



'সমানো মন্ত্র: সমিতি: সমানী'

**UNIVERSITY OF NORTH BENGAL**  
B.Sc. Honours 2nd Semester Examination, 2023

**CC4-ZOOLOGY**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.*

1. Answer any **five** questions from the following: 1×5 = 5
- (a) How many transmembrane  $\alpha$ -helices are present in the G-protein coupled receptors?
  - (b) Secondary constriction is not found in chromosomes of humans.  
(Write True or False)
  - (c) The undefined nuclear region of the prokaryotes are also known as \_\_\_\_\_.  
(Fill in)
  - (d) Lampbrush chromosomes are seen in which typical stage?
  - (e) Expand — MTOC.
  - (f) What is the function of adenyl cyclase?
  - (g) Mention two prion diseases in human.
  - (h) SER is the site of synthesis of \_\_\_\_\_.  
(I) Protein    (II) Carbohydrate    (III) Lipid    (IV) Amino acid  
(Choose the correct option)
2. Answer any **three** questions of the following: 5×3 = 15
- (a) Write a short note on assembly of peroxisomes.
  - (b) With suitable example, discuss the role of tumor suppressor gene to prevent development of Cancer.
  - (c) Write a short note on Sodium-Potassium ( $\text{Na}^+$ - $\text{K}^+$ ) exchange pump.
  - (d) Enumerate briefly the structure and functioning of the G-Protein coupled receptor.
  - (e) How the electron transport is coupled with the oxidative phosphorylation?
3. Answer any **two** questions of the following: 10×2 = 20
- (a) Describe the functions of different checkpoints in cell cycle to ensure that complete genomes are transmitted to daughter cells. Write a short note on necrosis. 6+4
  - (b) What do you mean by paracrine signalling? Elaborate cAMP pathway of intracellular signal transduction. Mention two signalling molecules. 2+6+2
  - (c) Mention the types of cytoskeleton with example. Describe the dynamic stability of the microfilament. 2+8
  - (d) Name any three coat proteins. Describe the formation of transport vesicles coated with these proteins giving example of any one coat protein. What do you mean by tethering and docking of the transport vesicles? 3+5+2

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