Instructions to the candidates

1)Answer Q1 or Q2, Q3 or Q4

2) Neat diagrams must be drawn wherever necessary.

3) Figures to the right side indicate full marks.

4) Assume suitable data if necessary.

Q.	Question	Marks	CO
1 a)	Explain Rumbaugh OMT technique in detail.	6	CO1
b)	Explain Layered approach of software development	5	CO1
c)	Explain Model Driven Architecture (MDA).	4	CO1
OR			
2 a)	Describe in brief – "Micro and Macro development process of Grady Booch."	6	CO1
b)	Compare traditional system development with Object Oriented analysis and design	5	CO1
c)	Draw and Explain 4+1 view architecture of UML	4	CO1
3 a)	Consider software that manages electronic music files. Some use cases are 'view songs by title', view songs by artist, 'view songs by album', play a song', 'play an album', 'randomize order'. Prepare a use case diagram; include appropriate relationships for the use cases. An appropriate parent use case for use case generalization can be added.	6	CO2
b)	State different approaches of class identification & Explain Class Responsibility Collaboration approach (CRC) in detail.	5	CO2
c)	Compare Use case diagram and Class diagram	4	CO2
OR			
4 a)	Convert the following description into a class diagram. Show classes, relationships and multiplicities. In a university there are different classrooms, offices and departments. A department has a name and it contains many offices. A person working at the university has a unique ID and can be a professor or an employee. A professor can be an associate or assistant professor and he/she is enrolled in one department. Offices and classrooms have a number ID, and a classroom has a number of seats. Every employee works in an office.	6	CO2
b)	Diagrammatically show generalization, include and extend relationship in the context of use case diagram.	5	CO2
c)	Write use case description for ATM system for withdrawal of money	4	CO2

SPPU In-Sem Offline Examination-April 2022

Class: TE   Branch _Information Technology   Semester: II

Subject : Computer Network and Security   (Code: 314451)

Maximum Marks: 30   Duration: 60 Minutes   Date: 04/04/2022

Special Instructions:
- ➢ Students can use Non Programmable Calculator.
- ➢ Assume suitable data if necessary.
- ➢ All question carry equal marks.
- ➢ Figure mentioned rights present marks for the question.
- ➢ Attempt Q1 OR Q2 and Q3 OR Q4.

Q. No.	Question / Description	Marks	CO
1.a	Revise the primitives involved in Client-Server architecture with neat sketch. Explain those in brief.	6	1
1.b	What do you mean by Telnet? Explain the need and number of connections available in telnet?	4	1
1.c	Justify why modern Email is better as compared to traditional Email.	5	1
	OR		
2.a	Differentiate between any three scenarios of Email. Identify the best of it.	6	1
2.b	Draw the client server architecture and explain it in detail.	4	1
2.c	Compare the functionality expected from USER Agent, MTA and MAA.	5	1
3.a	WLAN is more robust as compared with traditional LAN. Justify.	4	2
3.b	List the applications of WLAN and explain any two of them.	6	2
3.c	Sketch the 802.11 protocol stack and clearly indicate PCF, DCF, LLC, MAC and physical layers support schemes.	5	2
	OR		
4.a	Describe the characteristics of WLAN that makes it feasible and flexible for most of the applications.	4	2
4.b	Differentiate between Traditional LAN and WLAN. -	5	2
4.c	Differentiate between adhoc and infrastructure network. Give any two real time examples of the same.	6	2

