each protein layer of membrane is:

A. 35\AA thick

B. 40\AA thick

C. 70\AA thick

D. 20\AA thick.

Answer:



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27. The integral proteins are in what percentage of total membrane proteins?

A. 0.2

B. 0.9

C. 0.7

D. 0.4

Answer:



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28. Proteins present in the plasma membrane are:

A. peripheral proteins

B. integral proteins

C. tunnel proteins

D. all the three.

Answer:



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29. Water enters into a cell when it is put into:

A. water

B. isotonic solution

C. hypotonic solution

D. both (A) and ©

Answer:



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30. Water comes out of a cell when it is placed in:

A. hypotonic solution

B. hypertonic solution

C. isotonic solution

D. water.

Answer:



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31. Intake of materials through the membrane at the expense of energy is called:

- A. transport
- B. facilitated diffusion
- C. active transport
- D. diffusion.

Answer:



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32. Transport of materials across the membrane along the concentration gradient but helped by a carrier, i.e.:

- A. active transport
- B. facilitated diffusion
- C. diffusion
- D. osmosis.

Answer:



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33. Engulfing of liquid materials by cell membrane is:

- A. endocytosis
- B. phagocytosis
- C. pinocytosis
- D. active transport.

Answer:



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34. Process of transport of materials across the membrane along the concentration gradient is:

- A. diffusion
- B. phagocytosis
- C. active transport
- D. endocytosis.

Answer:



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35. Entry of water in a cell takes place by:

A. endocytosis

B. exosmosis

C. osmosis

D. endosmosis.

Answer:



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36. Cell recognition is mainly done by which part of glycoproteins?

A. Carbohydrate part

B. Protein part

C. Lipid part

D. Carbohydrate and lipid both.

Answer:



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37. Cell recognition is mainly done by which components of cell membrane?

- A. Proteins
- B. Lipids
- C. Glycoproteins
- D. Lipoproteins

Answer:



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38. Desmosomes are related to:

- A. cell division
- B. cell exertion
- C. cell secretion
- D. cell connections

Answer:



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39. Who proposed fluid mosaic model of plasma membrane?

A. Daneille and Davson

B. Singer and Nicolson

C. Robertson

D. Singer and Roberston.

Answer:



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40. Chromatin is consisted of:

A. DNA

B. RNA and histones

C. RNA

D. DNA and histones.

Answer:



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41. Nucleosomes contain:

A. nucleus

B. histones

C. nucleolus

D. chromatin.

Answer:



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42. The main function associated with lysosome is:

A. replication

B. translocation

C. translation

D. digestion.

Answer:



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43. Cell theory is not applicable for:

A. bacteria

B. fungus

C. algae

D. virus.

Answer:



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Example

1. Fill in the blanks:

Main components of cytoskeleton are

microtubules, microfilaments and..... .



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2. Fill in the blanks:

Theare hollow and unbranched cylinders.



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3. Fill in the blanks:

Protonfilaments are made p of protein..... .



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4. Fill in the blanks:

The α and β tubulin molecules are arranged in.....manner.



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5. Fill in the blanks:

Colchicine.....assembly of microtubules.



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6. Fill in the blanks:

Myofilaments are prominent in.....cells.



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7. Fill in the blanks:

Microfilaments are made up of protein actin
and..... .



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8. Fill in the blanks:

Ciliary membrane is an extension of..... .



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9. Fill in the blanks:

.....is the basic arrangement of
microtubules in cilia and flagella.



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10. Fill in the blanks:

A basal body has.....pattern of microtubules.



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11. Who gave the term cell membrane?



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12. Name the group of organisms that do not possess intracellular membranous system.



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13. How much is the thickness of cell membrane?



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14. How many layered the cell membrane appears under electrons microscope?



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15. What are the two major components of a biomembrane?



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16. Who proposed the unit membrane concept?



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17. Which one is the best accepted model for plasma membrane?



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18. Name the coat present on the cell membrane.



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19. Name the semipemeable membrane present around the plant cell vacuole.



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20. What is the main differences in simple and fascillitated diffusion?



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21. What is a mesosome in aprokaryotic cell?

Mention the functions that it performs.



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22. What is the major difference between prokaryotic and eukaryotic cell?



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23. What is the relationship between cell size and metabolic rate?



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24. Define Central dogma.



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25. What are the factors which determine the cell size?



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26. What are the disadvantages of multicellularity?



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27. What are the advantages of multicellularity?



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28. What are the disadvantages of multicellularity?



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29. What are the limitations of cell theory?





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30. What are the functions of lysosomes ?



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31. Distinguish between

leucoplasts and Chromoplast



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32. What are the differences between mitochondria and chloroplast?



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33. What are the similarities between mitochondria and chloroplasts?



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34. Which characteristics feature make chloroplast semi-autonomous?



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35. Explain origin, chemical composition and function of centriole.



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36. What are the functions of cilia?



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37. State the differences between cilia and flagella.



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38. What are lysosomal storage diseases?



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39. What are the different types of vacuole?



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40. What are the functions of vacuole?



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41. What is a mesosome in a prokaryotic cell?

Mention the functions it performs.



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42. What are desmosomes?



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43. Define diffusion.



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44. What is the significance of diffusion?



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45. Write functions of cell wall.



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46. What is the role of membrane in cellular movement?



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47. Describe some specialization of cell membrane.



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48. Differentiate passive transport and active transport.



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49. Differentiate Pinocytosis and phagocytosis.



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50. Comment upon the asymmetry of cell membrane?



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51. What are the functions performed by Na^+ and K^+ pump?



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52. Cell is the basic unit of life. Discuss in brief.



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53. Draw a diagram showing structure of chloroplast.



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54. Explain the structure of eukaryotic cell.



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55. What are two functions of plasma membrane ?



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56. Explain fluid mosaic model?



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57. Match the following:

Column I	Column II
a) Cristae	(i) Flat membranous sacs in stroma
b) Cisternae	(ii) Infoldings in mitochondria
c) Thylakoids	(iii) Disc-shaped sacs in Golgi apparatus



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58. Which of the following is not correct?

A. Robert Brown discovered the cell.

B. Schleiden and Schwann formulated the cell theory.

C. Virchow explained that cells are formed from pre-existing cells.

D. A unicellular organism carries out its life activities within a single cell.

Answer:



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59. New cells generate from:

A. Bacterial fermentation

B. Regeneration of old cells

C. Pre-existing cells

D. Abiotic materials.

Answer:



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60. Which of the following is correct

A. Cells of all living organisms have a nucleus.

B. Both animal and plant cells have a well defined cell wall.

C. In prokaryotes there are no membrane bound organelles.

D. cells are formed de novo from abiotic materials.

Answer:



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61. What is a mesosome in a prokaryotic cell?

Mention the functions that it performs.



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62. What are the characteristics of prokaryotic cells?



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