AQ–2798

Faculty of Engineering & Technology

M.E. (Digital Electronics) (Part Time/Full Time) Semester-II (C.G.S.-New) Examination

BIO-INFORMATICS

Elective—II

Paper—2 UMEF 5

Sections—A & B

Time—Three Hours] [Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.
(2) Answer **THREE** questions from Section A and **THREE** questions from Section B.
(3) Assume suitable data wherever necessary.
(4) Illustrate your answers wherever necessary with the help of neat sketches.
(5) Mobile/Cell Phone prohibited in exam. hall.
(6) Use pen of Blue/Black ink/refill only for writing the answer book.

SECTION—A

1. (a) Explain the categories of research in informatics. 7
   (b) Explain the characteristics of Bioinformatics database. 6

OR

2. (a) Describe applications of bioinformatics. 6
   (b) Explain scope of bioinformatics in detail. 7

3. (a) Explain three databases exchange and update data on a daily basis with neat schematic diagram. 7
   (b) Explain protein sequence data bases. 6

OR

4. (a) Describe the methods for searching from protein sequence databases. 7
   (b) Explain Gene expressing database in brief. 6

(Contd.)

5. (a) Explain the main classification level of CATH. 7

(b) Briefly give reason why MMDB would yield different structural neighbours from the other classification methods. 7

OR

6. (a) Describe the enzyme, pathway databases. 7

(b) Explain the information retrieval system to obtain data from databases. 7

SECTION—B

7. (a) Which are the two tools available for data submission in Gene Bank ? Explain any one. 7

(b) What is the basis for selecting a tool for submission ? What condition will you check for while selecting any of these tools ? 7

OR

8. (a) Explain phylogenetic tree with neat sketch. 6

(b) Explain similarities and differences between BLAST and FASTA tools for sequence alignment. 8

9. (a) Explain the bioinformatics software for bioinformatics tasks. 5

(b) Explain the classification of Algorithm. 8

OR

10. (a) Explain the bioinformatics tasks and corresponding algorithms. 7

(b) Explain the biological Algorithm. 6

11. (a) Explain similarity based approach to Gene prediction algorithm. 7

(b) What do you mean by protein function prediction ? How is it done ? Explain with a suitable example. 6

OR

12. (a) Explain in brief phylogenetic prediction algorithm. 5

(b) Explain sequence alignment optimal algorithms. 8