Roll No.

Total No. of Pages : 01

Total No. of Questions : 08

M.Tech. (CSE) (Sem.-1)

MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE

Subject Code : MTCS-101-18

M.Code: 75153

Date of Examination: 12-01-2023

Time: 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES : 1.Attempt any FIVE questions out of EIGHT questions. 2.Each question carries TWELVE marks.

- 1. What is sampling distribution? State Central limit theorem. Discuss properties of central limit theorem with the help of suitable example.
- 2. What is Random Sampling? Discuss different advantages of random sampling. Explain the different types of Random Sampling techniques.
- 3. Explain the problem of overflying in the regression analysis with the help of graphical representation. How we can detect and avoid overfitting models?
- 4. Define isomorphism in graph theory. Compare Hamilton Path and Euler path using the suitable example. Discuss few properties of each path.
- 5. Discuss different applications of Machine learning. How machine learning technology will impact the society in present and coming times.
- 6. *"The concept of soft computing is based on learning from experimental data"*. Justify this statement. Discuss elements of soft computing.
- 7. Write a short note on
 - a) Correlation and Regression
 - b) Probabilistic inequalities
 - c) Method of Maximum likelihood
- 8. What is Markovchain? How to specify a Markovchain? Mention the Markov property.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

1 M-75153