MEERUT INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Biotechnology and Microbiology

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Question Bank for PUT & Main Exam

Sub Name:- Cell Biology (B-201)

By Subject Teacher: ***Dr Subir K Bose***

Q-1 What are the 5 components of the cell theory?

Q- 2 Difference between eukaryotes & prokaryotes (minimum 10 differences)? Give suitable example?

Q- 3 Write minimum 12 difference b/w Plant & animal cell?

Q- 4 Draw the structure of plant & animal cell?

Q-5 Draw the structure of typical prokaryotes? & focus on mesosomes and its importance in prokaryotes?

Q- 6 Draw the structure of the Gram positive and Gram negative cell wall & its function?

Q-7 writes the name of the three Nobel laureates (Nobel prize winner) related to cell biology?

Q-8 Define osmotic pressure? Describe when bacterial cells are placed in different-2 solutions (i) Isotonic solution (ii) Hypotonic solution (iii) Hypertonic solution?

Q- 9 Name of the three double membranous cell organales & three single membranous cell organelles?

Q-10 What is the main function of Golgi bodies?

Q-11 Write short notes on the following topics?

(i)*Endoplasmic Reticulum* **(ii)** *Lysosomes*? (iii) *Types of plastids*?

(iv) *Antibiotics*? **(v)** *Cytoskeletal* **(vi)** *Proton Pump*

Q-11 Draw the image of the large and small subunit of ribosome and its function?

Q-12 Short note on semiautonomous cell organelles?

Q-13 Brief explanation of Chloroplast and its type, chemical composition & function?

Q-14 Brief explanation of Chloroplast and its type, chemical composition & function?

Q-15 Brief explanation of structure and function of nucleolus?

Q-16 Anticancer drug obtained from *Catharanthus roseus* and *Taxus brevifolia*, (the Pacific yew or western yew)?

Q-17 What is the main function of Golgi bodies, & diagrammatically illustrate the process?

Q-18 Cytoskeleton and its importance in eukaryotes?

Q-19 who gave fluid mosaic model? Comment upon different models of cell membrane structure?

Q-20 Write down the main feature of prokaryotic cell wall?

Q-21 write short notes on the following?

(i) Capsule in bacteria **(ii)** Classes of Pilli

Q-22 Describe the structure of bacterial flagella. Comment upon movement of bacteria?

Q-23 Difference between eukaryotes & prokaryotes flagella?

Q-24 write short notes on the following

(i)Peroxisomes (ii) Nuclear envelop (iii) Lysosome (iv) Proton Pump

Q -25 Write short notes on (i) Cell theory (ii) Archaea

Q-26 Who is father of cell Biology, and who is father of Indian cell Biology?

Q-27 writes the key feature of Cell theory.

Q-28 Discuss cell as a basic unit of living system?

Q-29 Give a detailed ultra-structure of any four of the following?

(i) RER **(ii)** Golgi bodies **(iii)** centrosome

(iv) Lysosome **(v)**Tonoplast **(vi)**SER

Q-30 write short notes on the following

(i) Slime layers **(ii)** Cilia

Q-31 Describe the ultra-structure of ribosome in eukaryotic cell and write its function in details?

Q-32 Describe the structure of animal cell?

Q-33 Name of the two prokaryotic inhibitor?

Q-34 Give an example of two broad spectrum antibiotics

Q-35 Difference between Plant & animal cell? Demonstrate your answer with suitable animal cell diagram?

Q-36 A double membranous cell organelle is known as powerhouse of the cell describes the structure and functions of that cell organelle with suitable diagram and also explained endosymbiont hypothesis?

Q-37 Write short notes on the following topics?

(i) Endoplasmic Reticulum **(ii)** Lysosomes **(iii)** Types of plastids **(iv)** Cytoskeletal **(v)** central dogma of Molecular Biology

Q-38 What is extracellular matrix? Describe in details**.**

Q-39 Describe the mechanism of osmotic protection in prokaryotes?

Q-40 Write down the main feature of prokaryotic cell wall. Differentiate prokaryotic cell wall from the cell wall of eukaryotic microbes**?**

Q-41 What is the main function of Golgi bodies/ Golgi apparatus/ Golgi vesicles?

Q-42 Describe all three types of cytoskeleton present in eukaryotic cells?

Q-43 Write short notes on the following topics?

(i) Microfilaments/Actin filament **(ii)** Microtubules **(iii)** Intermediate filaments

Q-44 What are the basic characteristics and functions of the cell wall in *Bacteria*?

Q-45 what are the differences between gram positive and negative organisms in terms of thickness of peptidoglycan, different constituents of pg and variations in cross linkage and strength, and other molecules associated with cell wall?

Q-46 What is teichoic acid and what are its' proposed roles and functions? What are lipteichoic acids?

Q-47 What is the periplasm of gram negative bacteria? What purpose and it serve? What alternatives are available for cells?

Q-48 Difference between bacterial Fimbriaeand Pili?

Q-49 write short notes on the following?

(i) Slime layers **(ii)** Cilia (iii) Fimbriae (iv) Bacterial Pili

Q-50 Write down the main feature of prokaryotic cell wall. Differentiate prokaryotic cell wall from the cell wall of eukaryotic microbes**?**