



JAR-1603220001050400 Seat No. _____

B. Sc. (Bioinformatics) (Sem. V) (CBCS) Examination

December - 2019

BI - 504 : Advance Omics Technology

(New Course)

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (1) All questions are compulsory.
(2) The right side figure indicates the total marks of the question.

1 Attempt the following :

(A) Answer the following short questions : (All Compulsory) 4

- (1) List out the databases for peptide function prediction.
- (2) Peptides function as _____ to provides a variety of cues to facilitate cell-cell communication in animals as well as plants.
- (3) Natural AMPs can be found only in Eukaryotes. (True/False)
- (4) Which are heat-stable bacteriocins?

(B) Answer Any **One** of the following questions : 2

- (1) Define Peptabiols.
- (2) What are the Biological functions of systemin?

(C) Answer Any **One** of the following questions : 3

- (1) What are Cathelicidins? Explain in brief.
- (2) Explain the Discovery and Classification of Colicins?

(D) Answer Any **One** of the following questions : 5

- (1) Explain any two plant peptides.
- (2) Bioactivity, Opportunities and Challenges Plant Peptides. Explain

- 2** Attempt the following : **14**
- (A) Answer the following short questions : (All Compulsory) **4**
- (1) Finger toxins comprises of two peptide loops stabilized with three disulfide bridges (True/False)
 - (2) _____ release a mixture of progastrin product from secretory granules.
 - (3) Give an example of non-decapeptide peptaibols.
 - (4) Full form of RPCH.
- (B) Answer Any **One** of the following questions : **2**
- (1) What do the biological actions of the W(X)6Wa/MIP family include?
 - (2) Explain the biological activity of α – Neurotoxins.
- (C) Answer Any **One** of the following questions : **3**
- (1) Explain various types of Allostatin family.
 - (2) Give a brief note on Caerulein and Gastrin.
- (D) Answer Any **One** of the following questions : **5**
- (1) Explain about Bombesin peptides and its types.
 - (2) Explain Cancer/Anticancer Peptides.
- 3** Attempt the following :
- (A) Answer the following short questions : (All Compulsory) **4**
- (1) Chemokines name derived from _____.
 - (2) Full form of CGRP.
 - (3) Define Rubiscolins.
 - (4) Prolactin plays important role in _____.
- (B) Answer Any **One** of the following questions : **2**
- (1) What is Leptin?
 - (2) What is the main function of BBB?

(C) Answer Any **One** of the following questions : **3**

- (1) What is the role of chemokines in AMP?
- (2) Explain Biological Actions of CCK within the Brain.

(D) Answer Any **One** of the following questions : **5**

- (1) Explain peptides and sleep, peptides and stress, peptide and temperature.
- (2) Explain the biological actions of Adrenomedullin within the gastrointestinal tract.

4 Attempt the following :

(A) Answer the following short questions : (All Compulsory) **4**

- (1) Many bacteria and fungi are known to bear alkaline pH upto 9 are called _____.
- (2) Define Deisotoping.
- (3) Which is the first extremophile to have its genome sequence?
- (4) Full form : YST.

(B) Answer Any **One** of the following question : **2**

- (1) Define Lipidomic.
- (2) What are Thermophiles and their extremophilic enzymes?

(C) Answer Any **One** of the following questions : **3**

- (1) Explain some applications of Lipidomics.
- (2) Explain some Protein Adaptations in Archaeal Extremophiles.

(D) Answer Any **One** of the following questions : **5**

- (1) Explain Extremophiles and biotechnology.
- (2) Extremozymes and its industrial application.

5 Attempt the following :

(A) Answer the following short questions : (All Compulsory) **4**

- (1) _____comprises all manner of interactions among biological entities (genes, proteins, etc.).
- (2) What is APID?
- (3) Three d give a two database for study protein-protein interaction.
- (4) Give the name of the tool used for visualizing analysis.

(B) Answer Any **One** of the following questions : **2**

- (1) Define Interactome and Interactomics.
- (2) Define DIP and H-InvDB.

(C) Answer Any **One** of the following questions : **3**

- (1) What is LUMIER ? Explain in brief.
- (2) Explain the Pathway analysis of genomic data methods.

(D) Answer Any **One** of the following questions : **5**

- (1) Explain pathway analysis, current approaches and outstanding challenges.
- (2) Explain in detail the applications of the interactome.
