



Roll No. of Candidate _____

Name of Candidate _____

STARS ENTRY TEST SYSTEM-2021 (MDCAT)

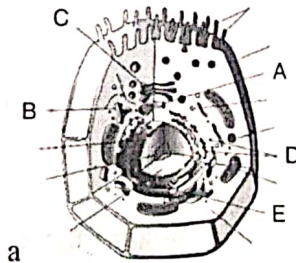
Test Code: B-1 (CELL STRUCTURE AND FUNCTION)

Time Allowed: 50 min

BIOLOGY

1. Which side in a cell does luminal and extra luminal compartments are situated respectively?
A) Cytoplasm, inside ER
B) Cytoplasm, plasma membrane
C) Inside ER, cytoplasm
D) Nucleus, cytoplasm
2. The rRNA are actively synthesized in _____.
A) Nucleoplasm
B) nucleus
C) Nucleolus
D) All of these
3. Eukaryotic cells usually contain _____.
A) Endoplasmic reticulum
B) Mitochondria
C) Nucleus
D) All the above
4. Match List-I with List-II and select the correct answer by using the codes given below:
- | | |
|-----------------|-----------------------------|
| List-I | List-II |
| A) Ribosome | 1. Suicidal bag of cells |
| B) Lysosome | 2. Protein factory of cells |
| C) Mitochondria | 3. Controller of cell |
| D) Nucleus | 4. Power house of cell |
- Codes:**
- | | | | |
|------|---|---|---|
| A | B | C | D |
| A) 2 | 1 | 4 | 3 |
| B) 4 | 3 | 2 | 1 |
| C) 1 | 4 | 3 | 2 |
| D) 3 | 2 | 1 | 4 |
6. No nucleus, DNA without histone proteins, absence of membrane bound cell organelles are the characters of Kingdom?
A) Protista
B) Fungi
C) Monera
D) Plantae
7. A prokaryotic cell can be distinguished from a eukaryotic cell. Which of the options, A – D, would only be found in a eukaryotic cell?
A) A nucleus
B) Ribosomes
C) A cell surface membrane
D) DNA
8. Cellular organelle(s) involved in the regulation of Ca^{2+} level in the cell _____.
A) Mitochondria
B) Endoplasmic Reticulum
C) Smooth Endoplasmic Reticulum
D) Mitochondria and vesicles
9. The Rough Endoplasmic Reticulum (RER) in the cells are because of the presence of:
A) Mitochondria associated with ER
B) Volutin granules on the surface of ER
C) Ribosomes on the surface of ER
D) Sulphur granules on the surface of ER
10. Which of the following organelles is a major site of steroid genesis?
A) Peroxisomes
B) Ribosomes
C) Smooth endoplasmic reticulum
D) Rough endoplasmic reticulum
11. In mitochondrion, the ATP synthase is present at _____.
A) Inner membrane
B) Matrix
C) Outer membrane
D) Inter-membrane space

12. The number of mitochondria in a cell depends upon:
 A) Size of cell
 B) Type of Cell
 C) Shape of cell
 D) Physiological working of a cell
13. Which of the following cell organelles is responsible for extracting energy from carbohydrates to form ATP?
 A) Ribosome
 B) Mitochondrion
 C) Chloroplast
 D) Lysosome
14. How is new mitochondria formed by the pre-existing ones?
 A) Mitosis
 B) Conjugation
 C) Fission
 D) Budding
15. The function of the mitochondrial cristae is to _____.
 A) Prevent escape O₂ gas
 B) Store co-enzyme-A
 C) Increase the surface area of the inner membrane
 D) Increase the availability of phospholipids
16. _____ is the largest organelle in a matured RBC.
 A) Nucleus
 B) Golgi complex
 C) Mitochondria
 D) None of these
17. You would expect a cell with an extensive Golgi apparatus to _____.
 A) Make a lot of ATP
 B) Move actively
 C) Secrete a lot of material
 D) Store large
18. Golgi apparatus is produced from which organelle?
 A) Endoplasmic reticulum
 B) Mitochondria
 C) Plasma membrane
 D) Ribosomes
19. _____ is a site for synthesis of glycolipids and glycoproteins.
 A) Golgi apparatus
 B) Plastid
 C) Lysosome
 D) Mitochondria
20. Along formation of secretory vesicles, the Golgi complex is also concerned with the formation of:
 A) Nucleus
 B) Endoplasmic Reticulum
 C) Plastids
 D) Lysosomes
21. Which of the following is concerned with the synthesis of lipids and steroids in the cell?
 A) Rough ER
 B) Golgi apparatus
 C) Smooth ER
 D) Lysosome
22. Identify the A, B, C, D and E in the figure.



