

MASTER OF COMPUTER APPLICATIONS (CBCS-2019 COURSE)
M.C.A. SEM - IV : WINTER :- 2021
SUBJECT: DESIGN PATTERNS

Day : Wednesday
Date 16-02-2022

W-22233-2021

Time : 02:00 PM-05:00 PM
Max. Marks: 60

N.B.:

- 1) **Q. No.4** from Section-I is **COMPULSORY**.
- 2) Answer **ANY TWO** questions from **Q.1, Q.2** and **Q.3** in **Section-I**.
- 3) Answer **ANY TWO** questions from **Q.5, Q.6,** and **Q.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 labeled diagram **WHEREVER** necessary.

SECTION-I

- Q.1** a) What is computer supported co-operation? Briefly describe types of it. (06)
b) State and describe eight golden rules of Human Computer Interface (HCI). (06)
- Q.2** a) Describe role of design pattern in solving problems. Illustrate it with any one example. (06)
b) State the intent of Flyweight design pattern and describe it with the class diagram. (06)
- Q.3** a) There is an object whose behavior changes when its state changes; which design pattern you will choose? Justify your answer. (06)
b) Explain with example the role of Abstract Factory design pattern. (06)
- Q.4** Write short notes on **ANY THREE** of the following: (12)
a) Factory method
b) Facade
c) Iterator
d) Decorator
e) CMOS model
f) Menu interface

SECTION-II

- Q.5** a) Which design pattern you will choose when there is need to have a design, where creation process of complex sub system shall support multiple representations of that subsystem? Comment on your choice. (06)
b) Describe with example the application of Adapter design pattern. (06)
- Q.6** a) What do you know about State design pattern? Draw the class diagram for it and describe applicability of same. (06)
b) There is need to use one of the implementation of family of algorithms; which design pattern you will choose and why? (06)
- Q.7** a) State the use of Human Computer Interface (HCI) in online shopping to be used by using Natural Language Processing (NLP). (06)
b) State and describe goals and objectives of Human Computer Interface (HCI) for designing user interface for online learning portal. (06)

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