

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**M.Sc. DEGREE EXAMINATION – ZOOLOGY****THIRD SEMESTER – NOVEMBER 2023****PZO3MC04 – COMPUTATIONAL BIOLOGY**

Date: 07-11-2023

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 Match the following**

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|----|-----------|---------------------------------|
| a) | Mendeley | - Smartphone medical device |
| b) | CATH | - Gene prediction tool |
| c) | GENSCAN | - Human genome database |
| d) | Ensembl | - Protein structure database |
| e) | CellScope | - Reference management software |

SECTION A – K2 (CO1)**Answer ALL the questions****(5 x 1 = 5)****2 True or False**

- | | |
|----|---|
| a) | PubMed Central is a free archive for full-text biomedical and life sciences journal articles. |
| b) | OBIS-SEAMAP is an interactive online database for ocean current data. |
| c) | PHYLIP is a phylogeny inference software package. |
| d) | In drug discovery, the optimized lead compounds are called as drug candidates. |
| e) | RPM devices collect and transmit patients' health data remotely via a wireless network. |

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

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|---|--|
| 3 | Write a note on the basic components of a computer. |
| 4 | Establish the significance of the KEGG database and BOLD system. |
| 5 | Illustrate the steps by which ORF Finder identifies open reading frames. |
| 6 | Explain the different types of protein visualization tools. |
| 7 | Determine how smartphone medical devices can enhance patient care. |

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

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|----|---|
| 8 | Estimate the significance of citation databases. |
| 9 | Categorize the different types of biological data and their sources. |
| 10 | Evaluate the importance of pharmacogenomics giving suitable examples. |
| 11 | Appraise the role of artificial intelligence in the medical field. |

SECTION D – K5 (CO4)

Answer any ONE of the following

(1 x 15 = 15)

12 Summarize the key features of the different types of nucleic acid and protein databases.

13 Defend the significance of computational ecology in the management of environmental issues.

SECTION E – K6 (CO5)

Answer any ONE of the following

(1 x 20 = 20)

14 Construct a flowchart of the mechanism of hierarchical and parametric multiple sequence alignment with a detailed explanation of each method.

15 Compile the steps in computer-assisted drug design.

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