


**THIRD SEMESTER B.Com./B.B.A. DEGREE EXAMINATION  
NOVEMBER 2015**

(CUCBCSS—UG)

Common Course

A 11—BASIC NUMERICAL SKILLS

Time : Three Hours

Maximum : 80 Marks

**Part A**

Answer all questions.

Each question carries 1 mark.

## I. Choose the correct answer :

1 The middle most item of a distribution is :

(a) Mean.

(b) Mode.

(c) Median.

(d) None of these.

2 Reciprocal of X values is related with :

(a) Harmonic Mean.

(c) Linear equation.

(b) Mean deviation.

(d) All of the above.

3 Which of the following is a measure of central tendency ?

(a) Standard deviation.

(b) Range.

(c) Median.

(d) Kurtosis.

4 The median of 35, 23, 45, 50, 80, 61, 92, 40, 52, 61 :

(a) 51.

(b) 80.

(c) 50.

(d) 40.

5 The compound interest for Rs. 7,000 for 4 years, interest payable half yearly at 6 % is :

(a) 1,867.

(b) 1,000.

(c) 300.

(d) 2,000.

## II. Fill in the blanks :—

6 A set which contains no elements is \_\_\_\_\_.

7 \_\_\_\_\_ ignores + or - sign while computing measure of dispersion.

$$P = \left( \frac{Pn}{100} \right)^2$$

$$7000 + (1680)^6$$

- 8/ If  $A = \{1, 2, 3\}$   $B = \{2, 5\}$  then  $A \cup B$  is \_\_\_\_\_ ✓
- 9/ \_\_\_\_\_ is considered as the ideal index number. ✓
- 10 The second term of G P series is 9 and the fifth term is 243, the fourth term of series is \_\_\_\_\_ ✓

(10 × 1 = 10 marks)

**Part B (Short Answer Questions)**

Answer any **eight** questions.  
Each question carries 2 marks.

- 11 The sum of three continuous terms in G P is 35 and their product is 1000. Find the terms. ✓
- 12 What do you mean by harmonic Mean? ✓
- 13 What is an index number? ✓
- 14 If  $U = \{1, 2, 3, 4, 5\}$  and  $A = \{2, 4, 5\}$ , Find  $A^c$ . ✓
- 15 If  $A = \begin{bmatrix} 1 & -3 & 2 \\ 0 & 3 & 5 \end{bmatrix}$  and  $B = \begin{bmatrix} 2 & 5 & 6 \\ 1 & 1 & -2 \end{bmatrix}$  find  $2A - 3B$ . ✓
- 16 Represent,  $A \cup B$ ,  $A \cap B$ , and  $A - B$  by means of venn diagram. ✓
- 17 Solve  $5x^2 - 125 = 0$ . ✓
- 18 Of the 100 borders of a hostel 80 drink tea, 40 drink coffee and 20 drink tea and coffee. How many of them drink neither tea nor coffee? ✓
- 19 Explain the limitations of statistics. ✓
- 20 Explain the uses of index numbers. ✓

(8 × 2 = 16 marks)

**Part C**

Answer any **six** questions.  
Each question carries 4 marks.

- 21 Find an appropriate index from the following data :-

Items	Price 2004	Price 2007	Quantity consumed
A	2	4	3
B	8	9	5
C	7	8	8
D	5	6	2

22 If  $A \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$  and  $B \begin{bmatrix} 5 & 6 \\ 0 & -2 \end{bmatrix}$  verify whether  $AB = BA$ . ✓

23 Draw a histogram to the frequency distribution showing the ages of people :

Ages	: 10 - 15	15 - 20	20 - 30	30 - 40	40 - 50	50 - 75	75 - 100
Frequency	: 4	12	20	18	14	25	10

24 By means of Venn diagram, prove that  $(A \cap B)' = A' \cup B'$  (Demorgan's law). ✓

25 Find the standard deviation and co-efficient of variation of the values

10, 12, 80, 70, 60, 100, 0, 4. ✓

26 What are the main types bar diagram? ✓

27 The population of a country increases every year by 2.4 % of the population at the beginning of that year. In what time will the population double itself? Answer to the nearest year. ✓

28 What are the functions of statistics? ✓

(6 × 4 = 24 marks)

### Part D (Essay Questions)

Answer any two questions.

Each question carries 15 marks.

29 With median as the base calculate the mean deviation and compare the variability of the two series A and B :

Series A :	3484	4572	4124	3682	5624	4388	3680	4308
Series B :	487	508	620	382	408	266	186	218

30 Find the two numbers whose sum is 18 and product is 72. ✓

31 Explain in detail the steps in statistical investigation. ✓

$$x + y = 18$$

$$x = 18 - y$$

$$\bullet (18 - y) \times y = 72$$

$$18y - y^2 = 72$$

$$-y^2 + 18y - 72 = 0$$

$$y = 18 - x$$

$$x(18 - x) = 72$$

(2 × 15 = 30 marks)