

11 (SEM VI) / R-19 / SH-22 / 07-12-22

Duration: 3hrs

[Max Marks: 80]

Q.P. CODE : 8987

- N.B. : (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

1 Attempt any FOUR

- A Draw a three tier data warehousing architecture [20]
B Data : 4, 8, 15, 21, 21, 24, 25, 28, 34
Divide data in 3 bins (equal frequency) and perform smoothing by bin means and smoothing by bin boundaries on every bin
C How to calculate correlation coefficient for two numeric attributes and also comment on the significance of this value
D Write a short note on support and confidence
E Explain the concept of information gain which is used in decision tree algorithm?
- 2 A Describe any two methods of data reduction [10]
B Compare star schema, snowflake schema and fact constellation [10]
- 3 A Write and explain Bayes classification algorithm [10]
B Write the steps of Ada-boost algorithm [10]
- 4 A How is data mining used in Business Intelligence? [10]
B Give the overview of partition clustering methods [10]
- 5 A How can we further improve the efficiency of Apriori-based mining? [10]
B Explain OLAP operations with the examples [10]
- 6 A Describe the classification performance evaluation measures that are obtained from confusion matrix? [10]
B Use the normalization methods to normalize the following group of data: 200, 300, 400, 600, 1000
Use min-max normalization by setting min = 0 and max = 1 and z-score normalization

TE / IT / Sem-VI / R-19 / SH-22 / 09/12/2022

(Time : 3 hrs.)

Maximum Marks = 80

NB:

1. Question No. 1 is compulsory and solve any THREE questions from remaining questions.
2. Assume suitable data if necessary.
3. Draw clean and neat diagrams.

Q1.	Attempt (any four)	Marks
a.	Explain Semantic Web Stack	5
b.	TypeScript v/s Javascript	5
c.	Explain AngularJS expressions with syntax	5
d.	Explain features of MongoDB	5
e.	What are the features of Python Flask?	5
Q2.	a. Explain Evolution of Web	10
b.	Explain AngularJS dependency injection.	10
Q3.	a. Explain Accessing and Manipulating Databases commands in MongoDB	10
b.	How to set, access and delete cookies in Python Flask ?	10
Q4	a. Define RIA and explain characteristics of RIA	10
b.	Design a registration Form and perform Validation of fields.	10
Q5	a. Explain Sharding	10
b.	Explain Angular JS Data Binding	10
Q6	a. Explain Routing using ng-Route, ng-Repeat, ng-style, ng-view. With suitable example	10
b.	Explain REST API in detail.	10

TE IT | Sem-VI | R-19 | SH 2022 | 13/12/2022

Time: 3 Hours

Marks: 80

Q.P. Code
10013242

Note: 1. Q. No1 is compulsory

2. Solve any three questions out of the remaining five
3. Figures to right indicate full marks
4. Assume suitable data where necessary

Q.No1 Solve any four

- a) Explain the different features of VANET and E-VANET
- b) Write note on UMTS security.
- c) Compare FDMA, TDMA and CDMA
- d) Outline the method that supports mobility in CISCO Unified Wireless Network
- e) Differentiate between FHSS and DSSS.

(20)

Q.2

- a. Draw and explain UMTS network architecture and compare GSM and UMTS (10)
- b. Draw and explain the GSM time slot hierarchy. (10)

- Q.3.** a. Give the significance of WEP protocols. What are the features of WPA2 (10)
b. Draw and explain the architecture of Cisco UWN with its features. (10)

- Q.4** a. Explain the architecture of WSN protocol and discuss applications of WSN. (10)
b. Draw and explain LTE network architecture in detail. (10)

Q.5

- a. State different features of Zigbee and explain its protocol stack. (10)
- b. Explain 4G network architecture with its specifications. (10)

Q.6

- a. Draw and explain OFDMA technique for multiplexing. (10)
- b. Draw and explain system architecture of IEEE802.11. Differentiate between IEEE802.11 and IEEE802.16 (10)

TE - IT / SEM - VI / R - 19 / SH - 2022 / 15 - 12 - 2022

Q. P. Code : 15120

Maximum marks = 80

Time: 3 Hrs

Note: 1) Question one is compulsory. Answer any 3 out of questions 2 to 6.
 2) Each sub question of questions 2 to 6 carries 10 marks

Q1. Solve any 4 out of 6, each question carries 5 marks.

