



বিদ্যাসাগর বিশ্ববিদ্যালয়
VIDYASAGAR UNIVERSITY
Question Paper

B.Sc. Honours Examinations 2022

(Under CBCS Pattern)

Semester - II

Subject : ZOOLOGY

Paper : C 4 - T

[CELL BIOLOGY]

Full Marks : 40

Time : 2 Hours

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

The figures in the margin indicate full marks.

1. Answer any **four** questions : 5×4=20
- (a) Briefly discuss the nucleosome model with a suitable diagram. What is Bar Body? 4+1
- (b) Write down the basic components of a cellular signaling pathway. Discuss the role of secondary messenger. What is CAD? 2+2+1
- (c) Why coupled transcription and translation is found in prokaryotic cell? What is retrovirus? Give an example. What is virion? 2+2+1
- (d) Write a short note on endosymbiotic theory. Give a schematic presentation of TCA cycle. 2+3

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(e) Describe the structure of microtubule with a suitable diagram. What is the significance of extra cellular matrix? 3+2

(f) What is GERL system? What is signal peptide? What is polarity of Golgi Complex? 2+2+1

2. Answer any *two* questions : 10×2=20

(a) Discuss the 'Fluid' and 'Mosaic' nature of cell membrane. Give a clear diagram. What are different types of movements of phospholipid molecule in cell membrane? 8+2

(b) What are the checkpoints of a cell cycle? How does cyclins and cyclin dependent Kinases regulate the cell cycle checkpoints? Why Retinoblastoma protein is considered as a tumor suppressor? 2+6+2

(c) What is the main purpose of gap junction? Describe Tight junction with suitable diagram. What are the functions of Tight Junction? 2+6+2

(d) Draw and discuss the $F_0 - F_1$ particle. What is FRAP? What is serpentine receptor? What are the differences between apoptosis and necrosis? 4+2+2+2