

19U158

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Name:

Reg. No.....

FIRST SEMESTER B.Voc. DEGREE EXAMINATION, NOVEMBER 2019

CC15U GN3 A11/CC18U GEC1 BM03 - BASIC NUMERICAL SKILL

UG - General Course

(2018 Admission onwards)

Time: Three Hours

Maximum: 80 Marks

Part A

Answer *all* questions. Each Question carries 1 Mark

Fill in the blanks.

1. A and B are two sets and $B \subset A$, then $A \cap B = \dots\dots\dots$
2. A set with only one element is called
3. The sum of first 'n' terms of an geometric progression is
4. The quadratic equation of $ax^2 + bx + c = 0$ has equal roots if $b^2 - 4ac \dots\dots\dots$
5. curve is known as mesokurtic
6. is an ideal measure to represent average of index numbers
7. Lorenz curve is related to the measure of
8. In a moderately asymmetrical distribution, Q.D. is of M.D.
9. The transpose of the matrix $A \begin{bmatrix} 5 & 0 \\ -1 & 5 \end{bmatrix}$ is
10. Write true or false: The point whose co-ordinate is (-1, 1) lies in quadrant

(10 x 1 =10 Marks)

Part B

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

11. Distinguish between square matrix and symmetric matrix.
12. In what way coefficient of variation is superior to SD in assessing variability of data.
13. Define Harmonic mean.
14. Write any two uses of index numbers.
15. How do you distinguish a symmetrical distribution from a skewed distribution?
16. Find mode when mean is 50 and median is 40.
17. Find the median from the following: 12, 32, 23, 18, 34, 26, 40, 32, 15, 33
18. Solve the equation by factoring: $x^2 - 5x + 6$
19. Which is the 10th term of the geometric progression series 200, 100, 50, 25
20. If a, b, c are in arithmetic progression, show that $b = \frac{a+c}{2}$
21. If $A = \{1, 2, 3, 4, 5, 6\}$ $B = \{2, 4, 6, 8\}$ find $A \cup B$ and $A \cap B$
22. A person gets Rs. 300 as 1st year's interest on a certain amount and Rs. 330 as 2nd year's interest, find the amount.

(8 x 2 = 16 Marks)

Part C

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

23. Write a brief note on various components of time series.
24. Calculate Karl Pearson's coefficient of skewness the following data:

Marks: 0-20 20-40 40-60 60-80 80-100

Frequency: 10 20 20 15 5

25. If $A = \begin{bmatrix} 8 & 0 & -8 \\ 6 & 2 & -8 \\ 2 & -2 & 2 \end{bmatrix}$ Find A^{-1}

26. From the following frequency table find the standard deviation

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	11	18	23	30	57	64	41	29	17	10

27. Discuss the different stages in statistical investigation.
28. What are the different types of bar diagrams?
29. The compound interest on a amount of money for 2 years is Rs. 205 and simple interest on same sum for the same period at the same rate is Rs. 200. Find the sum and the rate.
30. In an examination, 75% of candidates passed in English and 65% in Mathematics, while 15% failed in both subjects. If 495 candidates passed in both subjects, find the total number of candidates who attended the examination.
31. Find two consecutive positive integers, sum of whose squares is 365.

(6 x 4 = 24 Marks)

Part D

Answer any *two* questions. Each question carries 15 Marks.

32. Discuss various uses and applications of statistics in business. Also, explain different measures of descriptive statistics.
33. Solve the following equations using Cramer's rule:

$$2x - 3y = 4$$

$$-x + 4y - z = 11$$

$$4x - 5y + 2z = -3$$

34. Compute Marshall Edgeworth and Fisher's index numbers from the following data.

Commodity	2000		2001	
	Price	Quantity	Price	Quantity
A	5	100	6	120
B	10	60	8	70
C	10	125	12	100

35. Discuss various methods of measuring trend in a time series data.

(2 x 15 = 30 Marks)
