19U309S (Pages: 2) Name: ……

Reg. No……...

THIRD SEMESTER B.Sc./B.C.A. DEGREE EXAMINATION, NOVEMBER 2020

(CUCBCSS - UG)

CC15U GN3 A11 (1) - BASIC NUMERICAL SKILLS

(General Course)

(2015 to 2018 Admissions – Supplementary/Improvement)

Time: Three Hours Maximum: 80 Marks

PART A

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

1. Define equal sets.
2. If A is a matrix of order 2×3 and B is a matrix of order 3×4 , then the order of the product AB is _____
3. Write the transpose of $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$.
4. Check whether $(x+1)^2 = 2(x-3)$ is a quadratic equation.
5. Define Break-Even point.
6. Check whether $1, 3, 9, 27, ...$ is a Geometric progression.
7. Define sampling.
8. Name a graph which represents frequency distribution.
9. Define Geometric mean.
10. Solve $\frac{3}{5}x + \frac{2}{7} = 10$.

(10 x 1 = 10 Marks)

PART B

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

11. Let $A = \{a, b\}$, $B = \{a, b, c\}$. Is $A \subset B$? What is $A \cup B$?
12. Construct 1×4 matrix, $A = [a_{ij}]$ whose elements are given by $a_{ij} = \frac{(i+2j)^2}{2}$.
13. Find the Adjoint of the matrix $A = \begin{bmatrix} 1 & 3 \\ -4 & 2 \end{bmatrix}$.
14. Solve $2x^2 + 7x + 3$.
15. Find the sum of 20 terms of the A.P : $21, 18, 15, ...$
16. Find the compound interest of Rs. 12600 for 2 years at 10% per annum compounded annually.
17. Write a short note on classification of data.
18. Calculate the Harmonic mean of 13.2, 14.2, 14.8, 15.2, and 16.1.
19. Explain Kurtosis.
20. Write any one measure of central tendency and its merits.

(8 x 2 = 16 Marks)

PART C

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

21. The altitude of a right triangle is 7cm less than its base. If the hypotenuse is 13 cm. Find the other two sides.
22. Inset three numbers between 1 and 256 So that the resulting sequence is a Geometric progression.
23. Draw a frequency polygon and frequency curve for the following data.

Class interval	:	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	:	10	20	30	25	10	5

24. Explain the components of the series.
25. From the following data, find out median

Mark	:	60-69	70-79	80-89	90-99	100-109	110-119
No. of students	:	5	15	20	30	20	8

26. Write a short note on scope of statistics.
27. Find 5 years moving average for the following data.

Year	:	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Value	:	705	685	703	687	705	689	715	685	725	730

28. What do you understand by skewness? Using figures distinguish between positive and negative skewness. Also show the relative positions of mean, median, and mode in the figure.

(6 x 4 = 24 Marks)

PART D

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

29. Find the inverse of the matrix $\begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$
30. Use Cramer's rule to solve

$$x + y + z = 7$$
$$2x + y + 3z = 16$$
$$3x + 3y - z = 5$$

31. Find the coefficient of variation

Age	:	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No of persons	:	15	30	53	75	100	110	115	125

(2 x 15 = 30 Marks)

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