- A) A-Smooth endoplasmic reticulum, B-Centriole, C-Golgi apparatus, D-Rough endoplasmic reticulum, E-Ribosomes
 B) A-Centriole, B-Smooth endoplasmic reticulum, C-Golgi apparatus, D-Ribosomes, E-Rough endoplasmic reticulum
 C) A-Rough endoplasmic reticulum, B-Smooth endoplasmic reticulum, C-Ribosomes, D-Centriole, E-Golgi apparatus
 D) A-Centriole, B-Rough endoplasmic reticulum, C-Golgi apparatus, D-Smooth endoplasmic reticulum, E-Ribosomes
24. Which of the following is associated with endocytosis?
 A) Autolysosome
 B) Chloroplast
 C) Peroxisome
 D) Phagolysosome
25. The subunits of chloroplastic ribosomes are _____.
 A) 50S + 30S
 B) 40S + 30S
 C) 60S + 40S
 D) 60S + 50S
26. Which cell organelle is absent in Kingdom fungi?
 A) Chloroplast
 B) Nucleus
 C) Ribosome
 D) Golgi body
27. Tonoplast is a membrane surrounding the:
 A) Cytoplasm
 B) Vacuole

Which of the following is found in prokaryotic cells?

- A) Cytoplasm
- B) Chloroplast
- C) Mitochondria
- D) All

Which of the following is absent from prokaryotic cells?

- A) Plasmids
- B) Rough endoplasmic reticulum
- C) Cell wall
- D) Ribosomes

Which one of the following substances is unable to traverse the plasma membrane by simple diffusion?

- A) O₂
- B) Na⁺
- C) N₂
- D) Glycerol

Which of the following is the most abundant compound in plasma membrane by number?

- A) Phospholipids
- B) Carbohydrates
- C) Protein
- D) All of these

The uphill movement of molecules through membrane _____.

- A) Don't require energy
- B) Require high contents of solute
- C) Require energy
- D) Required low contents of solute

Which one of the following organelles always contains DNA?

- A) Centriole
- B) Lysosome
- C) Golgi apparatus
- D) Mitochondrion

Which one of the following would exocrine cells be expected to contain as a result of their function?

- A) Increased amounts of DNA
- B) Increased amounts of rough endoplasmic reticulum
- C) Increased numbers of lysosomes
- D) Large mitochondria

The nuclei of both plant and animal cells contain one or more dense bodies known as nucleoli. Which one of the following correctly describes the function of nucleoli?

- A) The formation of new DNA molecules
- B) The organization of the spindle during nuclear division
- C) The replication of mitochondria following nuclear division
- D) The formation of ribosomes

Which of the following, A, B, C or D, correctly shows structures which are found in a eukaryotic cell? (✓ = present; x = absent)

	Nuclear Membranes	Mitochondria	Ribosomes
A)	x	x	x
B)	x	✓	x
C)	✓	x	x
D)	✓	✓	✓

What distinguishes a prokaryotic cell from a eukaryotic cell?

- A) Prokaryotic cells have a cell wall and a nucleus
- B) Prokaryotic cells have no membrane bound organelles
- C) Prokaryotic cells have a centriole
- D) Prokaryotic cells have no ribosomes

Which of the following is present in all eukaryotic cells?

- A) Cell wall
- B) Flagellum
- C) diploid nucleus
- D) Membrane bound organelles

Pancreas tissue from a freshly killed rat was removed, placed in warm isotonic saline solution and radioactively labelled amino acids were added. At intervals after adding the amino acids, samples of the tissue were removed, sections cut and the sites of radioactivity determined.

Which one of the following represents the order in which radioactivity appeared in organelles?

A)	Golgi apparatus	Smooth endoplasmic reticulum	Rough endoplasmic reticulum	Secretory vesicles
B)	Golgi apparatus	Rough endoplasmic reticulum	Smooth endoplasmic reticulum	Secretory vesicles
C)	Rough endoplasmic reticulum	Smooth endoplasmic reticulum	Golgi apparatus	Secretory vesicles
D)	Rough endoplasmic reticulum	Smooth endoplasmic reticulum	Secretory vesicles	Golgi apparatus

