PG Even Semester (CBCS) Exam., May—2017

LIFE SCIENCE AND BIOINFORMATICS

(2nd Semester)

Course No. : LS–204 (C)

(Bioinformatics, Biostatistics and Computer Applications)

Full Marks : 75
Pass Marks : 30

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. What is data mining? Describe the major tools used in data mining. Add a note on Protein Database. 3+8+4=15

OR

2. Write short notes on the following : 5+5+5=15

(a) Swiss-Port

(b) Entrez

(c) Sequence retrieval system

3. Describe the different nucleotide sequence submission methods and tools in NCBI. 7+8=15

OR

4. Write short notes on the following : 7½+7½=15

(a) Molecular docking

(b) Clustal W

5. *(a)* What do you understand by population and sample in biostatistics?

(b) Discuss the theories of sampling.

(c) Write the different methods of random sampling. 3+6+6=15

OR

6. Define mean and standard deviation. Write the differences between the two descriptive measures. Calculate the mean and standard deviation of the data provided : 3+4+8=15

Weight (in gm) : 2·5 3·4 4·3 3·3 4·2 2·9 3·0 3·1

7. *(a)* Define correlation. Deduce the coefficient of correlation equation and mention its properties. 2+4=6

(b) Define regression. Deduce the regression coefficient equation and mention its properties. Add a note on application of regression analysis. 2+4+3=9

OR

8. Write brief notes on the following : 5+5+5=15

(a) ANOVA

(b) Chi-square test

(c) Normal distribution

9. *(a)* Draw block diagram of a computer and describe the basic components. 7

(b) Describe briefly external storage devices. 5

(c) Point out major differences of input and output devices. 3

OR

10. *(a)* What is an operating system? Briefly describe MS-DOS. 7

(b) Describe the components of MS-OFFICE. 5

(c) What is SPSS? Mention its major applications. 3

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