TE Sem VI C- Scheme (Honours) INFT/CMPN/.ECS

Time: 3 Hours Total Marks: 80

N.B. 1. Question No. 1 is compulsory.
2. Attempt any three questions out of remaining five.
3. All questions carry equal marks
4. Assume Suitable data, if required and state it clearly.

1 **Attempt any four:** 20
(a) What are descriptive statistics and inferential statistics?
(b) Explain Continuous and Discrete probability distribution with one example.
(c) Elaborate Poisson probability distribution with one example.
(d) Discuss Outliers with examples.
(e) What are the elements of a time series data?

2 (a) What is Goodness of Fit test? Explain type I and type II error? 10

(b) An agent sells life insurance policies to five equally aged, healthy people. According to recent data, the probability of a person living in these conditions for 30 years or more is 2/3. Calculate the probability that after 30 years: 10
(a) All five people are still living.
(b) At least 3 people are still living.
(c) Exactly 2 people are still living.

3 (a) Discuss Nonparametric Methods. Explain Kruskal-Wallis Test. 10
(b) Show how Least Square Methods (LMS) are used to arrive at the regression equation. 10

4 a) What is Logistic Regression? 10
b) Find the simple linear regression equation that fits the given data. 10

Bill	34	108	64	88	99	54
Tip	5	17	11	8	14	5

5 a) A quality control department at a factory inspects 10 light bulbs produced in a day. The factory has a 95% success rate of producing a bulb that passes quality control (i.e., only 5% of bulbs are defective). Use a binomial distribution to calculate the probabilities and other statistics related to the number of defective bulbs among the 10 inspected. 10

b) Explain Multiple Regression. How is it different from simple regression? 10

6 a) What do you mean by Sign Test? Explain Wilcoxon Signed-Rank Test. 10
b) **Explain the following (any two):** 10
i. Stratified Random Sampling
ii. Boxplot
iii. Baye's theorem

****