Cell The Unit of Life

1. How many different proteins does the ribosome consist of? **(2023)**
   (a) 60
   (b) 40
   (c) 20
   (d) 80
2. Which of the following are NOT considered as the part of endomembrane system?
   A. Mitochondria
   B. Endoplasmic reticulum
   C. Chloroplasts
   D. Golgi complex
   E. Peroxisomes
   Choose the most appropriate answer from the options given below: **(2023)**
   (a) A. C and E only
   (b) A and D only
   (c) A, D and E only
   (d) B and D only
3. Which of the following functions is carried out by cytoskeleton in a cell? **(2023)**
   (a) Protein synthesis
   (b) Motility
   (c) Transportation
   (d) Nuclear division
4. Given below are two statements:
   Statement I:- In bacteria, the mesosomes are formed by the extensions of plasma membrane.
   Statement II: The mesosomes, in bacteria, help in DNA replication and cell wall formation.
   In the light of the above statements, choose the most appropriate answer from the options given below:
   (NEET Manipur2023)
   (a) Statement I is correct but Statement is incorrect
   (b) Statement I is incorrect but Statement II is correct
   (c) Both Statement I and Statement II are correct
   (d) Both Statement I and statement II are incorrect.
5. Which of the following statements are correct with respect of Golgi apparatus?
   (A) It is the important site of formation of glycoprotein and glycolipids.
   (B) It produces cellular energy in the form of ATP.
   (C) It modifies the protein synthesized by ribosomes on ER.
   (D) It facilitates the transport of ions.
   (E) It provides mechanical support.
   Choose the most appropriate answer from the options given below: **(2023)**
   (a) (B) and (C) only
   (b) (A) and (C) only
   (c) (A) and (D) only
   (d) (D) and (E) only
6. Match List-l with List-II:

List – I		**LIst – II**	
A	Porins	(i)	Pink coloured nodules
B	leg haemoglobin	(ii)	Lumen of thylakoid
C	H+ accumulation	(iii)	Amphibolic pathway
D	Respiration	(iv)	Huge pores in outer membrane of mitochondria

   Choose the correct answer from the options given below. **(2022)**
   (a) (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)
   (b) (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)
   (c) (a)-(iv), (b)-(i). (c)-(ii), (d)-(iii)
   (d) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
7. Match List-l with List-II:

List – I		LIst – II	
a	Bacteriophage ϕ x 174	(i)	48502 base pairs
b	Bacteriophage lambda	(ii)	5386 nucleotides
c	Escherichia coli	(iii)	33 x 109 base pairs
d	Haploid content of human DNA	(iv)	4.6 x 109 base pairs

   Choose the correct answer from the options given below: **(2022)**

(a) (a) (i) (b)-(ii), (c)-(iv), (d)-(iii)
(b) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
(c) (a) (ii), (b) (iv), (c)-(1), (d)-(iii)
(d) (a) (ii), (b), (c)-(iv), (d)-(iii)

8. Which type of substance would face difficulty to pass through the cell membrane? **(2022)**
(a) Substance soluble in lipids
(b) Substance with hydrophobic moiety
(c) Substance with hydrophilic moiety
(d) All substance irrespective of hydrophobic and hydrophilic moiety

9. If the pH in lysosomes is increased to alkaline, what will be the outcome? **(2022)**
(a) Lysosomal enzymes will be more active
(b) Hydrolytic enzymes will function more efficiently
(c) Hydrolytic enzymes will become inactive
(d) Lysosomal enzymes will be released into the cytoplasm

10. Arrange the following formed elements in the decreasing order of their abundance in blood in humans:
(a) Platelets
(b) Neutrophils
(c) Erythrocytes
(d) Eosinophils
(e) Monocytes
Choose the most appropriate answer from the options given below: **(2022)**
(a) (a), (c), (b), (d), (e)
(b) (c), (a), (b), (e), (d)
(c) (c), (b), (3), (e), (d)
(d) (d), (e), (b), (a), (c)