40. **From which cell organelle are nucleic acid absent?**
 A) Chloroplast
 B) Mitochondrion
 C) Golgi apparatus
 D) Ribosome
41. **How do mitochondria differ from chloroplasts?**
 A) ATP is synthesized only in mitochondria
 B) DNA is found only in chloroplasts
 C) Membrane bound enzymes are found only in mitochondria
 D) NADP is found only in chloroplasts
42. **In eukaryotic cells, transcription occurs in the nucleus and**
 A) Endoplasmic reticulum
 B) Mitochondrion
 C) Golgi apparatus
 D) Ribosome
43. **What identifies a cell as a prokaryote?**
 A) The DNA is associated with protein
 B) The DNA is in the form of a double spiral
 C) The DNA is in a circular form
 D) The DNA is surrounded by a membrane system
44. **Prokaryotic cell is one, which lacks all except ~~does not have~~**
 A) Proper nucleus
 B) Proper nucleus and most of cell organelles
 C) Endoplasmic reticulum & mitochondria
 D) Cell wall
45. **In the fluid – mosaic membrane model, the phospholipid bilayer**
 A) Is sandwiched between two protein layers
 B) Lies on top of a single protein layer
 C) Has proteins embedded in it
 D) Is covered by a single protein layer
46. **The main function of plasma membrane is to**
 A) Maintain the cell shape and size
 B) Control of all cellular activity
 C) Regulate the flow of materials into and outside the cells
 D) Store cell material
47. **Liquid food drinking is**
 A) Pinocytosis
 B) Imbibition
 C) Phagocytosis
 D) Exocytosis
48. **The main difference between active and passive transport across cell membranes is that**
 A) Passive transport is nonselective
 B) Passive transport requires a concentration gradient across the cell membrane where as active transport requires metabolic energy
 C) Passive transport is confined to anions and active transport for cations only
 D) Active transport occurs more rapidly than passive transport
49. **Which organelle changes the chemical energy into utilizable energy?**
 A) Lysosome
 B) Endoplasmic reticulum
 C) Mitochondria
 D) Microsome
50. **Eukaryotic cell differs from prokaryotic cell in having**
 A) Cell wall
 B) Cell membrane
 C) 80 S Ribosome
 D) 70 S Ribosome

Biology (BI)

SUBJECT

Biology

1	(A)	(B)	(C)	(D)
2	(A)	(B)	(C)	(D)
3	(A)	(B)	(C)	(D)
4	(A)	(B)	(C)	(D)
5	(A)	(B)	(C)	(D)
6	(A)	(B)	(C)	(D)
7	(A)	(B)	(C)	(D)
8	(A)	(B)	(C)	(D)
9	(A)	(B)	(C)	(D)
10	(A)	(B)	(C)	(D)
11	(A)	(B)	(C)	(D)
12	(A)	(B)	(C)	(D)
13	(A)	(B)	(C)	(D)
14	(A)	(B)	(C)	(D)
15	(A)	(B)	(C)	(D)
16	(A)	(B)	(C)	(D)
17	(A)	(B)	(C)	(D)
18	(A)	(B)	(C)	(D)
19	(A)	(B)	(C)	(D)
20	(A)	(B)	(C)	(D)

21	(A)	(B)	(C)	(D)
22	(A)	(B)	(C)	(D)
23	(A)	(B)	(C)	(D)
24	(A)	(B)	(C)	(D)
25	(A)	(B)	(C)	(D)
26	(A)	(B)	(C)	(D)
27	(A)	(B)	(C)	(D)
28	(A)	(B)	(C)	(D)
29	(A)	(B)	(C)	(D)
30	(A)	(B)	(C)	(D)
31	(A)	(B)	(C)	(D)
32	(A)	(B)	(C)	(D)
33	(A)	(B)	(C)	(D)
34	(A)	(B)	(C)	(D)
35	(A)	(B)	(C)	(D)
36	(A)	(B)	(C)	(D)
37	(A)	(B)	(C)	(D)
38	(A)	(B)	(C)	(D)
39	(A)	(B)	(C)	(D)
40	(A)	(B)	(C)	(D)

41	(A)	(B)	(C)	(D)
42	(A)	(B)	(C)	(D)
43	(A)	(B)	(C)	(D)
44	(A)	(B)	(C)	(D)
45	(A)	(B)	(C)	(D)
46	(A)	(B)	(C)	(D)
47	(A)	(B)	(C)	(D)
48	(A)	(B)	(C)	(D)
49	(A)	(B)	(C)	(D)
50	(A)	(B)	(C)	(D)
51	(A)	(B)	(C)	(D)
52	(A)	(B)	(C)	(D)
53	(A)	(B)	(C)	(D)
54	(A)	(B)	(C)	(D)
55	(A)	(B)	(C)	(D)
56	(A)	(B)	(C)	(D)
57	(A)	(B)	(C)	(D)
58	(A)	(B)	(C)	(D)
59	(A)	(B)	(C)	(D)
60	(A)	(B)	(C)	(D)

INST

- USE BLUE BALL
- FILL IN BUBBLE
- EXAMPLE (i): (C)
- DO NOT FOLD OF
- MULTIPLE RESP
- PLEASE FILL IN
- THE UNIVERSITY
- ABOVE INSTRU

ROLL

(0)	(0)
(1)	(1)
(2)	(2)
(3)	(3)
(4)	(4)
(5)	(5)
(6)	(6)
(7)	(7)
(8)	(8)
(9)	(9)

SUBJECT WITH CODE	B1
SECTION	ME1

SIGN. OF CENT

EXAMINATION -

NAME

Mu

FULL NO.