D 73525 (Pages : 2) Name Deepna K

Reg. No.....

THIRD SEMESTER B.Com./B.B.A./B.M.M.C. DEGREE (C.B.C.S.S.—CCSS)
EXAMINATION, NOVEMBER 2014

(SDE)

Common Course

A 13—BASIC NUMERICAL SKILLS

Time : Two Hours and Forty-Five Minutes Maximum : 27 Weightage

Part B

Section I

Short Answer Type Questions.
Answer all **nine** *questions.*

1. Use the union rule to answer the question. If $n(A) = 24$, $n(B) = 69$, and $n(A \cup B) = 81$; What is $n(A \cap B)$?

2. If $A = (1,2,3)$, $B = (a, b)$. Find $A \times B$ and $B \times A$.

3. Define square matrix.

4. Solve $7(x-2) + 8(x-3) - 22 = x + 10$.

5. Find the sum of the first 20 terms of the sequence 4, 6, 8, 10, ...

6. Define Statistics.

7. Define Kurtosis.

8. State the meaning of arithmetic progression.

9. Find the total interest and amount at the end of 5th year for Rs. 5,000 at 10 % per annum, simple interest.

(9 × 1 = 9 weightage)

Section II

Short Essay **or** *Paragraph questions.*
Answer any **five** *questions out of seven.*

10. Find the 31st term of an A.P. whose 11th term is 38 and the 16th term is 73.

11. If $A = \{1, 2, 3\}$, $B = \{3, 4, 5\}$, $C = \{1, 3, 5\}$. Prove that $A - (B \cup C) = (A - B) \cap (A - C)$.

Turn over

12. If $A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{pmatrix}$, $B = \begin{pmatrix} -1 & -2 \\ 0 & 4 \\ 3 & 1 \end{pmatrix}$ find the matrix X such that A + B = X.

13. Solve $Y = 3(x + 1)$ and $4x = Y + 1$.

14. During 2004-2008 the number of students in university is as follows. Represent the data by sub-divided bar diagram.

Year	*Arts*	*Science*	*Law*	*Total*
2004-05	18,000	9,000	4,000	31,000
2005-06	20,000	10,000	5,000	35,000
2006-07	26,000	9,000	7,000	42,000
2007-08	31,000	9,500	7,500	48,000

15. Compute the mean deviation and its co-efficient for the following data :

X	:	0	1	2	3	4	5	6
Frequency	:	171	82	50	25	13	7	2

16. What is an index number ? What are its characteristics ?

(5 × 2 = 10 weightage)

Section III (Essays)

Answer **two** *out of three.*

17. Solve the following equations by using matrices.

$$2x - 3y = 3$$
$$4x - y = 11.$$

18. The mean annual salary paid to all employees of a company was Rs. 5,000. The mean annual salaries paid to male and female employees were Rs. 5,200 and Rs. 4,200 respectively. Determine the percentage of males and females employed in the company.

19. The third term of a geometric progression is 12 and the sixth term is 96. Find the first term and the common ratio of the progression.

(2 × 4 = 8 weightage)