11. Which of the following statements with respect to Endoplasmic Reticulum is incorrect? **(2022)**
(a) RER has ribosomes attached to ER
(b) SER is devoid of ribosomes
(c) prokaryotes only RER are present in
(d) SER are the sites for lipid synthesis

12. Which of the following is an incorrect statement? **(2021)**
(a) Microbodies are present both in plant and animal cells.
(b) The perinuclear space forms a barrier between the materials present inside the nucleus and that of the cytoplasm.
(c) Nuclear pores act as passages for proteins and RNA molecules in both directions between nucleus and cytoplasm.
(d) Mature sieve tube elements possess a conspicuous nucleus and usual cytoplasmic organelles.

13. Match List-1 with List-2 **(2021)**

	List-1		List-2
A.	Cristae	(i)	Primary constriction in chromosome
B.	Thylakoids	(ii)	Disc-shaped sacs in Golgi apparatus
C.	Centromere	(iii)	Infoldings in mitochondria
D.	Cisternae	(iv)	Flattened membranous sacs in stroma of plastids

Choose the correct answer from the options given below.
(a) A-(i) B-(iv) C-(iii) D-(ii)
(b) A-(iii) B-(iv) C-(i) D-(ii)
(c) A-(ii) B-(iii) C-(iv) D-(i)
(d) A-(iv) B-(iii) C-(ii) D-(i)

14. When the centromere is situated in the middle of two equal arms of chromosomes, the chromosome is referred as: **(2021)**
(a) Telocentric
(b) Sub-metacentric
(c) Acrocentric
(d) Metacentric

15. The organelles that are included in the endomembrane system are: **(2021)**
(a) Endoplasmic reticulum, Golgi complex, Lysosomes and Vacuoles.
(b) Golgi complex, Mitochondria, Ribosomes and Lysosomes.
(c) Golgi complex, Endoplasmic reticulum, Mitochondria and Lysosomes.
(d) Endoplasmic reticulum, Mitochondria, Ribosomes and Lysosomes.

16. Which of the following statements about inclusion bodies is incorrect? **(2020)**
(a) These are involved in ingestion of food particles.
(b) They lie free in the cytoplasm
(c) These represent reserve material in cytoplasm
(d) They are not bound by any membrane

17. Which is the important site of formation of glycoproteins and glycolipids in eukaryotic cells? **(2020)**
    (a) Peroxisomes
    (b) Golgi bodies
    (c) Polysomes
    (d) Endoplasmic reticulum
18. The biosynthesis of ribosomal RNA occurs in: **(2020 Covid Re-NEET)**
    (a) Golgi apparatus
    (b) Microbodies
    (c) Nucleolus
    (d) Ribsosomes
19. Inclusion bodies of blue-green, purple and green photosynthetic bacteria are: **(2020 Covid Re-NEET)**
    (a) Gas vacuoles
    (b) Centrioles
    (c) Microtubules
    (d) Contractile vacuoles
20. Match the following columns and select the correct option; **(2020 Covid Re-NEET)**

	Column-I		Column-II
1.	Smooth Endoplasmic Reticulum	(i)	Protein synthesis
2.	Rough endoplasmic reticulum	(ii)	Lipid synthesis
3.	Golgi complex	(iii)	Glycosylation
4.	Centriole	(iv)	Spindle formation

