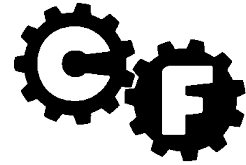


**THIRD SEMESTER B.Com./B.B.A. DEGREE EXAMINATION
NOVEMBER 2013**

(U.G.—CCSS)

Common Course

A 13—BASIC NUMERICAL SKILLS



**COMMERCE
FACTORY**

Maximum Marks : 100

Three Hours

*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)

$$A = \begin{bmatrix} a & 0 & 0 \\ 0 & b & 0 \\ 0 & 0 & c \end{bmatrix} \text{ is } \underline{\hspace{2cm}}$$

- 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) $\times 1 = 1$ 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 $A = \{x \mid 2 < x < 5\}$

$B = \{x \mid 3 \leq x < 7\}$ 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 \times 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 14 terms of an A.P. is 1050 and its first term is 10, find the 20th term.
- 25 Explain the construction of
(a) Pie diagram.
(b) Bar diagram.
- 26 If demand function is $p^2 + 2q = 1360$, supply function is $209 - p^2 + 2q = 0$ 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 $y = \sqrt{xc}$.
- 28 Write a short note on lottery method. What do you mean by random number table?
(5 × 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
f	10	20	25	15	15

(2 × 4 = 8 weightage)

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