MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)
M.C.A. Sem-III : WINTER- 2022
SUBJECT : SOFTWARE DESIGN PATTERNS

Day : Monday | Time : 10:00 AM-01:00 PM

Date : 28-11-2022 | **W-22737-2022** | Max. Marks : 60

N.B.:

1) Q. No. 4 from Section- I is **COMPULSORY.**

2) Answer any **TWO** questions from Q. No. 1, 2, 3 in Section-I.

3) Answer any **TWO** questions from Q. No. 5, 6, 7 in Section-II.

4) All Questions carry EQUAL marks.

5) Answer to both the sections should be written in **SAME** answer book.

6) Draw neat and labelled diagram **WHEREVER** necessary.

SECTION-I

Q.1 Differentiate between Adapter class and Adapter object?

Q.2 Explain the role of design pattern in a Software Design.

Q.3 How Facade is related with singleton.

Q.4 Write short notes on the following (Attempt any TWO)

a) Integration Layer Design Patterns.

b) Observer Pattern

c) Prototype

d) Composite.

SECTION-II

Q.5 Explain motivation of Composite Pattern.

Q.6 How Flyweight helps in keeping heavy objects light weight.

Q.7 Explain Template Method Pattern.

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MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)
M.C.A. Sem-III : WINTER- 2022
SUBJECT : ARTIFICIAL INTELLIGENCE

Day : Wednesday | Time : 10:00 AM-01:00 PM

Date : 30-11-2022 | **W-22738-2022** | Max. Marks : 60

N.B.:

1) **Q.No.4** is **COMPULSORY**.
2) Attempt **ANY TWO** questions from **Q.No.1**to **Q. No.3** in Section-I.
3) Attempt **ANY TWO** question from **Q.No.5** to **Q.No.7** in Section-II.
4) Each question carries **12** marks.
5) Answer to both the sections should be written in **SAME** answer book.

SECTION – I

Q.1 **a)** What is supervised machine learning?

b) What is unsupervised machine learning?

Q.2 **a)** What are the steps in Natural Language Processing

b) Explain Rule- based system with example.

Q.3 **a)** Explain two data structures series and data frame supported by Panda.

b) Explain following functions in python.

i) count() ii) Mean() iii) Mode()

Q.4 Write short notes on **ANY THREE** of the following:

a) NumPy data types

b) Components of knowledge based system

c) Symbolic Artificial Intelligence

d) Arrays in NumPy

SECTION – II

Q.5 **a)** How knowledge can be represented by using semantic net with example.

b) Explain Bi-directional search technique.

Q.6 Explain Traveling-Salesman problem and its solution.

Q.7 Convert the following statement in First Order Predicate Logic.

a) Ravi likes all kinds of food.

b) Apple and chicken are food.

c) Anything any one eats and is not killed is food.

d) Ajay eats peanuts and is still alive.

e) Rita eats everything that Ajay eats.

f) Ajay eats food which do not liked by Rita

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MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)
M.C.A. Sem-III : WINTER- 2022
SUBJECT : INFORMATION SECURITY

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

Date : 2/12/2022 | **W-22739-2022** | Max. Marks : 60

N.B.

1) Q. No. 4 from Section I is **COMPULSORY**
2) Answer **ANY TWO** questions from Q.1,2,3 in Section – I
3) Answer **ANY TWO** questions from Q. 5 to Q. No. 7 in Section - II.
4) Figures to the **RIGHT** indicate **FULL** marks
5) Answer to both the sections should be written in **SAME** answer book
6) Draw a labelled diagram **WHEREVER** necessary.

SECTION-I

Q1	a)	What is information security? Explain in detail the need of information security	[06]
	b)	Describe the critical characteristics of information	[06]
Q2	a)	Describe Basic principles of network security	[06]
	b)	Discuss different measures to safe the important information in the organization.	[06]
Q3	a)	Explain in brief Principles and Models of Security	[06]
	b)	Explain information security measures in detail	[06]
Q4		Write short notes on ANY THREE of the following	[12]
	a)	Security of Devices at Network level	
	b)	Information leakage	
	c)	DoS Attack	
	d)	AES	
	e)	Hash Function (SHA-256)	
	f)	Cyber Crime	

SECTION-II

Q5	a)	What are Network Threats? How to safeguard any organisation from Network Threats?	[06]
	b)	Explain how S/MIME is better than MIME	[06]
Q6	a)	What is symmetric key cryptography? Discuss its advantages and limitations	[06]
	b)	Explain the general structure of secure hash functions	[06]
Q7	a)	How following can be achieved with message authentication code (MAC)? a. Message authentication b. Message authentication and confidentiality	[06]
	b)	Discuss the risk assessment and documentation of its result.	[06]

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