    (1) (2) (3) (4)
    (a) (iii) (i) (ii) (iv)
    (b) (iv) (ii) (i) (iii)
    (c) (i) (ii) (iii) (iv)
    (d) (ii) (i) (iii) (iv)
21. The size of Pleuropneumonia - like Organism (PPLO) is: **(2020 Covid Re-NEET)**
    (a) 1 - 2 μm
    (b) 10 - 20 μm
    (c) 0.1 μm
    (d) 0.02 μm
22. The shorter and longer arms of a submetacentric chromosome are referred to as **(2019)**
    (a) s-arm and l-arm respectively
    (b) p-arm and q-arm respectively
    (c) q-arm and p-arm respectively
    (d) m-arm and n-arm respectively
23. Which of the following statements is not correct? **(2019)**
    (a) Lysosomes have numerous hydrolytic enzymes.
    (b) The hydrolytic enzymes of lysosomes are active under acidic pH.
    (c) Lysosomes are membrane bound structures.
    (d) Lysosomes are formed by the process of Packaging in the endoplasmic reticulum.
24. The concept of "Omnis cellula-e cellula" regarding cell division was first proposed by **(2019)**
    (a) Rudolf Virchow
    (b) Theodor Schwann
    (c) Schleiden
    (d) Aristotle
25. Which of the following statements regarding mitochondria is incorrect? **(2019)**
    (a) Outer membrane is permeable to monomers of carbohydrates, fats and proteins.
    (b) Enzymes of electron transport are embedded in outer membrane.
    (c) Inner membrane is convoluted with infoldings.
    (d) Mitochondrial matrix contains single circular DNA molecule and ribosomes.
26. Which among the following is not a prokaryote? **(2018)**
    (a) Saccharomyces
    (b) Mycobacterium
    (c) Nostoc
    (d) Oscillatoria
27. Which of the following is true for nucleolus? **(2018)**
    (a) Larger nucleoli are present in dividing cells.
    (b) It is a membrane-bound structure.
    (c) It takes part in spindle formation.
    (d) It is a site for active ribosomal RNA Synthesis
28. The Golgi complex participates in **(2018)**
    (a) Fatty acid breakdown
    (b) Formation of secretory vesicles
    (c) Respiration in bacteria
    (d) Activation of amino acid
29. Which of the following events does not occur in rough endoplasmic reticulum? **(2018)**
    (a) Protein folding
    (b) Protein glycosylation
    (c) Cleavage of signal peptide
    (d) Phospholipid synthesis

30. Many ribosomes may associate with a single mRNA to form multiple copies of a polypeptide simultaneously. Such strings of ribosomes are termed as **(2018)**
(a) Polysome
(b) Polyhedral bodies
(c) Plastidome
(d) Nucleosome

31. Select the incorrect match: **(2018)**

(a)	Lampbrush chromosomes	-	Diplotene bivalents
(b)	Allosomes	-	Sex chromosomes
(c)	Submetacentric chromosomes	-	L-shaped chromosomes
(d)	Polytene chromosomes	-	Oocytes of amphibians

32. Which of the following cell organelles is responsible for extracting energy from carbohydrates to form ATP? **(2017)**
(a) Lysosome
(b) Ribosome
(c) Chloroplast
(d) Mitochondrion

33. Which of the following components provides sticky character to the bacterial cell? **(2017)**
(a) Cell wall
(b) Nuclear membrane
(c) Plasma membrane
(d) Glycocalyx

34. The correct sequence of involvement of cell organelles in secretion of proteins from the cell is: **(2017)**
(a) Nucleus → Endoplasmic reticulum → Ribosomes → Golgi apparatus → Secretory vesicles → Plasma membrane
(b) Nucleus → Ribosomes → Endoplasmic reticulum → Golgi apparatus → Secretory vesicles → Plasma membrane
(b) Nucleus → Ribosomes → Endoplasmic reticulum → Lysosomes → Plasma membrane
(d) Nucleus → Endoplasmic reticulum → Ribosomes → Golgi apparatus → Lysosomes → Plasma membrane

35. Which of the following pathways is involved for packaging of secretory proteins? (2017)
(a) RER → Trans face of Golgi body → Cis face of Golgi body → Secretory vesicles
(b) Trans face of Golgi body → Cis face of Golgi body → RER → SER → Secretory veiscles
(c) RER → Cis face of Golgi body → Trans face of Golgi body → Secretory vesicles
(d) Cis face of Golgi body → Trans face of Golgi body → RER → Secretory vesides

36. The type of ribosomes is same in **(2017)**
(a) Eukaryotic cytoplasm, mitochondria and endoplasmic reticulum
(b) Cytoplasm of eukaryotic cells, their mitrochondria and chloroplasts
(c) Cytoplasm of eukaryotic cells, their chloroplasts and microbodies
(d) Prokaryotes, mitochondria and Chloroplasts

