

18U425

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Name:

Reg. No.....

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2020

(CUCBCSS-UG)

(Regular/Supplementary/Improvement)

CC15U ST4 C04 - APPLIED STATISTICS

(Statistics - Complimentary Course)

(2015 Admission onwards)

Time: Three hours

Maximum: 80 Marks

Part A

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

1. Probability of drawing a unit at each selection remains same in _____
2. Analysis of variance deals with testing the equality of _____ of more than two populations.
3. Probability of including a specified unit in a sample of size n selected out of N unit is _____
4. The total number of samples of size $n = 3$ from a population of $N = 8$ is:
5. If all the units of a population are surveyed, it is called _____
6. The error degrees of freedom for two ways ANOVA with m rows and n columns is _____
7. In a control chart the manageable cause is _____
8. Name the control chart used for number of defects?
9. In Laspeyre's Index number the weights applied are _____
10. Variation due to flood is an example of _____ component of time series.

(10 x 1 = 10 Marks)

PART B

Answer *all* questions. Each question carries 2 marks.

11. Explain Stratified Sampling with example.
12. Explain systematic sampling.
13. What is the Mathematical model used in two way ANOVA?
14. Explain the structure of a control chart?
15. Explain Variables and attributes with the help of examples
16. What is price relative.
17. Give three major limitations of Index Numbers.

(7 x 2 = 14 Marks)

PART C

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

18. Discuss the problem in the construction of index numbers.
19. Differentiate between Cluster sampling and Simple random sampling.
20. Briefly discuss the procedure followed in one way ANOVA.

21. Explain the construction of R chart
 22. Fill up the blanks in the one way ANOVA

Source of variation	Degrees of freedom	Sum of squares	Mean sum of squares	F Ratio
Treatment	4	456
Error	
Total	27	1978		

(3 x 4 = 12 Marks)

PART D

Answer any *four* questions. Each question carries 6 marks.

23. Explain Semi average method with the help of an example.
 24. Explain various types of tests in Index Numbers.
 25. Briefly discuss the procedure followed in two way ANOVA.
 26. What do you mean by 3σ limit? Find the 3σ limit for np chart.
 27. Explain non sampling errors.
 28. Compute the trend values by three yearly moving average.

Year	2000	2001	2002	2003	2004	2005	2006
Population (in millions)	412	438	446	454	470	483	490

(4 x 6 = 24 Marks)

PART E

Answer any *two* questions. Each question carries 10 marks.

29. Explain in detail the principal steps in a sample survey.
 30. The number of defects on 20 items are given below.

Item No	1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1	1	1	1	2
No. of defects	2	0	4	1	0	8	0	1	2	0	6	0	0	2	1	0	3	2	1	0

Construct a chart for number of defects and establish quality standard for the future.

31. Calculate the price Index Number for 2007 by:

(i) Marshall Edgeworth's method

(ii) Fisher's method

Commodity	Price		Quantity	
	1997	2007	1997	2007
X	40	100	50	40
Y	30	90	10	2
Z	20	40	5	2

32. Explain the method of simple averages with the help of an example and explain the steps involved in ratio to moving average method.

(2 x 10 = 20 Marks)
