

Roll No.

Total Pages : 2

3953

NBCA/M-24

MATHEMATICAL FOUNDATIONS

FOR COMPUTER SCIENCE-II

Paper-B23-CAP-CTS/CAL/CDS-204

(CC-M2) BCA

Time : Three Hours]

[Maximum Marks : 20

Note : Attempt *five* questions in all, selecting at least *one* question from each unit. All questions carry equal marks.

Compulsory Question

1. (a) Write integration of basic trigonometric functions.
(b) Differentiate between grouped and ungrouped data.
(c) What is meant by correlation?
(d) What do you understand by linear regression?

(4×1=4)

UNIT-I

2. Solve the integral $\int \frac{x^2 dx}{(a+bx)^2}$.

3. What are various ways to represent data using graphs?
(4)

UNIT-II

4. The average salary of male employees in a firm was Rs.520 and the number of females was Rs. 420. The mean salary of all the employees was Rs. 500. Find the percentage of male and female employees.
(4)

5. Discuss the various measures of dispersion using suitable examples.

UNIT-III

6. Calculate the coefficient of correlation between x and y .

$x :$	22	24	25	27	21	22	23
$y :$	41	44	45	48	40	42	44

7. The ranks of the same 16 students in Mathematics and Physics are as follows. Two numbers within brackets denote the rank of the students in Mathematics and Physics.

(1, 1) (2, 10) (3, 3) (4, 4) (5, 5) (6, 7) (7, 2) (8, 6)
 (9, 8) (10, 11) (11, 15) (12, 9) (13, 14) (14, 12)
 (15, 16) (16, 13).

Calculate the rank correlation coefficient for proficiencies of this group in Mathematics and Physics.

UNIT-IV

8. Fit a straight line to the following data :

X	1	2	3	4	6	8
Y	2.4	3	3.6	4	5	6

9. Calculate the regression coefficient and obtain the lines of regression for the following data :

X	1	2	3	4	5	6	7
Y	9	8	10	12	11	13	14