51456 (Pages : 3) Name.....

Reg. No.....

THIRD SEMESTER B.Com./B.B.A. DEGREE EXAMINATION NOVEMBER 2013

(U.G.—CCSS)

Common Course

A 13—BASIC NUMERICAL SKILLS

Three Hours Maximum 30 Marks

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.*

Fill in the blanks :

1 The collection of all subsets of a set is called ————.

2 There are ———— quadrants in a XY graphical plane.

3 Value of the matrix (determinant)

$$A = \begin{bmatrix} a & 0 & 0 \\ 0 & b & 0 \\ 0 & 0 & c \end{bmatrix}$$ is ————.

4 ———— is the empirical relation between mean, median and mode.

Choose the right answer from bracket :

5 The transpose of A is B. Its transpose is

(a) B itself. (b) A.

(c) A + B. (d) AB^T.

6 The sum of first 'n' terms of an AP is :

(a) $a + (n-1)d$. (b) ar^{n-1}.

(c) $\frac{n}{2}(2a + (n-1)d)$. (d) $\frac{a(r^n - 1)}{r-1}$.

7 If discriminant = 0, the roots are :

(a) Real and unequal. (b) Real and equal.

(c) Imaginary and unequal. (d) None of these.

8 Amount of deviation present in the data 8, 8, 8, 8, 8 is :

(a) 8. (b) 40.

(c) 0. (d) 5.

Answer in *one* word :

9 Which is the ideal weighted index number ?

10 $(A \cup B)^C = (A \cap B)^C$. Say True or False.

11 Write the condition for a matrix X to be symmetric.

12 The square of standard deviation is an important measure of deviation. Name it.

(12 × 1 = 12 weightage)

Part B

Answer all **nine** *questions.*

Each question carries a weightage of 1.

13 Solve $2a + b = 10$

$a - 2b = 11$.

14 Find all the minors of the matrix $A = \begin{bmatrix} 2 & 4 \\ -5 & -10 \end{bmatrix}$.

15 If $A = \{x / 2 < x < 5\}$

$B = \{x / 3 \leq x < 7\}$ where x is a positive integer find $(A \cup B)$ and $(A \cap B)$.

16 Find the number of terms in the A.P. 7, 13, 19. . . 205

17 Write a short note on moving average method of trend analysis.

18 What do you mean by sampling a population ?

19 State the difference between (basic concepts alone) central tendency and dispersion.

20 Distinguish between quantitative and qualitative data.

21 Define Index Number.

(9 × 1 = 9 weightage)

Part C (Short Essay or Paragraph)

Answer any **five** *questions from seven.*
Each question carries a weightage of 2.

22 Distinguish between Primary and Secondary data.

23 Define Time series. Write its uses.

24 If the sum of first 11 terms of an A.P. is 1050 and its first term is 10, find the 20^{th} term.

25 Explain the construction of

(a) Pie diagram.

(b) Bar diagram.

26 If demand function is $p^2 + 2q = 1300$, supply function is $200 - p^2 + 2q = 0$ find equilibrium price and quantity.

27 (a) If a, b, c are in A.P show that $b = \frac{a+c}{2}$.

(b) If x, y, z are in G.P. show that $y = \sqrt{xz}$.

28 Write a short note on lottery method. What do you mean by random number table?

$5 \times 2 = 10$ weightage

Part D (Essay Questions)

Answer any **two** *questions from three.*
Each question carries a weightage of 4.

29 Explain Probability Random Sampling.

30 Distinguish between Skewness and Kurtosis. Write Pearson measures.

31 Find the variance of :

Class	2	4	5	6	7
	10	20	25	15	15

$2 \times 4 = 8$ weightage

$$\sqrt{\frac{\Sigma x^2}{n} - \bar{x}^2}$$