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Total Pages : 3

**325602**

**May-2026**

**B.Sc. Life Sciences 6th Semester**

**Cell Biology**

**(NBLS 602)**

Time : 3 Hours]

[Maximum Marks : 75

*Instructions :*

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

**PART - A**

1. (a) Draw and label the ultrastructure of the Nucleus. (1.5)  
(b) What is the significance of the kink in phospholipids? (1.5)  
(c) Give examples of the tumor suppressor genes. (1.5)  
(d) What is the role of the cholesterol in cell membrane? (1.5)

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238 [P.T.O.  
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- (e) What is the major function of the nuclear pore. (1.5)
- (f) What are microfilaments. (1.5)
- (g) Define the role of the Golgi bodies in the cell. (1.5)
- (h) Differentiate between the active and passive transport. (1.5)
- (i) Write a note on the gaseous exchange of the cell. (1.5)
- (j) Why ribosomes are critical for the cell. (1.5)

**PART - B**

- 2. (a) Differentiate between the rough and smooth endoplasmic reticulum. (10)
- (b) Draw and mention the components of the cytoplasmic membrane. (5)
- 3. (a) Discuss the importance of the endocytosis in cellular functions. (5)
- (b) Enlist the major functions of the cytoskeletons in a eukaryotic cell. (10)
- 4. Give and detailed account on the plant cell wall with suitable examples. (15)
- 5. (a) Discuss the important caspase involved in the process of apoptosis. (5)

- (b) Explain the role of the tumor suppressor gene with special emphasis on p53. (10)

- 6. (a) Explain the sequence of protein trafficking in Golgi bodies. (10)
- (b) What do you understand from the cell signaling process? (5)
- 7. Discuss the microtubules, microfilaments, intermediary filaments present in a eukaryotic cell. (15)