

**18U309**

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Name: .....

Reg. No. ....

**THIRD SEMESTER B.Sc./B.C.A. DEGREE EXAMINATION, NOVEMBER 2019**

(Regular/Supplementary/Improvement)

(CUCBCSS - UG)

**CC15U GN3 A11 - BASIC NUMERICAL SKILLS**

(General Course)

(2015 Admission onwards)

Time: Three Hours

Maximum: 80 Marks

**Part A**

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

Fill up the blanks.

1. The number of elements in a singleton set is .....
2. A finite part of a statistical population whose properties are studied to gain information about the whole is .....
3. Coefficient of standard deviation = .....
4. In a geometric progression  $n^{\text{th}}$  term is given by .....
5.  $x^3 + 5x - 7 = 0$  is a ..... equation.
6. The transpose of the matrix  $\begin{bmatrix} -5 & 6 & 4 \\ 1 & 0 & 3 \\ -8 & 2 & 7 \end{bmatrix}$  is .....
7. If a set has 4 elements, then the number of elements in the power set is .....
8. Lack of symmetry is called .....
9. The harmonic mean of the numbers: 13.2, 14.2, 14.8, 15.2 and 16.1 is .....
10. Break-even point means .....

**(10 × 1 = 10 Marks)**

**Part B**

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

11. Write the solution set of the equation  $x^2 + x - 2 = 0$  in roster form.
12. Find AB, if  $A = \begin{bmatrix} 6 & 9 \\ 2 & 3 \end{bmatrix}$  and  $B = \begin{bmatrix} 2 & 6 & 0 \\ 7 & 9 & 8 \end{bmatrix}$
13. Find the tenth term of the arithmetic progression 2, 7, 12 ...
14. What are the different types of averages?
15. Two main branches of statistics are.
16. Find the root of the equation  $2x^2 - 5x + 3 = 0$ , by factorization method.
17. What are different types of index numbers?
18. Find the interest payable for a principal of ` 4635.50 due at the end of 3 years at 5% annually.

19. Find the mode of the values 5, 7, 2, 9, 7, 10, 8, 5, 7.  
 20. What is an empty set? Give an example.

(8 x 2 = 16 Marks)

**Part C**

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

21. Write the power set of the set A ssssssss= {1, 2, 3}.  
 22. Find simple interest on ` 3000 at 7% rate of interest for one year.  
 23. Find the geometric mean of the following distribution of student's marks:
- |                 |   |      |       |       |        |
|-----------------|---|------|-------|-------|--------|
| Marks           | : | 0-30 | 30-50 | 50-80 | 80-100 |
| No. of Students | : | 20   | 30    | 40    | 10     |
24. Find the values of  $x, y, z$  from the following equation

$$\begin{bmatrix} x + y & 2 \\ 5 + z & xy \end{bmatrix} = \begin{bmatrix} 6 & 2 \\ 5 & 8 \end{bmatrix}$$

25. Explain different sampling techniques.  
 26. Define skewness and kurtosis.  
 27. Explain various methods for determining secular trends.  
 28. Differentiate between primary and secondary data.

(6 x 4 = 24 Marks)

**Part D**

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

29. Define any five matrices. Give an example for each.  
 30. Find the quartile deviation and coefficient of quartile deviation of the following data.

1120, 1240, 1320, 1040, 1080, 1200, 1440, 1360, 1680, 1730, 1785, 1342, 1960, 1880,  
 1755, 1720, 1600, 1470, 1750, 1885

31. Using the following data calculate Laspayre's, Paasche's and Fisher's Ideal Index Number.

Commodity	2017		2018	
	Quantity	Price	Quantity	Price
A	10	60	14	65
B	18	105	20	100
C	30	70	35	80
D	50	10	45	12
E	63	38	70	50

(2 x 15 = 30 Marks)

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