37. Reserved material in prokaryotic cells is stored as: **(2017)**
(a) Basal body
(b) Inclusion bodies
(c) Mesosome
(d) Polysome

38. A complex of ribosomes attached to a single strand of mRNA is known as: **(2017)**
(a) Okazaki fragment
(b) Polymer
(c) Polyribosome
(d) Polypeptide

39. A cell organelle containing hydrolytic enzymes is: **(2016 - II)**
(a) Ribosome
(b) Mesosome
(c) Lysosome
(d) Microsome

40. Select the wrong statement: **(2016 - II)**
(a) Cyanobacteria lack flagellated cells.
(b) Mycoplasma is a wall-less microorganism
(c) Bacterial cell wall is made up of peptidoglycan.
(d) Pilli and fimbriae are mainly involved in motility of bacterial cells

41. Select the mismatch: **(2016 - II)**
(a) Protists - Eukaryotes
(b) Methanogens - Prokaryotes
(c) Gas vacuoles - Green bacteria
(d) Large central vacuoles - Animal cells

42. Microtubules are the constituents of: **(2016 - I)**
(a) Cilia, Flagella and Peroxisomes
(b) Spindle fibres, Centrioles and Cilia
(c) Centrioles, Spindle fibres and Chromatin
(d) Centrosome, Nucleosome and Centrioles

43. Spindle fibres attach on to: **(2016 - I)**
(a) Telomere of the chromosome
(b) Kinetochore of the chromosome

(c) Centromere of the chromosome
(d) Kinetosome of the chromosome

44. Mitochondria and chloroplast are
(A) Semi-autonomous organelles
(B) Formed by division of pre-existing organelles and they contain DNA but lack protein synthesizing machinery
Which one of the following options is correct? **(2016 - I)**
(a) Both (A) and (B) are correct
(b) (B) is true but (A) is false
(c) (A) is true but (B) is false
(d) Both (A) and (B) are false

45. Which one of the following is not an inclusion body found in prokaryotes? **(2015)**
(a) Glycogen granule
(b) Polysome
(c) Phosphate granule
(d) Cyanophycean granule

46. The chromosomes in which centromere are situated close to one end are: **(2015)**
(a) Telocentric
(b) Sub-metacentric
(c) Metacentric
(d) Acrocentric

47. Select the correct matching in the following pairs: **(2015)**
(a) Rough ER – Synthesis of glycogen
(b) Rough ER – Oxidation of fatty acids
(c) Smooth ER – Oxidation of phospholipids
(d) Smooth ER – Synthesis of lipids

48. The structures that are formed by stacking of organized flattened membranous sacs in the chloroplasts are: **(2015)**
(a) Stroma lamellae
(b) Stroma
(c) Cristae
(d) Grana

49. Nuclear envelope is a derivative of: **(2015)**
(a) Microtubules
(b) Rough endoplasmic reticulum
(c) Smooth endoplasmic reticulum
(d) Membrane of Golgi complex

50. DNA is not present in: **(2015)**
(a) Nucleus
(b) Mitochondria
(c) Chloroplast
(d) Ribosomes

51. Match the columns and identify the correct option. **(2015 Re)**

	Column I		Column II
A.	Thylakoids	(i)	Disc-shaped sacs in Golgi apparatus
B.	Cristae	(ii)	Condensed structure of DNA
C.	Cisternae	(iii)	Flat membranous sacs in Stroma
D.	Chromatin	(iv)	Infoldings in mitochondria

(a) A-(iii), B-(iv), C-(i), D-(ii)
(b) A-(iii), B-(i), C-(iv), D-(ii)
(c) A-(iii), B-(iv), C-(ii), D-(i)
(d) A-(iv), B-(iii), C-(i), D-(ii)

52. Cellular organelles with membranes are: **(2015 Re)**
(a) Chromosomes, ribosomes and endoplasmic reticulum
(b) Endoplasmic reticulum, ribosomes and nuclei
(c) Lysosomes, Golgi apparatus and mitochondria
(d) Nuclei, ribosome and mitochondria

