5235-A (Pages : 3) Name.....

Reg. No.....

THIRD SEMESTER B.Com. DEGREE EXAMINATION, NOVEMBER 2012

(CCSS)

BC 3A 13—BASIC NUMERICAL SKILLS

(2010 Admissions)

Three Hours Maximum : 30 Weightage

Use of Scientific / Basic Calculators and Mathematical / Statistical tables are permitted.

Part A

This part consists of **three** *bunches of questions carrying equal weightage.*
Each bunch has **four** *questions.*
Answer **all** *twelve questions.*

I. Fill in the blanks :

1. A well defined collection of defined objects is called ———.
2. The point $(3^-, 4)$ lies in the ——— quadrant.
3. If A is a matrix of order 3×7 and B is of order 7×4, then AB is of order ———.
4. If mean < median < mode the distribution is ———.

II. Choose the correct answer from the brackets :

5. If $n(A) = n(B)$, A and B are :

   (a) Equal sets. (b) Equivalent sets.

   (c) A subset of B. (d) B subset of A.

6. If the sum of two numbers is 8 and their product is 15, numbers are :

   (a) $^-5, ^-3$. (b) 5, 3.

   (c) $5, ^-3$. (d) 2, 6.

7. Sum of roots of $ax^2 + bx + c = 0$ is :

   (a) $\frac{b}{a}$. (b) $\frac{a}{b}$.

   (c) $\frac{-b}{a}$. (d) $\frac{c}{a}$.

Turn over

8. Lorenz Curve is used to study :

   (a) Skewness. (b) Kurtosis.

   (c) Correlation. (d) Dispersion.

C. Answer in one word :

9. What is the common difference of the AP 4, –8, –20, ...
10. Write down any one form of De-Morgan's formula.
11. Write a 3 × 3 identity matrix.
12. Write the formula for finding range.

(12 × ¼ = 3 weig

Part B

Answer **all** *nine questions.*
Each question carries a weightage of 1.

13. Solve $x^2 - 5x + 6 = 0$.
14. Find $(A + B)^T$ if $A = \begin{bmatrix} 3 & 6 \\ 4 & -9 \end{bmatrix}$ $B = \begin{bmatrix} -3 & 6 \\ -8 & 9 \end{bmatrix}$.
15. If A = {1, 2, 3, 4, 5, 6}, B = {2, 4, 6, 8} find A – B and B – A.
16. Find the break even points if :

    total cost $C(x) = 90x + 500$ and

    total revenue $R(x) = -x^2 + 150x$.
17. Find the sum of all integers from 1 to 50.
18. Write a short note on the qualities of a good questionnaire.
19. Briefly describe what is Central tendency.
20. Define Classification of data.
21. Define Coefficient of Variation. Write its use.

(9 × 1 = 9 weight

Part C

Short essay or paragraph.
Answer any **five** *questions from seven.*
Each question carries a weightage of 2.

22. Distinguish between inclusive and exclusive continuous frequency distribution.
23. Describe Secular trend and Seasonal variation in a time series.

24. From the formula $S_n = \frac{a(1-r^n)}{1-r}; r < 1$ deduce a formula for finding the sum of infinite terms.

25. Construct a histogram and frequency polygon.

Class :	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
f :	5	12	13	14	4

26. Solve :

$$2x + 4y = 14$$
$$3x + 6y = 21.$$

27. Find the three consecutive numbers in the AP whose sum is 27 and their product is 648.

28. Distinguish between SRSWR and SRSWOR.

(5 × 2 = 10 weightage)

Part D

Essay Questions.
Answer any **two** *questions from three.*
Each question carries weightage 4 *each.*

29. What are the steps in conducting a sample survey ?

30. Explain Weighted index numbers.

31. Find the Standard deviation of :

Class :	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
f :	5	10	15	10	5

(2 × 4 = 8 weightage)