

CDOE
MASTER OF COMPUTER APPLICATIONS (CBCS - 2020 COURSE)
M.C.A. Sem-III : WINTER :- 2021
SUBJECT: SOFTWARE DESIGN PATTERNS

Day : Monday
Date 14-02-2022

W-23064-2021

Time : 10:00 AM-01:00 PM
Max. Marks: 60

N.B.

- 1) Q.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, 6, 7 in Section – II.
- 4) All question carry **EQUAL** marks.
- 5) Answers to both the sections should be written in the **SAME** answer book.
- 6) Draw neat and labelled diagrams **WHEREVER** necessary.

SECTION – I

- Q.1** a) Draw structure of Factory Method design pattern and describe role of each participants.
b) State when to use Decorator design pattern. Also state example of it in Java language.
- Q.2** a) State the intent of Adaptor design pattern and describe usage of it.
b) When to use Composite design pattern? Justify your answer.
- Q.3** a) What do you know about J2EE design patterns? State categories of it and describe role of design patterns in each category.
b) Describe the mechanism of describing a design pattern?
- Q.4** Write short notes on the following (Attempt any **THREE**)
a) Template method
b) Façade
c) Bridge
d) Singleton

SECTION – II

- Q.5** a) In bus tracking system whenever there is bus movement then it needs to published position of bus and get notified to all its subscribers. Which design pattern you choose? Justify your answer.
b) Describe the role of Abstract Factory design pattern with example.
- Q.6** a) In coin sorting mechanism coins are sorted at various stages depends on the responsibility of each stage. State the design pattern used to implement it and explain its structure.
b) When to use Proxy design pattern? Illustrate your choice with example?
- Q.7** a) When to use State design pattern? Explain your answer with example.
b) Provide intent and structure of the Proxy design patterns. Give examples about usage of it.

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