53. Balbiani rings are sites of: **(2015 Re)**
(a) Nucleotide synthesis
(b) Polysaccharide synthesis
(c) RNA and protein synthesis
(d) Lipid synthesis

54. Chromatophores take part in: **(2015 Re)**
(a) Growth
(b) Movement
(c) Respiration
(d) Photosynthesis

55. The structures that help some bacteria to attach to rocks and / or host tissues are: **(2015 Re)**
(a) Fimbriae
(b) Mesosomes
(c) Holdfast
(d) Rhizoids

56. Which of the following structures is not found in a prokaryotic cell? **(2015 Re)**
(a) Ribosome
(b) Mesosome
(c) Plasma membrane
(d) Nuclear envelope

57. Which of the following is not membrane-bound? **(2015 Re)**
(a) Ribosomes
(b) Lysosomes
(c) Mesosomes

(d) Vacuoles

58. The motile bacteria are able to move by: **(2014)**
    (a) Pili
    (b) Fimbriae
    (c) Flagella
    (d) Cilia
59. The solid linear cytoskeleton elements having a diameter of 6 nm and made up of a single type of monomer are known as: **(2014)**
    (a) Lamins
    (b) Microtubules
    (c) Microfilaments
    (d) Intermediate filaments
60. The osmotic expansion of a cell kept in water is chiefly regulated by: **(2014)**
    (a) Ribosomes
    (b) Mitochondria
    (c) Vacuoles
    (d) Plastids
61. Which structures perform the function of mitochondria in bacteria? **(2014)**
    (a) Mesosomes
    (b) Nucleoid
    (c) Ribosomes
    (d) Cell wall
62. Match the following and select the correct answer: **(2014)**

A.	Centriole	i.	Infoldings in mitochondria
B.	Chlorophyll	ii.	Thylakoids
C.	Cristae	iii.	Nucleic acids
D.	Ribozymes	iv.	Basal body cilia or flagella

    (a) A-iv B-iii C-i D-ii
    (b) A-iv B-ii C-i D-iii
    (c) A-i B-ii C-iv D-iii
    (d) A-i B-iii C-ii D-iv
63. Which one of the following organelle in the figure correctly matches with its function? **(2013)**

    (a) Rough endoplasmic reticulum, protein synthesis
    (b) Rough endoplasmic reticulum, formation of glycoproteins
    (c) Golgi apparatus, protein synthesis
    (d) Golgi apparatus, formation of Glycolipids
64. A major site for synthesis of lipids is: **(2013)**
    (a) Nucleoplasm
    (b) RER
    (c) SER
    (d) Symplast
65. The Golgi complex plays a major role: **(2013)**
    (a) In post translational modification of proteins and glycosidation of lipids
    (b) In trapping the light and transforming it into chemical energy
    (c) In digesting proteins and carbohydrates
    (d) As energy transferring organelles

Answer Key

S1. Ans. (d)
S2. Ans. (a)
S3. Ans. (b)
S4. Ans. (c)
S5. Ans. (b)
S6. Ans. (c)
S7. Ans. (d)
S8. Ans. (c)
S9. Ans. (c)
S10. Ans. (b)
S11. Ans. (c)
S12. Ans. (d)
S13. Ans. (b)
S14. Ans. (a)
S15. Ans. (a)
S16. Ans. (b)
S17. Ans. (c)
S18. Ans. (d)
S19. Ans. (c)
S20. Ans. (b)
S21. Ans. (d)
S22. Ans. (a)
S23. Ans. (b)
S24. Ans. (a)
S25. Ans. (d)
S26. Ans. (a)
S27. Ans. (d)
S28. Ans. (b)
S29. Ans. (d)
S30. Ans. (a)
S31. Ans. (d)
S32. Ans. (d)
S33. Ans. (d)
S34. Ans. (b)
S35. Ans. (c)
S36. Ans. (d)
S37. Ans. (b)
S38. Ans. (c)
S39. Ans. (c)
S40. Ans. (d)
S41. Ans. (d)
S42. Ans. (b)
S43. Ans. (b)
S44. Ans. (c)
S45. Ans. (b)
S46. Ans. (d)
S47. Ans. (d)
S48. Ans. (d)
S49. Ans. (b)
S50. Ans. (d)
S51. Ans. (a)
S52. Ans. (c)
S53. Ans. (c)
S54. Ans. (d)
S55. Ans. (a)
S56. Ans. (d)
S57. Ans. (a)
S58. Ans. (c)
S59. Ans. (c)
S60. Ans. (c)
S61. Ans. (a)
S62. Ans. (b)
S63. Ans. (a)
S64. Ans. (c)
S65. Ans. (a)

