



**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Honours 2nd Semester Examination, 2022

**ZOOACOR04T-ZOOLOGY (CC4)**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.  
Candidates should answer in their own words and adhere to the word limit as practicable.*

1. Answer any **eight** questions from the following: 2×8 = 16
  - (a) What is chromatosome?
  - (b) What do you mean by desmosome?
  - (c) What are aquaporins?
  - (d) What do you mean by MPF?
  - (e) What is linker histone?
  - (f) Distinguish between passive transport and facilitated diffusion?
  - (g) Describe ABC transporter.
  - (h) Name a few intermediate filament proteins. Which one is found in nucleus?
  - (i) What are functions of smooth endoplasmic reticulum?
  - (j) Distinguish between mitochondrial DNA and nuclear DNA.
  - (k) What is the function of peroxisome?
  - (l) What is F<sub>1</sub> particle?
  
2. Answer any **three** questions from the following: 3×3 = 9
  - (a) Distinguish between SER and RER.
  - (b) Mention the functional significance of two faces of Golgi complex.
  - (c) What do you mean by capsomere?
  - (d) Distinguish between tight junction and gap junction.
  - (e) Write the intrinsic pathway of Apoptosis with suitable diagram.
  
3. Answer any **three** questions from the following: 5×3 = 15
  - (a) Write the chemical composition of a Plasma membrane. How does the Fluid Mosaic model of Singer Nicholson differ from the unit membrane model of Robertson? 3+2
  - (b) Explain the role of nitric oxide as a cellular signalling molecule.
  - (c) Describe the structure of myosin filament with labelled diagram. State the role of caspase-8 in inducing cell apoptosis. 3+2
  - (d) Write the chemical structure of a bacterial cell wall. Distinguish between Gram positive and Gram negative bacteria.
  - (e) Explain, how the flow of electrons through the electron transport chain is translated into ATP synthesis.

**N.B. :** *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Honours 2nd Semester Examination, 2022

**ZOOACOR03T-ZOOLOGY (CC3)**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.  
Candidates should answer in their own words and adhere to the word limit as practicable.*

1. Answer any **eight** questions from the following: 2×8 = 16
- What is chiastaneury?
  - What is coelom? Name one pseudocoelomate animal.
  - Write the functions of radula and osphradium.
  - Mention two functions of worker bees in a honey comb.
  - Write two similarities of Phylum Hemichordata with Phylum Annelida.
  - Write two characters of Bipinnaria larva of Phylum Echinodermata.
  - Mention the function and location of tubefeet.
  - What is madreporite? State its function.
  - What is Parapodia? Where is it found?
  - What is ink gland? State its function.
  - What is metamere? Name an animal which shows true metamerism.
  - Define a metabolous metamorphosis in insects. Give example.
2. Answer any **three** questions from the following: 3×3 = 9
- To which Phylum does the following structures belong and mention one function of each  
(i) Clitellum (ii) Malpighian tubules (iii) Ctenidia
  - State the general characteristic features of Phylum Onychophora.
  - Compare between Schizocoelous and enterocoelous mode of coelom formation.
  - Draw a labelled diagram and write the salient features of Pluteus larva. 1+2
  - State the advantages and disadvantages of torsion in Gastropods.
3. Answer any **three** questions from the following: 5×3 = 15
- Name the Phylum and class of the following animals—  
(i) Sea cucumber (ii) King crab (iii) Devil fish (iv) *Saccoglossus* sp.  
(v) *Hirudinaria* sp.

- (b) Write short notes on any *two* of the following:  $2\frac{1}{2} \times 2 = 5$
- (i) Holometabolous metamorphosis of insects
  - (ii) Reproductive caste of termites
  - (iii) Protonephridia
- (c) Describe the structure associated with aquatic respiration in mollusca with suitable diagram. 3+2
- (d) Describe the structure of water vascular system of *Asterias* sp. with a suitable diagram. 3+2
- (e) Classify Phylum Annelida up to class with suitable examples.

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