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M.Tech. (ECE)/Power System) (2018 Batch) (Sem.-3)

BUSINESS ANALYTICS

Subject Code : MTOE-301A-18

M.Code : 76543

Date of Examination : 21-12-22

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 meant by “Business Analytics”? Explain how analytics provides competitive advantages in business functions of IT and Sales & Marketing.
2.
 - a) Define time series analysis? Explain the methods used for the study and measurement of trend in a time series?
 - b) Differentiate between Qualitative and Judgmental forecasting.
3. From the following data obtain the two regression equations:

| | | | | | |
|---|---|----|----|---|---|
| X | 6 | 2 | 10 | 4 | 8 |
| Y | 9 | 11 | 5 | 8 | 7 |

4. Elaborate with the help of an example the underlying concept of data mining. Investigate different techniques of data mining.
5. Explain the following :
 - a) Visual Data Recovery
 - b) Characteristics of Normal Distribution
6. Discuss the following :
 - a) Monte Carlo Simulation and Risk Analysis
 - b) Newsvendor model.

7. Consider the decision problem with the payoff table with four decision alternatives and three states of nature:

| States of Nature | | | |
|------------------|---|---|---|
| Alternative | X | Y | Z |
| A | 4 | 3 | 3 |
| B | 5 | 2 | 5 |
| C | 5 | 6 | 2 |
| D | 6 | 1 | 4 |

- a) Draw a decision tree for the above payoff table
- b) If the probability of the states of nature is 0.3, 0.4 and 0.3 for the states X, Y and Z respectively, find out the optimum decision.
- c) Assume that the payoff table provides cost rather than profit payoffs. What is the recommended decision now if the probabilities given in the option (b) still holds?
8. Draw organizational structure of Business Analytics. Describe the steps involved in prescriptive analytics for data analytics process.

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.