ME/SEM I (Choice Base)/ I.T. / MAY 2018
Data Scienc

Q.P Code : 40823

(3 Hours) Max. Marks: 80

N.B.: (1) Question No. **1** is **compulsory**.
(2) Attempt any **Three** questions out of remaining **Five** questions.
(3) **Figures** to the **right** indicate **full** marks.
(4) Assume suitable data if **necessary**.

Q-1 **Attempt any four.** **20**

a) What is role of a Data Scientist?

b) How is Business Intelligence different from Data Science?

c) What is the population and sample in statistics? Rationalize with suitable example.

d) What are the main challenges of text analysis?

e) Explain multiple Linear Regression in short.

Q-2 Explain the Global Innovation Network and Analysis Case Study with following: **20**
i) Business Problem Framed
ii) Initial Hypotheses
iii) Data
iv) Model Planning Analytic Technique
v) Result and Key Findings

Q-3 **a)** Explain data science process in detail with the help of diagram. **10**

b) What is Biclustering? List types of Biclusters and explain Biclustering techniques for analyzing gene expression data or for a recommender system.

Q-4 **a)** Give a detailed description of K-Nearest Neighbor (KNN) Algorithm and state clearly **10**
i) When do we use KNN algorithm?
ii) How do we choose the factor K?

b) What methods can be used for sentiment analysis? Describe sentiment analysis with suitable example using one of the listed methods. **10**

Q-5 **a)** Explain Logistic Regression in detail and describe how it can be used as a classifier. **10**

b) One of the great strengths of R is the user's ability to add functions. In fact, many of the functions in R are actually functions of functions. Give the Syntax for writing Functions in R and write a User Defined Functions (UDF) to compute the Factorial of given number. **10**

Q-6 **Attempt the following.** **20**

a) What is the Impact of Data Science?

b) ARIMA model

c) Data Science depends on a diverse set of skills. Shown the set of skill set required by the Data Science using Venn Diagram and explain in short.

d) Explain in short Data Journalism.

ME/Sem-I (CBSGS)/INFT/IT in Infrastructure design/M-18

Q.P. Code: 39909

(Time: 3 Hrs) **(Marks = 80)**

N.B.:
(1) Questions No. 1 is compulsory.
(2) Solve any three questions from remaining five questions.
(3) Assume suitable data if necessary.

Q1 In the Bharat University, there is a University Building and four department blocks in the campus. The University building is the administrative block where registration of new students and affiliating colleges takes place. The University building has 3 floors. The University has identified ERP software, which should be accessible by the employees and on campus students. The software is installed on a server at the administrative block. **(20)**

At the ground floor, there are 49 computers at the office section. At other floors, there are 50-computer user each. The farthest distance between the computer on the top most floor and the ground floor is less than 100 meters.

The department blocks have 2 floors each, with 50 computers in the ground floor of each block. The max distance between the department blocks and the main blocks is less than 500 Meters. The computers in the department block may be increased based on future expansion plans.

1. Hardware requirement analysis in University building with quantity.
2. Hardware requirements analysis in Department blocks.
3. The employees and students should receive dynamic IP addressing from a central server.
4. Network should be loop free at Layer 2
5. Every computer should be able to access the ERP software from each of the location using a fixed IP address.
6. IP Network design table.
7. Identify configurations on the hardware wherever appropriate.
8. Network topology diagram with necessary equipment's.

Q2. (a) What are Architecture considerations for Data center Design? **(10)**
(b) Explain any one data center design topology with diagram. **(10)**

Q3. (a) List criteria for selecting a WAN service provider. State importance of each criteria. **(10)**
(b) What is cloud Computing? Explain its service level model of cloud computing with diagram. **(10)**

Q4. (a) What is Service Level Agreement? What is the importance of SLA in Business Implementation? **(10)**
(b) Explain the wireless network component architecture **(10)**

Q5. (a) Explain Storage Area Network with its architecture, state its applications also. **(10)**
(b) What is Network Virtualization? How it is used in current SDN mechanisms? **(10)**

Q6. (a) Explain how SDN changed traditional Enterprise Network Design? Highlight with example. **(10)**
(b) Describe the relevance of Narrow Band and Spread Spectrum WLAN technologies **(10)**
