

Exam. Code : 103202

Subject Code : 1272

B.A./B.Sc. 2<sup>nd</sup> Semester

BIOINFORMATICS

(Basic Mathematics, Biostatistics & Database  
Management System)

Time Allowed—3 Hours] [Maximum Marks—75

**Note** :— Candidates are required to attempt *five* questions, selecting at least *one* question from each Section. The **fifth** question may be attempted from any section. Each question is of **15** marks.

## SECTION—A

1. (A) Find the inverse of the following matrix :

$$\begin{bmatrix} 3 & 2 & -1 \\ 2 & 3 & 0 \\ 0 & 4 & 1 \end{bmatrix} \quad 10$$

- (B) Differentiate the following w.r.t.
- $x$
- :

$$(3x^2 - 9x + 5)^9. \quad 5$$

2. (A) Solve the differential equation
- $(1-x)dy - (1+y)dx = 0$
- .
- 8

- (B) Discuss the Determinant of Matrix of order
- $3 \times 3$
- with suitable example.
- 7

## SECTION—B

3. (A) Compute mean and standard deviation of the following series :

$$7, 15, 10, 9, 4, 3, 7, 10, 10, 8, 16. \quad 10$$

- (B) A bag is containing 3 red and 6 white and 7 blue balls. What is the probability that two balls drawn are white and blue ?
- 5

4. (A) What do you understand by Correlation and Correlation Coefficient ? Justify your answer with suitable example. 8
- (B) Discuss Conditional Probability in detail. 7

### SECTION—C

5. Discuss normalization in detail along with its different forms. 15
6. (A) Discuss the characteristics of Database Approach. 7
- (B) Discuss ER Model in detail. 8

### SECTION—D

7. Discuss the following in detail with suitable examples :
- (i) DDL Statements
- (ii) DML Statements
- (iii) TCL Statements. 15
8. (A) How do you write a procedure in PL/SQL ? Differentiate between local and stored procedures with suitable examples. 8
- (B) Discuss nested queries and also provide suitable example. 7