लक्ष्यं विश्वमानम्

WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 2nd Semester Examination, 2019

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 flip-flop movement?
   (b) Give an example of biomolecules synthesized in peroxisomes.
   (c) What is Viroid? Name one disease caused by it.
   (d) Name one RNA virus and one DNA virus.
   (e) What are cell cycle check points?
   (f) State the differences between nucleoid and nucleus.
   (g) What is Zonula Occludens? State its function.
   (h) Name one microfilament and one microtubule with their function.
   (i) Name two components of extracellular matrix (ECM).
   (j) What is MPF? State its function.
   (k) What are MTOC and Kinetochore?
   (l) Write two functions of Mitochondria.

2. Answer any ***three*** questions from the following: 3×3 = 9
   (a) Differentiate between light and gap junctions with proper diagrams.
   (b) How DNA is packed in a nucleosome? What is a linker DNA?
   (c) Write a note on endosymbiotic theory of organelles.
   (d) Explain in brief how prions cause diseases with suitable examples.
   (e) Differentiate between protooncogene, oncogene and tumour suppressor gene.

3. Answer any ***three*** questions from the following: 5×3 = 15
   (a) Differentiate between lytic and lysogenic cycles of virus. Mention their importance as infections strategy. Give an example of viral oncogene. 3+1+1
   (b) Differentiate between intrinsic and extrinsic pathways of apoptosis. Mention the functions of caspases in this process. 3+2
   (c) Discuss briefly how proteins are synthesized, modified and secreted through GERL system. 5
   (d) Discuss the role of cAMP as second messenger in cell signal transduction. 5
   (e) Describe in brief the most accepted model of plasma membrane with a proper diagram. Name the scientist(s) who proposed the model. 2+2+1

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WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 3rd Semester Examination, 2019

ZOOACOR06T-ZOOLOGY (CC6)

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.
All symbols are of usual significance.

1. Answer any ***eight*** questions from the following: 2×8 = 16
   (a) What are C-cells?
   (b) What are absolute and relative refractory periods?
   (c) What are chondroblasts?
   (d) What is Schwann cell? State its function.
   (e) What do you mean by paracrine signalling?
   (f) Define resting membrane potential.
   (g) Which endocrine gland is present only during pregnancy? Name two hormones produced by it.
   (h) What do you mean by pseudo-stratified epithelium?
   (i) Name the receptor type that interacts with steroid hormones. State one unique feature of it.
   (j) Name the chromophil cells found in anterior pituitary and name one secretory product of each of these cells.
   (k) Which type of cartilage is most abundant in human body? State one unique feature of it.
   (l) How do compact bone and spongy bone differ?

2. Answer any ***three*** questions from the following: 3×3 = 9
   (a) What do you mean by reflex action and reflex arc? 3
   (b) Write a note on lateral specialization of epithelial tissue. 3
   (c) Name the most abundant connective tissue of human body. Draw a labelled diagram of adipocyte. 1+2
   (d) What is the difference between myelinated and non-myelinated nerve fibres? 3
   (e) Describe a mature Graafian follicle with a labelled diagram. 2+1
   (f) What do you mean by excitation-contraction coupling? Explain briefly. 3
   (g) Mention the ultrastructure of chemical synapse. 3

3. Answer any ***three*** questions from the following: 5×3 = 15
   (a) Classify hormones on the basis of their chemical nature. 5
   (b) Why is pituitary considered as master gland? Discuss briefly the role of hypothalamo hypophyseal axis in regulating reproductive functions in human. 1+4
   (c) Discuss Haversian system of a typical matured mammalian bone. 5
   (d) Discuss the roles of sodium and potassium ions in the propagation of action potential. 5
   (e) Write short notes on: $2\frac{1}{2}+2\frac{1}{2}$
   (i) Sarcomere, (ii) Na-K pump.