Class: TE   Branch: Information Technology   Semester: II

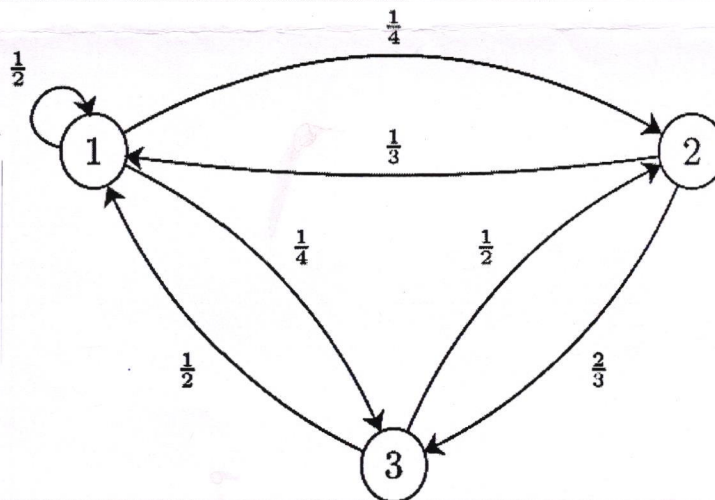Subject: Data Science and Big Data Analytics   (Code: 314452)

Maximum Marks: 30   Duration: 60 Minutes   Date: 05/04/2022

Special Instruction: Solve Q.1 OR Q.2, Q.3 OR Q.4

Q. No.	Question / Description	Marks	CO
Q. 1	**A)** What are the choices for reengineering the data warehouse? Explain in brief.	05	1
	B) Compare Shared-everything and Shared-nothing architectures.	05	1
	C) What are the pitfalls of data warehousing? Why are the companies shifting to Big Data using Hadoop?	05	1
OR			
Q. 2	**A)** What are various learning approaches? Explain with suitable examples.	05	1
	B) Compare Artificial Intelligence, Statistical Learning, Machine Learning, Data Mining and Big Data Analytics domains.	05	1
	C) What is data explosion? What factors had led to Big data explosion?	05	1
Q.3	**A)** What is the Expectation of a Random Variable? Calculate the Expectation of Random Variable X representing the "Sum of Two Dice".	05	2
	B) Find the transition matrix for given diagram. Also find transition probability from state 1 to 3 in exact three steps. 	05	2
	C) Explain Irreducible and Periodic Markov chain with suitable examples.	05	2

	OR			
Q.4	**A)** Explain Bernoulli and Binomial random variable with respective expressions.	05	2
	B) For Input stream: 1, 3, 4, 1, 5, 3, 4, 3 and Hash function: $h(x) = (6x+1) \bmod 5$. Find number of distinct elements using Flajolet Martin algorithm.	05	2
	C) Only 1 in thousand has a rare disease. Given true positive =0.9 and False positive=0.02. If randomly tested individual is positive, what is the probability that he/she has the disease?	05	2

Class: TEIT   Branch:IT   Semester:II

Subject: Web Application Development.   (Code: 314453)

Maximum Marks: 30   Duration: 60 Minutes   Date: 7/4/22

Special Instructions:
1) Answer Q.1 or Q.2, Q.3 or Q.4.
2) Neat diagrams must be drawn wherever necessary.
3) Figures to the right side indicate full marks.
4) Assume suitable data if necessary.

Q. No.	Question / Description	Marks	CO
Q.1	a) List and Explain CSS Selectors with suitable examples.	5	1
	b) How to create a hyperlink in HTML give proper syntax of hyperlink and suitable example?	5	1
	c) List new semantic tags with syntax used in HTML5 and explain document structure of HTML.	5	1
OR			
Q.2	a) What is HTML enlist and explain 5 elements of HTML with proper syntax?	5	1
	b) Explain Advantages and disadvantages of CSS.	6	1
	c) What is BOOTSTRAP GRID System and explain with suitable example?	4	2
Q.3	a) Write a program to demonstrate the use of Elements Selector.	4	2
	b) Enlist some feature of JavaScript and demonstrate use of function in JavaScript.	6	2
	c) How to send AJAX request in JavaScript?	5	2
OR			
Q.4	a) Specify the ways of place JavaScript in the HTML code with syntax.	6	2
	b) Explain working of AJAX with suitable diagram?	4	2
	c) What is JQuery?	4	2