Solutions

S1. Ans.(d)

The ribosome consists of structural RNAs and about 80 different proteins.

S2. Ans.(a)

The endomembrane system in a cell includes: The nuclear envelope, The endoplasmic reticulum (ER), The Golgi apparatus (Golgi complex), Lysosomes, Vesicles, The plasma membrane

S3. Ans.(b)

An elaborate network of filamentous proteinaceous structures consisting of microtubules, microfilaments and intermediate filaments present in cytoplasm is collectively referred to as the cytoskeleton. It is involved in many functions such as mechanical support, motility, maintenance of the shape of the cell.

S4. Ans.(c)

Option C: Both Statement I and Statement II are correct

S5. Ans.(b)

A critical role in the processing and packaging of proteins and lipids following their synthesis in the endoplasmic reticulum. It also has a role in the formation of glycoproteins and glycolipids.

(A) and (C) only.

S6. Ans.(c)

Porins are huge pores in outer membrane of mitochondria. Leg haemoglobin turns the nodules pink in colour

H+ accumulation in lumen of thylakoid occurs during photosynthetic electron transport.

Respiration is an amphibolic pathway.

S7. Ans.(d)

Genetic material of Bacteriophage x 174 contains 5386 nucleotides

Bacteriophage lambda contains 48502 base pairs

Escherichia coli contains 4.6 x 10⁶ base pairs

Haploid content of human DNA contains 3.3 × 10⁹ base pairs

S8. Ans.(c)

Substances that have a hydrophilic moiety find it difficult to pass through the plasma membrane; thus, their movement has to be facilitated.

S9. Ans.(c)

Lysosomes contain hydrolytic enzymes which become active at acidic pH.

If pH in lysosomes is increased to alkaline or basic then hydrolytic enzymes will become inactive.

S10. Ans.(b)

A healthy adult man has, on an average, 5 millions to 5.5 millions of RBCs (erythrocytes) mm of blood.

S11. Ans.(c)

In prokaryotes, ER is absent be it RER or SER.

S12. Ans.(d)

Mature sieve tube elements do not have nucleus but have cytoplasm. (Anucleated living cells).

S13. Ans.(b)

A-(iii) B-(iv) C-(i) D-(ii)

S14. Ans.(d)

I.	Telocentric	Centromere placement very close to the top, p arms barely visible if visible at all.
II.	Acrocentric	q arms are still much longer than the p arms, but the p arms are

		longer than those in telocentric.
III.	Submetacentric	p and q arms are very close in length but not equal.
IV.	Metacentric	p and q arms are equal in length.

S15. Ans.(a)

Endomembrane system includes the endoplasmic reticulum (ER), Golgi apparatus, and lysosomes. Vesicles also allow the exchange of membrane

S16. Ans.(a)

In prokaryotic cells, reserve material is stored in the cytoplasm as inclusion bodies. These are unbound by

any membrane system and are found floating around in the cytoplasm.

Food particle ingestion is aided by lysosomes.

S17. Ans.(b)

The production of glycoproteins and glycolipids takes place in the Golgi bodies.

S18. Ans.(c)

Nucleolus is a location where active ribosomal RNA synthesis takes place. In cells that are actively synthesising proteins, nucleoli are larger and more

numerous.