- What is bidirectional search?
- Explain what role is played by Correlation and Covariance in EDA?
- What are the Different Types of Machine Learning?
- Draw and explain structure of rational agent
- Explain various measures of the central tendencies of distribution.
- What is the Difference between Univariate, Bivariate, and Multivariate analysis?

Q2 a. Explain the Confusion Matrix with respect to Machine Learning Algorithms. What is a False Positive and False Negative and how are they significant?

Q2 b. What is PEAS? State and explain PEAS of automated taxi driver.

Q3 a. In detail, explain steps in the Data Science Project.

Q3 b. Write a note on Hill climbing. Explain an application of it.

Q4 a. Given jugs of 4 and 9 litres measure 1 and 3 litres.

Q4 b. What are the steps of Exploratory Data Analysis?

Q5 a. What is ANOVA technique? Explain different types of ANOVA.

Q5 b. What are the different types of plans?

Q6 a. Explain Data Visualization and its importance in data analytics?

Q6 b. Consider you are performing ML for predicting housing prices you have trained three models and following data summarizes the predicted house price by each model for 5 different trial runs.

Model Code	House Price Predicted (Lakh Rs)				
	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5
A	3.5	3.4	3.8	3.5	3.4
B	3.9	3.8	3.7	3.9	3.6
C	3.5	3.3	3.6	3.5	3.8

Perform One way ANOVA F Test on this data and comment on whether the mean house price predicted by models A, B, C are same with level of significance 0.05. (Use of F Table is allowed)

15120

(3 Hours)

Total Marks: 80

N.B.: (1) Question No.1 is compulsory.

- (2) Attempt any three questions from the remaining five questions.
- (3) Make suitable assumptions wherever necessary but justify your assumptions.

1.
 - (a) Explain Mobile forensic. What are various challenges in mobile forensics. 05
 - (b) Explain Forensic Duplicates as Admissible Evidence. 05
 - (c) What is evidence handling procedure? 05
 - (d) What are Challenges in network forensics ? 05

2.
 - (a) Explain Incident Response Process and its methodology. 10
 - (b) Compare active attacks vs Passive attacks. Classify the cybercrimes and explain any one briefly. 10

3.
 - (a) Discuss basic security precautions to be taken to safeguard Laptops and wireless devices and What are the devices related to security issues? 10
 - (b) Explain Volatile Data Collection from Windows system 10

4.
 - (a) What do you understand by social engineering? Give classification 10
 - (b) Briefly explain Types of digital Evidence with examples. 10

5.
 - (a) Explain process for collecting Network Based Evidence. 10
 - (b) Explain various guidelines for digital forensic report writing along with its goals. 10

6. Write a short note on (Any Two) 20
 - (1) Tools used in network forensics
 - (2) Roles of CSIRT in handling incident
 - (3) Email Tracing- Internet Fraud

TE/IT/Sem-VI/R-19) S.H. 2022/17-12-22

S.P.

15433

Time: 03.00 Hours

N.B 1. Q.1 is compulsory

2. Attempt any three from the remaining four questions.

3. Each Question carry 20 marks.

Max. Marks: 80

Q.1. Attempt All

- a) Explain components and connectors. 5
- b) Draw and explain Software Architecture building block. 5
- c) Comment on IEEE 1471. 5
- d) Discuss Scalability and Heterogeneity properties of Non-Functional software system. 5

Marks

Q.2.

- a) Explain how to improve the quality of Software Architecture. What are the issues? 10
- b) Explain architecture style and pattern. 10

Q.3.

- a) List analysis goals and explain types of analysis. 10
- b) Differentiate between Domain-Specific Software Engineering, Domain- Specific Architecture 10

Q.4.

- a) Explain in brief Deployment and Mobility Challenges. 10
- b) Explain in detail specific modeling techniques. 10

Q.5.

- a) What is an architectural model? What is its relationship to architecture? 10
- b) Distinguish between Distributed and Network Architectures 10

Q.6.

- a) Explain Service-oriented Architectures. 10
- b) What is the deployment concept? Explain Deployment and Mobility Challenges. 10