**21U155S**       (Pages: 2)       Name: …...…………..…..

Reg. No: …………………..

**FIRST SEMESTER B.Com. PROFESSIONAL DEGREE EXAMINATION, NOV. 2021**

(CUCBCSS-UG)

(Regular/Supplementary/Improvement)

**CC17U BCP1 B03 – NUMERICAL SKILLS**

(Complimentary Course)

(2017 Admission onwards)

Time: Three Hours            Maximum: 80 Marks

## PART A

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

1. Consider the G.P 12, 8, 16/3 …………… What is the common ratio?

   a.1/3      b. 2/3      c. 2      d. 1/3

2. When the frequency curve is more peaked than the normal curve it is called

   a. Meso Kurtic      b. Platy Kurtic      c. Lepto Kurtic      d. None

3. If A and B are …………… sets they have no common elements

   a. Powerset      b. Equal Set      c. Equivalent Set      d. Disjoint Set

4. The 53$^{rd}$ term of 11, 17, 23 ……………

   a. 323      b. 187      c. 363      d. 197

5. Find the value of the determinant $\begin{bmatrix} 2 & 4 \\ 8 & 2 \end{bmatrix}$

   a. 28      b. 38      c. -28      d. 48

Fill in the blanks:

6. If A is a symmetric matrix then $A^{T}$ = ……………

7. If $A = \begin{bmatrix} 3 & 3 & -1 \\ 2 & 4 & 5 \end{bmatrix}$. Find 5A = ……………

8. Which term of the sequence 72, 70, 68, 66 …………… is 34?

9. The graphical representation of mode is ……………

10. Mean of 10, 90, 85, 103, 11 ……………

**(10 × 1 = 10 Marks)**

## PART B

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

11. Define Scalar Matrix

12. Define Kurtosis

13. What is the relationship between Mean, Median & Mode?

14. What is Distrust of Statistics?

15. Find the amount after 6 Years for 7,500/- @ 5% p.a S. I?

16. If $A = \begin{bmatrix} 5 & 4 & 7 \\ -4 & 3 & 8 \end{bmatrix}$, $B = \begin{bmatrix} 6 & 3 & 0 \\ 8 & -6 & 4 \end{bmatrix}$ Find 5A + 2B?

17. Solve $Y = 3(X + 1)$, $4X = Y + 1$

18. Define Demorgan's Law.

19. Find the range of 25, 32, 85, 32, 42, 10, 20, 18, 28.

20. Represent $A \cap B$ using Venn diagram?

**(8 × 2 = 16 Marks)**

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

21. Among 120 people, 70 can speak in English, 80 in Malayalam and 40 can speak in both languages. Find the number of people who can speak at least one of the languages. How many cannot speak any of these languages?

22. Solve the equation $2x^2 + 8x + 8 = 0$?

23. Explain importance of time series analysis?

24. Find the adjoint of $A = \begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$

25. Find the rank of the matrix: $A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 6 & 9 \\ 2 & 4 & 6 \end{bmatrix}$

26. Find mean deviation about mean of the following values 21, 29, 35, 10, 42, 75, 50, 30, 18, 80.

27. Solve $7/x + 3/y = 11/5$, $5/y - 15/x = 1$

28. If $A = \{1,2,3\}$ $B = \{3,4,5\}$ $C = \{1,3,5\}$.
    Find: a. $A - (B \cap C)$      b. $(A - B) \cap (A - C)$

**(6 × 4 = 24 Marks)**

## PART D
Answer any *two* questions. Each question carries 15 marks.

29. Find the inverse and hence solve using matrix method?
    $$x + y + z = 7, \quad x + 2y + 3z = 16, \quad x + 3y + 4z = 22$$

30. Find coefficient of variation from the following data

| SIZE | 0-2 | 2-4 | 4-6 | 6-8 | 8-10 | 10-12 |
|---|---|---|---|---|---|---|
| FREQUENCY | 2 | 4 | 6 | 4 | 2 | 6 |

31. Index numbers are economic barometers explain. Also explain limitations and difficulties of construction of index numbers?

**(2 × 15 = 30 Marks)**

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