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## CELL – MCQ

**1. Which of the following structures is found in all prokaryotic cells?**

- A) Nucleus
- B) Mitochondria
- C) Cell wall
- D) Ribosomes

**2. Which of the following is *not* a feature of prokaryotic cells?**

- A) Circular DNA
- B) Membrane-bound nucleus
- C) Cell membrane
- D) Cytoplasm

**3. Eukaryotic cells differ from prokaryotic cells in that they:**

- A) Lack DNA
- B) Have a rigid cell wall
- C) Contain membrane-bound organelles
- D) Do not have ribosomes

**4. Which of these organisms is made up of eukaryotic cells?**

- A) Bacteria
- B) Archaea
- C) Amoeba
- D) Cyanobacteria

**5. Which structure is present in plant cells but absent in animal cells?**

- A) Nucleus
- B) Mitochondria
- C) Chloroplast
- D) Ribosomes

**6. What is the function of the large central vacuole in plant cells?**

- A) Store genetic material
- B) Aid in respiration
- C) Maintain turgor pressure
- D) Assist in protein synthesis

**7. Which cell component is found in animal cells but usually absent in plant cells?**

- A) Centrosome
- B) Endoplasmic reticulum
- C) Golgi apparatus
- D) Ribosomes

**8. Which of the following is *common* to both plant and animal cells?**

- A) Cell wall
- B) Chloroplast
- C) Mitochondria
- D) Plasmodesmata

**9. Who discovered the cell for the first time?**

- (a) Anton van Leeuwenhoek
- (b) Robert Hooke
- (c) Matthias Schleiden
- (d) Rudolf Virchow

**10. Robert Hooke observed the first cell in a piece of:**

- (a) Onion
- (b) Skin
- (c) Cork
- (d) Leaf

**11. Which scientist first observed living cells under a microscope?**

- (a) Robert Brown
- (b) Robert Hooke
- (c) Anton van Leeuwenhoek
- (d) Theodor Schwann

**12. The term 'cell' was coined because the structures observed resembled:**

- (a) Small animals
- (b) Honeycombs
- (c) Small rooms in a monastery
- (d) Microscopic dots

**13. Which of the following instruments made the discovery of the cell possible?**

- (a) Telescope
- (b) Spectrometer
- (c) Microscope

(d) Centrifuge

**14. Who proposed that all plants are made up of cells?**

- (a) Theodor Schwann
- (b) Rudolf Virchow
- (c) Robert Hooke
- (d) Matthias Schleiden

**15. The statement "All cells arise from pre-existing cells" was given by:**

- (a) Robert Hooke
- (b) Anton van Leeuwenhoek
- (c) Theodor Schwann
- (d) Rudolf Virchow

**16. Which of the following is NOT a part of the modern cell theory?**

- (a) All living organisms are made up of cells
- (b) All cells have a cell wall
- (c) All cells arise from pre-existing cells
- (d) The cell is the basic structural and functional unit of life

**17. Who jointly proposed the classical cell theory?**

- (a) Schleiden and Schwann
- (b) Hooke and Leeuwenhoek
- (c) Schwann and Virchow
- (d) Schleiden and Virchow

**18. Which of the following best summarizes the cell theory?**

- (a) Cells are only found in animals
- (b) Cells spontaneously generate from non-living matter
- (c) All living organisms are composed of cells, and all cells arise from other cells
- (d) Only multicellular organisms contain cells

**19. Which model of the plasma membrane is widely accepted today?**

- (a) Danielli-Davson model
- (b) Lipid bilayer model
- (c) Fluid mosaic model
- (d) Protein-lipid sandwich model

**20. The main components of the plasma membrane are:**

- (a) Proteins and cellulose
- (b) Lipids and proteins

- (c) Carbohydrates and nucleic acids
- (d) Phospholipids and RNA

**21. Which part of the phospholipid bilayer is hydrophobic?**

- (a) Phosphate head
- (b) Fatty acid tail
- (c) Both head and tail
- (d) Neither head nor tail

**22. Which of the following molecules can easily diffuse across the cell membrane?**

- (a) Glucose
- (b) Sodium ions
- (c) Oxygen
- (d) Proteins

**23. Which transport mechanism does not require energy?**

- (a) Endocytosis
- (b) Active transport
- (c) Facilitated diffusion
- (d) Sodium-potassium pump

**24. Which of the following is responsible for cell recognition and communication on the plasma membrane?**

- (a) Phospholipids
- (b) Integral proteins
- (c) Glycoproteins
- (d) Cholesterol

**25. Cholesterol in the plasma membrane:**

- (a) Increases fluidity in cold temperatures
- (b) Decreases membrane rigidity
- (c) Is absent in animal cells
- (d) Is found only in plant cells

**26. Which type of protein spans the entire lipid bilayer?**

- (a) Peripheral protein
- (b) Glycoprotein
- (c) Integral protein
- (d) Extrinsic protein

**27. The term 'selectively permeable membrane' refers to:**

- (a) Membrane that allows all substances to pass
- (b) Membrane that blocks all substances
- (c) Membrane that allows only water
- (d) Membrane that allows some molecules to pass and restricts others

**28. The sodium-potassium pump is an example of:**

- (a) Passive transport
- (b) Endocytosis
- (c) Active transport
- (d) Facilitated diffusion

**29. The primary function of the cell wall is to:**

- (a) Regulate the passage of substances
- (b) Synthesize proteins
- (c) Provide shape and mechanical support
- (d) Store genetic material

**30. Which of the following is the main component of the plant cell wall?**

- (a) Peptidoglycan
- (b) Chitin
- (c) Cellulose
- (d) Pectin

**31. Middle lamella of plant cell wall is mainly composed of:**

- (a) Lignin
- (b) Suberin
- (c) Calcium and magnesium pectates
- (d) Hemicellulose

**32. In gram-positive bacteria, the cell wall contains a thick layer of:**

- (a) Chitin
- (b) Peptidoglycan
- (c) Cellulose
- (d) Lipopolysaccharides

**33. Which of the following organisms lacks a cell wall?**

- (a) Bacteria
- (b) Fungi
- (c) Mycoplasma

(d) Algae

**34. Which layer of the plant cell wall is deposited first during cell division?**

- (a) Primary wall
- (b) Secondary wall
- (c) Tertiary wall
- (d) Middle lamella

**35. Secondary cell wall is rich in:**

- (a) Pectin
- (b) Lignin
- (c) Cell membrane
- (d) Glycogen

**36. Which of the following statements about the cell wall is FALSE?**

- (a) It is present in plant, fungal, and bacterial cells
- (b) It is freely permeable to water and solutes
- (c) It provides rigidity and strength
- (d) It controls the movement of substances into the cell

**37. Cell theory was proposed by:**

- (a) Schleiden and Virchow
- (b) Schleiden and Schwann
- (c) Schwann and Hooke
- (d) Virchow and Pasteur

**38. Which cell organelle is responsible for protein synthesis?**

- (a) Golgi apparatus
- (b) Ribosome
- (c) Lysosome
- (d) Peroxisome

**39. The ribosomes of eukaryotic cytoplasm are:**

- (a) 50S
- (b) 70S
- (c) 80S
- (d) 60S

**40. Modern cell theory was given in year:**

- (a) 1865
- (b) 1866
- (c) 1855
- (d) 1845

