

**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034****M.Sc. DEGREE EXAMINATION – ZOOLOGY****SECOND SEMESTER – APRIL 2023****PZO2MC04 – CELLULAR ORGANIZATION AND MOLECULAR PROCESSES**

Date: 08-05-2023

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

SECTION A – K1 (CO1)**Answer ALL the questions****(5 x 1 = 5)****1. Answer the following**

a) Significance of meiosis

b) Topoisomerase

c) Plastids

d) Tryptophan

e) Central Dogma

SECTION A – K2 (CO1)**Answer ALL the questions****(5 x 1 = 5)****2. Fill in the blanks**

a) Wobble hypothesis was postulated by -----

b) The sodium–potassium pump was discovered by -----

c) ----- proposed the ‘lac operon’ model.

d) The study of an organism’s complete set of genetic information is called -----

e) ----- contains light harvesting complex and electron transport chain.

SECTION B – K3 (CO2)**Answer any THREE of the following****(3 x 10 = 30)**

3. Illustrate about various types of hormones and their receptors.

4. Elucidate the different types of transposons.

5. Discuss about autocrine and paracrine signaling mechanism.

6. “Telomere length is related to senescence and aging”- justify.

7. Explain GPCR structure and its physiological dynamics with explanatory sketch.

SECTION C – K4 (CO3)**Answer any TWO of the following****(2 x 12.5 = 25)**

8. Explain about tRNA structure and functions.

9. Differentiate structure and functions of euchromatin and heterochromatin with suitable diagram.

10. Describe the structure of the ribosomes and enlist its functions.

11. Compare the fluid mosaic model and the unit membrane models of plasma membrane.

SECTION D – K5 (CO4)**Answer any ONE of the following****(1 x 15 = 15)**

12. Explain the lac operon concept in detail.

13. Illustrate the detailed structure of DNA and prove with experimental evidences that DNA is the genetic material.

SECTION E – K6 (CO5)**Answer any ONE of the following****(1 x 20 = 20)**

14. Illustrate the mechanism of protein synthesis and molecular processing of protein.

15. Predict the interaction of retroviruses in host cells, diseases caused and treatment measures.

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