S19. Ans.(a)

In prokaryotic cells, reserve material is stored in the cytoplasm as inclusion bodies. Phosphate granules,

cyanophycean granules, and glycogen granules, for example, are not bound by any membrane system and lie free in the cytoplasm. Blue green, purple, and

green photosynthetic bacteria have gas vacuoles.

S20. Ans.(d)

The smooth endoplasmic reticulum (SER) is the primary location for lipid production. SER produces

lipid-like steroidal hormones in animal cells.

RER is found in a lot of cells that are involved in protein synthesis and secretion. They are long and

contiguous with the nucleus's outer membrane.

The Golgi apparatus is a key site for the production of glycoproteins and glycolipids. During cell division in animal cells, the centrioles

create the basal body of cilia or flagella, as well as spindle fibres that give rise to the spindle apparatus.

S21. Ans.(c)

Bacteria, blue-green algae, mycoplasma, and PPLO are examples of prokaryotic cells (Pleuro Pneumonia Like Organisms). PPLO has a diameter of 0.1 μm.

S22. Ans.(b)

The 'p' arm (p = petite, i.e. short) and the 'q' arm (q = long) of the chromosome are the shorter and longer arms, respectively.

S23. Ans.(d)

Lysosomes bud off from transface to Golgi bodies Precursor of lysosomal enzymes are synthesized

by RER and then send to Golgi bodies for further processing. So, the not correct answer is Lysosomes are formed

by the process of packaging in the endoplasmic reticulum.

S24. Ans.(a)

Rudolf Virchow was the first to introduce the concept of "Omnis cellula-e cellula" in relation to cell theory.

S25. Ans.(b)

Electron transport enzymes are situated in the inner membrane of mitochondria.

S26. Ans.(a)

Saccharomyces is a yeast genus.

S27. Ans.(d)

In the nucleus of a cell, the nucleolus is a tiny compact spherical structure. Ribosome biosynthesis takes place here.

S28. Ans.(b)

The Golgi complex (apparatus), like the ER, is a packaging organelle. It concentrates and packs proteins and lipids from the ER into secretory vesicles after modifying them.

S29. Ans.(d)

Phospholipid production occurs in the cystosol close to the ER membrane.

Phospholipids are made in the smooth endoplasmic reticulum from phosphatidic acid and 1, 2 diacylglycerol.

S30. Ans.(a)

Polysome or polyribosome is a cluster of ribosomes bound together by a strand of mRNA in

S31. Ans.(d)

Polytene chromosomes are present in salivary glands of Dipteran larvae, according to NCERT

S32. Ans.(d)

Mitochondria is where carbohydrates are aerobically oxidised to produce ATP.

S33. Ans.(d)

The glycocalyx or slime layer is responsible for the bacterial wall's stickiness. Glycoproteins abound in

this stratum.

S34. Ans.(b)

The nucleus, ribosomes, endoplasmic reticulum, golgi apparatus, secretory vesicles, and plasma membrane

are the correct order of cell organelles involved in protein secretion.

S35. Ans.(c)

Materials from the RER that will be packaged as vesicles fuse with the cis face of the Golgi apparatus

and migrate towards the developing face before being released from the trans face.

S36. Ans.(d)

70S ribosomes are found in mitochondria, chloroplasts, and bacterial ribosomes.

S37. Ans.(b)

NCERT (XI) Ch - 8, Pg. 129 In prokaryotic cells, reserve material is stored in the cytoplasm as inclusion

bodies.

S38. Ans.(c)

In the cytoplasm, a polyribosome or polysome is formed when many ribosomes connect to a single strand of mRNA.

S39. Ans.(c)

Almost all types of hydrolytic enzymes (hydrolases – lipases, proteases, carbohydrases) were discovered to

be abundant in the isolated lysosomal vesicles, which are best active at acidic pH.

S40. Ans.(d)

The pili are tubular elongated structures formed of a unique protein. Fimbriae are small bristle-like threads

that emerge from the cell's surface. They are known to aid in the attachment of bacteria to rocks in streams

as well as host tissues in some bacteria, but they do not play a role in motility.

