LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.A. DEGREE EXAMINATION – **ECONOMICS**

THIRD SEMESTER – **NOVEMBER 2017**

EC 3503 – QUANTITATIVE METHODS IN ECONOMICS

Date: 04-11-2017 Dept. No. Max. : 100 Marks

Time: 09:00-12:00

PART-A (5 x 4 = 20 Marks)

Answer any FIVE Questions each in about 75 words

1. A dealer in refrigerators estimates from his past experience the probabilities of selling his refrigerators in a day. These are as follows:

No. of refrigerators sold in a day:	0	1	2	3	4	5	6
Probability :	0.03	0.20	0.23	0.25	0.12	0.10	0.07

Find the mean number of refrigerators sold in a day.

2. State the importance of Poisson distribution.

3. Briefly explain Type I -error and Type II – error.

4. What are the uses of Chi-square Distribution?

5. Write a short note on one-way classification of ANOVA.

6. What is level of significance?

7. Write a note on ANOVA.

PART-B (4 x 10 = 40 Marks)

Answer any FOUR Questions each in about 250words

8. Explain the addition and multiplication theorem of probability.

9. List out the properties and importance of binomial distribution.

10 Explain one tailed and two tailed test of hypothesis with an illustration.

11. In an experiment on immunization of cattle from tuberculoses, the following results were obtained

	Affected	**Not affected**
Inoculated	12	26
Not inoculated	16	6

Calculate Chi-square($x^{2)}$ and discuss the effect of vaccine that the vaccine is not effective in controlling susceptibility to tuberculosis using x^2 test.

12. Explain the significance, assumptions and steps in construction of Latin Square Design (LSD).

13. Illustrate the Bayes' theorem of probability.

14. Explain the steps in carrying out One-way Analysis of Variance.

PART-C (2 x 20 = 40 Marks)
Answer any TWO Questions each in about 900 words

15. Discuss the different approaches of probability.

16. (a)Explain the properties and importance of normal distribution

(b) In Delhi with 100 municipal wards, each having approximately the same population, the distribution of typhoid cases in 2015 was as follows

No. of cases	0	1	2	3	4
No. of wards	63	28	6	2	1

Fit a Poisson distribution.

17. (a) Describer the procedure followed in testing a hypothesis.
(b) Mention the different types of hypothesis.

18. (i) Write a note on Randomized Block Design(RBD).
(ii) Use Chi-Square to test if the two attributes in the following contingency table are independent.

TRAINING				
Performance	**Intensive**	**Good**	**Average**	**Total**
Above average	100	150	40	290
Average	100	100	100	300
Poor	560	80	150	280
Total	250	330	290	870

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