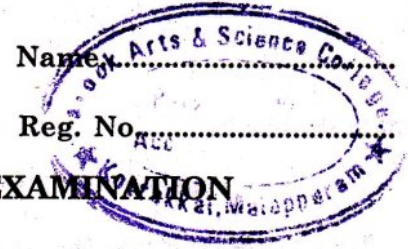


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**THIRD SEMESTER B.Com./B.B.A. DEGREE EXAMINATION
NOVEMBER 2019**

(CUCBCSS—UG)

B.Com./B.B.A.

BCM 3A 11—BASIC NUMERICAL SKILLS

(2014 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

*Answer all questions.
Each question carries 1 mark.*

Choose the correct answer :

1. The quadratic equation $ax^2 + bx + c = 0$ has equal roots if,
 - (a) $b^2 - 4ac < 0$.
 - (b) $b^2 - 4ac > 0$.
 - (c) $b^2 - 4ac = 0$.
 - (d) $b^2 - 4ac = 1$.
2. Value of $7P_7$ is :
 - (a) 7.
 - (b) 0.
 - (c) 1.
 - (d) 7.
3. Face value of a bill due 6 months at 12 % p.a. whose present worth is Rs. 4,500 is :
 - (a) Rs. 5,040.
 - (b) Rs. 4,770.
 - (c) Rs. 6,750.
 - (d) Rs. 4,545.
4. Which of the following represents statistics ?
 - (a) A single value.
 - (b) Only two values in a set.
 - (c) A group of values.
 - (d) Aggregate of values.
5. The most commonly used measure of central tendency is :
 - (a) AM.
 - (b) Median.
 - (c) Mode.
 - (d) HM.

Turn over

Fill in the blanks :

6. _____ means lack of symmetry.
7. _____ refers to the column headings.
8. A matrix in which every element is zero is _____.
9. The common ratio of the series 9, 6, 4 is _____.
10. The value of the determinant $\begin{vmatrix} a & b \\ c & d \end{vmatrix}$ is _____.

(10 × 1 = 10 marks)

Part B (Short Answer Questions)

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

11. Solve $2x^2 + 8x + 8 = 0$.
12. 'A' is six times as old as 'B'. Fifteen years later 'A' will be three times as old as 'B'. Find the ages of 'A' and 'B'.
13. If $A = \{1, 2, 3\}$, $B = \{3, 4, 5\}$, $C = \{1, 3, 5\}$. Prove that $A - (B \cup C) = (A - B) \cap (A - C)$.
14. The average weight for a group of 25 boys was calculated to be 78.4 lb. It was later discovered that the weight of one boy was misread as 69 lb instead of the correct weight of 96 lb. Calculate the correct average.
15. State the limitations of statistics.
16. Write a note on : (a) Range ; and (b) Mean deviation.
17. Explain the significance of index numbers.
18. Given the matrices $A = \begin{bmatrix} 2 & 3 & 1 \\ 0 & -1 & 5 \end{bmatrix}$ $B = \begin{bmatrix} 1 & 2 & -1 \\ 0 & -1 & 3 \end{bmatrix}$ find $2A - 3B$.
19. Explain the concept of bar diagram.
20. Find three numbers in A.P. whose sum is 9 and the product is - 165.

(8 × 2 = 16 marks)

Part C (Short Essay Questions)

Answer any six questions.
Each question carries 4 marks.

21. Find out the rank of the matrix $\begin{bmatrix} 1 & 2 & 3 \\ 3 & 6 & 9 \\ 2 & 4 & 6 \end{bmatrix}$.

22. Explain the steps in the construction of index numbers.

23. (a) If the mode and mean of a moderately asymmetrical series are 80 and 68, what will be the most probable median ?

(b) In a moderately asymmetrical distribution the value of median is 40 and mode is 37. Find the value of mean ?

24. Calculate price index by using Paasche's method :

Items	Base Year		Current Year	
	P	Q	P	Q
A ..	6	50	10	56
B ..	2	100	2	120
C ..	4	60	6	60
D ..	10	30	12	24
E ..	8	40	12	36

25. Determine the modal value from the following data :

Wages	Below 10	Below 20	Below 30	Below 40	Below 50	Below 60	Below 70	Below 80	Below 90
No. of Workers	4	12	30	60	80	90	95	98	100

26. Find two natural numbers whose sum is 18 and whose product is 72.

27. Calculate geometric mean from the following data 2, 4, 8, 12, 16, 24.

28. Calculate mode and median values from the following particulars :

$$SK_p = 0.40, S.D. = 8, \text{Mean} = 30.$$

(6 × 4 = 24 marks)

Turn over

Part D (Essay Questions)

Answer any two questions.

Each question carries 15 marks.

29. "Statistics is a body of methods for making wise decisions in the face of uncertainty". Examine the statement.
30. The scores of two batsman A and B during a certain match are given. Examine which of the two batsman is more consistent in scoring. Who is the efficient batsman ?

Batsman A	:	10	12	80	70	60	100	0	4
Batsman B	:	8	9	7	10	5	9	10	8

31. Out of 1200 students who appeared for B.Com. examination, 750 failed in Accountancy, 600 failed in Auditing and 600 failed in costing, 450 failed in both Accountancy and Auditing and 400 failed in both. Accountancy and Costing. 150 failed in Auditing and Costing, 20 failed in all subjects. How many students passed all the three ?

(2 × 15 = 30 marks)