(PAGES: 3)

D1BCP2103 (S3) **Reg. No.....**

Name: .....

FIRST SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2024

(Improvement/Supplementary)

B.Com. PROFESSIONAL

GBCP1B03T: NUMERICAL SKILLS

Time: 3 Hours **Maximum Marks: 80**

Part A: Answer all the questions. Each carries *one* mark.
Choose the Correct Answer.

1. If A= { 1,6,5,4,7,8,9} , B={5,6,8,11} , then:
   a) A is a subset of B c) B is a subset of A
   b) A is not a subset of B d) None of the above
2. Solution of the equation 4x-5=13 is
   $a)\ x = 1$ $b)\ x = 3$ $c)\ x = 2$ $d)\ none\ of\ the\ above$
3. Which of the following is a one – dimensional diagram?
   a) Bar diagram b) Pie diagram c) Cylinder d) None of these
4. The linear equation 3x+10 = 0 will have:
   a) Unique solution c) Two solutions
   b) Infinitely many solutions d) No solutions
5. Which of the following can be used to locate median?
   a) Histogram b) Frequency polygon c) Ogives d) None of these

Fill in the Blanks

6. If $A = \begin{bmatrix} 2 & 1 \\ 4 & 5 \end{bmatrix}$, then $A^{-1} =$ _____.
7. The solution of equation x-2y = 4 is _____.
8. The n^{th} term of a GP whose first term is ‘a’ and the common ratio ‘r’ is _____.
9. Data originally collected for an investigation are known as _____.
10. If GM and HM of two observations are 22 and 20 respectively. Then AM is _____.

(10 x 1 = 10 Marks)

(PTO)

Part B: Answer any *eight* questions. Each carries *two* marks.

11. What is square matrix? Give an example.
12. Distinguish between primary and secondary data.
13. Solve $8x + 7 = 4x + 12$.
14. Define Proper subset. Give an example.
15. Solve $\frac{3}{5}x = 10$.
16. Calculate Pearson's coefficient of skewness from the following values.

12	18	35	32	28	34

17. What are the limitations of diagrams?
18. Solve $5(1 - 2x) + 2(3 - x) = 14 + 3(x + 4)$.
19. When are two sets said to be disjoint?
20. Define Quartile deviation.

(8 x 2 = 16 Marks)

Part C: Answer any *six* questions. Each carries *four* marks.

21. Weekly wages of 52 laborers are given below. Calculate Q.D. and also the coefficient of Q.D.

Wages	15	30	45	60	75	80	Total
No of weeks	1	4	8	21	10	8	52

22. Solve $9x + 3y = 30, 6x - 2y = 16$
23. Find the three numbers in G.P whose sum is 130 and product is 27000.
24. If A={1,2,3} , B={2,3,4,5} and C={2,4,6,8} verify that:

    i) $A \cup B = (A - B) \cup B$ *ii*) $A - (A - B) = A \cap B$ *iii*) $A \cup (B - C) = (A \cap B) - (B \cap C)$

25. Draw a histogram for the following data:

Class	0 – 100	100 – 500	500 – 1000	1000 – 2000
Frequency	4	12	20	18

26. Explain how you will locate median graphically.
27. Let A={0,1,2,3,4,5}, B={0,1,2,3,7,9} find a relation R , where a *R* b if and only if a+b is divisible by 3

28. If $A = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 3 & 1 \\ 3 & 3 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 1 & 2 \\ 1 & 3 & 1 \\ 3 & 2 & 1 \end{bmatrix}$. Find AB and BA.

(6 x 4 = 24 Marks)

Part D: Answer any *two* questions. Each carries *fifteen* marks.

29. A manufacturer reckons that the value of the machine costing him Rs. 18,750 depreciates each year by 20%. Find the estimated value at the end of 5^{th} year.
30. Discuss the graphical methods of presenting frequency distributions.
31. Compute price index number by using:

    (a) Laspeyre's method. (b)Paasche's method. (c) Fisher's method.

Commodity	Base Year		Current Year	
	P	Q	P	Q
A	6	5	10	6
B	2	10	2	12
C	4	6	6	10
D	10	8	12	7

(2 x 15 = 30 Marks)