Sem- I / INFT based. Paper / Subject Code: 60101 / Data Science. / December-2019

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

N.B. : 1. Question no. 1 is **compulsory**.
2. Solve any **Three** questions out of remaining **Five** questions.

Q1	a	Explain process of data science	**5**
	b	Explain the differences between BI and Data Science.	**5**
	c	Explain the benefits of using TFIDF in text analysis.	**5**
	d	How many sections does a box-and–whisker divide the data into? Explain with example	**5**
Q2	a	Explain in detail data analytics life cycle.	**10**
	b	Describe how logistic regression as a classifier	**10**
Q3	a	Explain k-NN with suitable example.	**10**
	b	How to achieve and sustain competitive advantage with Data Science?	**10**
Q4	a	Discuss model based clustering with example	**10**
	b	Suppose everyone who visits a retail website gets one promotional offer or no promotional offer at all. We want to see if making a promotional offer makes a difference. What statistical method would you recommend for this analysis?	**10**
Q5	a	Define Data visualization and explain tools and techniques associated with it.	**10**
	b	Explain Data Journalism in detail	**10**
Q6	a	Explain plot() and pairs() function in R. Suppose you are using the plot() function to produce scatterplots of the quantitative variables. When it will produce an error message, 'Error in plot(abc , xyz) : object 'abc' not found?'	**10**
	b	Explain ARIMA model in detail.	**10**

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INFT / Paper / Subject Code: 60102 / IT Infrastructure Design. / Dec-2019

I-Choice based.

(3 Hours) [Total 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 Shopping Mall, there is a main Building and two storage blocks in the mall premises. The main building is the administrative block where enrollment of new items happens. The main building has 3 floors. The mall has identified ERP software, which should be accessible by the employees. The software is installed on a server at the administrative block. (20)

At the ground floor, there are 25 computers at the billing section. At other floors, there is one computer user each. The farthest distance between the computer on the top most floor and the ground floor is less than 50 meters.

The storage blocks have 2 floors each, with 05 computers in the ground floor of each block. The max distance between the storage blocks and the main blocks is less than 100 Meters. The computers in the storage block may be increased based on future expansion plans.

1. Hardware requirement analysis in main building with quantity.
2. Hardware requirements analysis in storage blocks.
3. The employees 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 is a DMZ? Explain its importance in Network Security? Discuss its limitations. (10)
(b) What is Ethernet technology? Discuss advantages of Ethernet over Token Ring, FDDI and ATM LAN Emulation (LANE). (10)

Q3. (a) What is WAN ? What key features should be considered for selecting a WAN provider? (10)

(b) What is TIA-942-A Data Center Standard ? What guideline does it includes? (10)

Q4. (a) What is a Data center ? List three data center topologies? Explain any one in detail. (10)
(b) Discuss the wireless network component architecture with diagram. (10)

Q5. (a) What is a SAN ? Discuss its role in data centers. (10)
(b) What is network Virtualization? How it is incorporated in Software Defined Networks? (10)

Q6. Write short notes on: (any four) (20)
(a) LWAPP Network Controller
(b) Intra and Inner controller Roaming
(c) PoX and NoX
(d) Cloud Computing and SaaS model.
(e) Service Level Agreement (SLA)
(f) WLAN security

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Sem - I - Choice Based.

Paper / Subject Code: 60103 / Advances in Software Engineering.

[Time: Three Hours] **[Marks:80]**

Please check whether you have got the right question paper.

N.B:
a. Question no 1 is compulsory.
b. Attempt any three questions out of remaining five questions.
c. Assume suitable data wherever necessary.
d. Suitable figures indicate marks.
e. All questions carry equal marks.

Q.1 a. What is software reuse? Explain code and design reuse. **05**
b. Explain developer's myth and its reality. **05**
c. Explain XP in brief. **05**
d. Explain prototype model and its limitations. **05**

Q.2 a. How incremental model differs from waterfall model? In which situation you will prefer using incremental model. **10**
b. Explain spiral model in detail. **10**

Q.3 An assignment submission system is to be developed, where the student can submit assignment in person or online. Every assignment is given a grade. The system must generate following reports. Defaulter's list assignment wise, list of students submitted the assignment, individual student report. Each subject can have maximum 3 assignments. There may be different faculties teaching different subjects. At any time a faculty must not teach more than two subjects. **20**

Draw Use Case, Activity Diagram (for any two use cases), and Class diagram.

Q.4 a. Explain web application testing strategies **10**
b. Explain design principles. **10**

Q.5 a. Explain different types of test conducted on the software. **10**
b. Write PDL to find large and small from two numbers. Draw CFG and design test cases for the same. **10**

Q.6 a. Explain SCRUM. **20**
b. Explain different type of integration testing. What is the need of stub and driver?

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Paper / Subject Code: 60104 / Elective I : User Experience Engineering. | Dec-2019

(3 Hours) [Total Marks: 80]

N.B. : (1) Question **No. 1** is compulsory.
(2) Attempt any **three** questions out of remaining questions.
(3) Assume suitable data if required.

Q.1 a) State different Goals of UX? (5)
b) Explain roots of usability? (5)
c) Explain Information Architecture? (5)
d) What is UX Design? Explain the Goals of UX Design. (5)

Q.2 a) What are the types of usability testing? Explain in detail. (10)

b) Explain Mental Model in detail (10)

Q.3 a) Explain elements of user experience? (10)

b) Explain Sketching? Sketch the flow model for ticket buying activity. (10)

Q.4 a) Explain the template of a UX process lifecycle (10)

b) Explain User requirement analysis with suitable example. (10)

Q.5 a) Explain UX Evaluation Techniques in detail. (10)

b) Define concept of Ideation in detail? State Difference between Idea creation and Critiquing. (10)

Q. 6 a) Explain interaction cycle and user action framework content categories. (10)

b) Define UAF and explain its Practical value in detail. (10)

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Paper / Subject Code: 60111 / Elective II : Management Information System. / Dec-2019

Q. P. Code: 50371

Time: 3 Hours **Total Marks: 80**

N.B. :(1) Question **No.1**is **Compulsory.**

(2) Attempt any 3 questions out of rest.

(3) Figure to the right indicate full marks.

(4) All questions carry equal marks.

1. College wants to design database for examinations system.

   a) Design tables (Student, branch, Semester, Subjects, marks) with assuming suitable attributes and normalize the database. **5**

   b) Define primary key, foreign key with its importance in database design. List Primary and foreign key in each table of above tables. **5**

   c) Draw Star schema and Snowflake schema for above design. **5**

   d) Explain difference between star schema and snowflake. **5**

2. a) Define Customer relationship Management. Explain in detail Operational And Analytical CRM. **10**

   b) Explain Cloud Computing with various types of Clouds **10**

3. a) Explain various Business intelligence Applications for presenting Results. **10**

   b) Explain Computer based Information System with its types. **10**

4. a) Explain Big data with its characteristics and issues **10**

   b) What is strategic information system? What strategies can company use to gain competitive advantage? **10**

5. a) Define Social Computing. Explain Social Shopping and Marketing. **10**

   b) Explain Pervasive Computing and the technologies that provide infrastructure For Pervasive Computing. **10**

6. Write short notes on any two **20**

   a) Transaction Processing System

   b) E-Commerce

   c) Customer Relationship Management

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