Plant cells have cell walls, plastids, and a big central vacuole, which are lacking in animal cells.

S41. Ans.(d)

Plant cells have cell walls, plastids, and a large central vacuole, which are absent in animal cells. Animal

cells, on the other hand, have centrioles, which are lacking in practically all plant cells.

S42. Ans.(b)

Microtubules are the constituents of spindle fibres, centrioles, and cilia.

S43. Ans.(c)

Spindle fibres adhere to the chromosome's kinetochore.

S44. Ans.(c)

Mitochondria and chloroplast are semi-autonomous organelles that include single circular DNA, a few RNA molecules, ribosomes (70S), and other proteins- synthesis-related components.

S45. Ans.(b)

In prokaryotic cells, reserve material is retained in the cytoplasm as inclusion bodies, such as phosphate granules, glycogen granules, and cyanophycean granules.

S46. Ans.(d)

The centromere is located in acrocentric chromosomes. At its ends, forming one extremely short and one extremely long arm.

S.47 Ans.(d)

RER stands for protein synthesis.

SER stands for lipid and steroidal hormone synthesis.

S48. Ans.(d)

The stroma contains a number of thylakoids, which are flattened membrane sacs that are organised.

Thylakoids are stacked in grana, which are stacks of coins.

The nucleus is a double membrane bound organelle.

S49. Ans.(b)

Its outer membrane is normally contiguous with the ribosome-bearing endoplasmic reticulum. Except for ribosomes, the nucleus, chloroplast, and mitochondria all carry DNA.

S50. Ans.(d)

Ribosomes are made up of ribonucleic acid (RNA) and proteins and do not have a membrane surrounding them.

S51. Ans.(a)

The stroma of chloroplasts contains a number of organised flattened membrane sacs called thylakoids.

The cristae form a series of infoldings in the inner mitochondrial membrane as it moves towards the matrix. Golgi bodies are made up of multiple flat, disc-shaped sacs or cisternae that are stacked parallel to one other and range in diameter from 0.5 to 1.0 m.

S52. Ans.(c)

Ribosomes are the granular structures first observed by George Palade. They are not encased in any kind of membrane.

S53. Ans.(c)

Polytene chromosomes were discovered for the first time in the salivary gland of Chironomus tantans. They have puff or balbiani rings that create lateral

loops where DNA becomes active and copies of RNA are produced.

S54. Ans.(d)

Other membrane expansions into the cytoplasm of some prokaryotes, such as cyanobacteria, are called

chromatophores, and they carry photosynthetic pigments.

S55. Ans.(a)

Fimbriae are small bristle-like fibres that emerge from the cell's surface. They are known to aid in the bacteria's adhesion to rocks in streams as well as host tissues.

S56. Ans.(d)

Membrane-bound organelles do not exist in prokaryotic cells.

They don't have a nucleus that is attached to the membrane.

S57. Ans.(a)

Riibosomes are granular formations that are primarily made up of RNA and proteins. They are not encased in any kind of membrane.

S58. Ans.(c)

Flagella helps with motility. Pili and fimbriae are not involved in motility.

S59. Ans.(c)

Microfilament is a single monomer with a diameter of 5-7 nm.

S60. Ans.(c)

Osmoregulation is the purpose of vacuoles.

S61. Ans.(a)

In prokaryotes, similar to mitochondria, the mesosome aids in respiration.

S62. Ans.(b)

On flagella, the centriole is the basal body cilia.

Infoldings in mitochondria - Chlorophyll – Thylakoid Cristae Nucleic acid ribozymes

SER: Ribosome absent, engaged in lipid synthesis

S63. Ans.(a)

SER: Ribosome absent, involved in lipid synthesis

RER: Ribosomes are present and play a role in protein synthesis.

S64. Ans.(c)

SER is the location of lipid production.

S65. Ans.(a)

Plays a key function in protein post-translational modification and lipid glycosidation. It's also useful

for packaging.