BACHELOR OF TECHNOLOGY (C.B.C.S.) (2020 COURSE)
B.Tech.Sem - IV E &TC :SUMMER- 2022
SUBJECT : ITC-II: DATA SCIENCE

Day : Friday
Time : 10:00 AM-01:00 PM

Date : 24-06-2022   **S-24664-2022**   Max. Marks : 60

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N.B. :
1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.

Q.1   What is Database Schema? Define fundamental components of any database **(10)**
schema.

OR

Q.1   What are the components of ER Diagram?   **(10)**

Q.2   What is measure of variability? Explain all 4 types with formulae.   **(10)**

OR

Q.2   What is Exploratory Data Analysis? What steps are part of it?   **(10)**

Q.3   What is: **(10)**
  i)   One way ANOVA
  ii)   Two-way ANOVA
  iii) MANOVA
  iv)   Limitation of 1 way ANOVA

OR

Q.3   If the equation of the line is $y = b0+b1X$. Find b0 and b1 values for the below **(10)**
values of X and Y.

X	Y
1	2
2	4
3	5
4	4
5	5

Q.4   What is labeled and unlabeled data? Explain Reinforcement Learning.   **(10)**

OR

Q.4 a) Write syntax for the following using pandas: **(05)**
  i)   View how many rows and columns are there in a data frame
          named Df
  ii)   Check if dataframe named Df has null values
  iii) Describe the dataframe named DF

  b) What are the disadvantages of simple linear regression?   **(05)**

Q.5 a) Explain different components of time series.   **(05)**

  b) What is unstructured data? What are different techniques of model validation?   **(05)**

OR

Q.5   Write syntax to import these libraries in python.   **(10)**
  i)   Decision Tree Classifier
  ii)   Matplot Lib
  iii) Test Train Split
  iv)   Linear Regression
  v)   Random Forest Classifier

Q.6   What are the different Building blocks of Power BI?   **(10)**

OR

Q.6   What are the types of visualizations in Power BI? Explain the use of some of **(10)**
them.

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