

D 91624

(Pages : 4)

Name.....

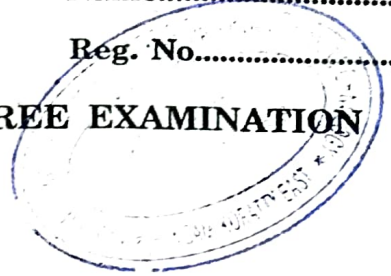
Reg. No.....

THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2020

B.Com.

BCM 3A 11—BASIC NUMERICAL SKILLS

(2017 Admissions)



Time : Three Hours

Maximum : 80 Marks

Part I

Answer all questions.

Each question carries 1 mark.

1. $\{\phi\}$ is a _____ Set.
 - a) Singleton set.
 - b) Null set.
 - c) Powerset.
 - d) Subset.
2. If A is a 2×3 matrix and AB is of order 2×2 then B is of order _____.
 - a) 2×2 .
 - b) 3×2 .
 - c) 2×3 .
 - d) 3×3 .
3. The system of equations $x + y = 3$ and $2x + 2y = 7$ are _____.
 - a) Consistent.
 - b) Consistent and dependent.
 - c) Inconsistent.
 - d) None of these.
4. The nature of roots of the equation $8x^2 - 2x - 4 = 0$ are _____.
 - a) Irrational and unequal.
 - b) Rational.
 - c) Imaginary.
 - d) Rational and equal.
5. 20th term of AP whose First term is 5 and common difference is 2 is _____.
 - a) 34.
 - b) 43.
 - c) 54.
 - d) 45.

Turn over

18. What are Ogives ?
19. Find the harmonic Mean 250, 475, 75, 5, 0.8, 0.05, 0.009.
20. Explain cost of living index number.

(8 × 2 = 16 marks)

Part III (Short Essay Answers)*Answer any six questions.**Each question carries 4 marks.*

21. If $A = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$. Find A^{-1} .

22. The sum of first 3 terms of a GP is $\frac{13}{12}$ and their product is -1 . Find the common ratio and terms.

23. Divide 50 into two parts so that the sum of their reciprocals is $\frac{1}{12}$.

24. Compare Mean, Median and Mode.

25. Solve $\sqrt{x^2 - 2x + 49} - \sqrt{x^2 - 2x + 16} = 3$.

26. The following table gives the distribution of marks of 100 students in a examination. Represent the data by a frequency polygon.

Marks	:	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of students	:	5	10	18	26	22	15	4

27. What are the problems in constructing index numbers ?

28. If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{2, 4, 6, 8\}$ and $B = \{2, 3, 5, 7\}$. Verify that

(i) $(A \cup B)' = A' \cap B'$; and (ii) $(A \cap B)' = A' \cup B'$.

(6 × 4 = 24 marks)

Turn over

Part IV (Long Essay Answers)

Answer any two questions.

Each question carries 15 marks.

29. Solve the system of equation using matrix method :

$$3x - 2y + 3z = 8; 2x + y - z = 1; 4x - 3y + 2z = 4.$$

30. Give 3 yearly moving averages for the following series :

Year	:	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Production	}	17.2	17.3	17.7	18.9	19.2	19.3	18.1	20.2	25.3	24.9	23.2	24.3	25.2	26.3	27.3
(in tonnes)	}															

31. Samples of size 60 and 40 have means 100 and 150 with standard deviation 70 and 80 respectively. Calculate mean and standard deviation of combined group.

[2 × 15 = 30 marks]