বিদ্যাসাগর বিশ্ববিদ্যালয়

VIDYASAGAR UNIVERSITY
Question Paper

B.Sc. Honours Examination 2023
(Under CBCS Pattern)
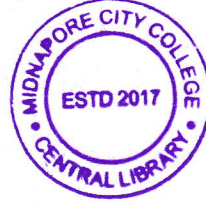
Semester — II
Subject : ZOOLOGY
Paper : C–4T
(Cell Biology)

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.

Answer from **all** the Groups as directed.

GROUP—A

1. Answer *any* **five** questions :   2×5=10

   (a) What is Prion?

(2)

(b) Name two neurodegenerative diseases associated with structural and functional changes of the Golgi apparatus.

(c) Differentiate apoptosis from necrosis.

(d) Write down the function of importin.

(e) What is the function of proto-oncogene?

(f) What are the main components of desmosome?

(g) Give examples of microtubule motor protein.

(h) Write the differences between active and passive transport with examples.

GROUP—B

Answer *any* **four** questions :

5×4=20

2. What is transcription-translation coupled? Why is it only found in prokaryotes? Why do viruses take over machinery of the host?   1+2+2=5

3. Briefly describe the inner membrane structure of mitochondria. Name one disease associated with mitochondria.   4+1=5

4. Discuss the structure of Microtubules with a diagram. What is treadmilling of Microtubules?   3+2=5

/634   (Continued)

(3)

5. Describe the functional compartmentalization of the Golgi apparatus with a diagram. What is KDEL sequence?   4+1=5

6. What is cyclin-CDK complex? Write a note on the regulation of cyclin-CDK complex activity with an example.   1+4=5

7. What are the components of nuclear pore complex and state their functions.   5

GROUP—C

Answer *any* **one** question :

8. What is second messenger? Name four second messengers, their effectors and cellular consequences. Describe the structure of GPCR with proper diagram.   2+4+4=10

9. What are the consequences of Ras mutation in cell cycle. Discuss the role of p53 as tumor suppressor protein. How does APC regulate the mitotic spindle during cell division?   2+2+3+3=10

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