



B.Sc./2nd Sem/ZOO/25(NEP)

2025

2nd Semester Examination (CCFUP : NEP)

ZOOLOGY

Paper : MJ 2-T (Single Core Major)

(Cell Biology)

Full Marks : 40

Time : Two Hours

The figures in the margin indicate full marks.

*Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *five* questions : $2 \times 5 = 10$

1. Differentiate between peripheral and integral proteins of plasma membrane.
2. What is protooncogene? Give an example.
3. Briefly describe structure of action filament. Give a diagram.
4. What are the TJ proteins? State their functions.
5. Write a short note on protein glycosylation within Golgi.
6. Write down the principle of fluorescence microscopy.
7. State the difference between symporter and antiporter.

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8. Differentiate between primary and secondary cell line.
Give examples.

Group - B

Answer any *four* questions : $5 \times 4 = 20$

9. Discuss structure of centrosome with a suitable diagram.
Write down its significance in cell division. $3+2$
10. Briefly discuss the steps of electron transport chain. Why
Rotenone is considered as an inhibitor of oxidative
phosphorylation? $4+1$
11. What are motor proteins of cytoskeleton? Briefly describe
how these proteins mediate vesicle transportation within
the cell. Give a suitable diagram. $1+4$
12. Why coupled transcription translation is possible in
prokaryotes? Discuss the export mechanism through
nuclear pore complex. $2+3$
13. What is kinetochore microtubule? How do these
microtubules facilitate chromosome segregation during
anaphase? What is chromosome non-disjunction? $1+2+2$
14. Write short notes on (any *two*) : $2\frac{1}{2} \times 2$
- (i) Desmosome
 - (ii) lipid raft
 - (iii) RTK

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Group - C

Answer any *one* question : $10 \times 1 = 10$

15. Differentiate between apoptosis and necrosis. Discuss regulations of cyclin and cyclin dependent kinases in cell cycle check points. What is metastasis? Write down the principle of ultracentrifugation. $2+4+2+2$
16. Discuss different types of movements of lipid molecules in plasma membrane. What is freeze fracture electron microscopy? What is the significance of cholesterol of plasma membrane? $4+4+2$
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