

Code No: 155SG

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, January/February - 2023

DESIGN PATTERNS

(Common to CSE, IT)

Time: 3 Hours

Max. Marks: 75

- Note:** i) Question paper consists of Part A, Part B.
 ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
 iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A**(25 Marks)**

- 1.a) What is the meaning of “Intent” in design pattern? [2]
- b) How to select a design pattern? [3]
- c) List out some problems associated in designing a document editor. [2]
- d) What is the rationale behind Prototype design pattern? [3]
- e) List different types of creational patterns. [2]
- f) Define a Builder pattern. [3]
- g) What is the basic problem being solved by the Bridge pattern? [2]
- h) Write the intent of Proxy pattern. [3]
- i) What are the consequences of Chain of Responsibility pattern? [2]
- j) What is the intent of mediator pattern? [3]

PART – B**(50 Marks)**

- 2.a) Explain how design patterns solve design problems.
 - b) Give the step-by-step approach to apply a design pattern effectively. [5+5]
- OR**
- 3.a) What are the key elements in the description of a design pattern?
 - b) What is the basis for classifying design patterns? Categorize and tabulate the design patterns. [5+5]
- 4.a) Describe embellishing the User Interface.
 - b) Discuss about Lexi’s user interface and its design problems. [5+5]
- OR**
- 5.a) Illustrate supporting multiple Look-and-Feel standards.
 - b) Can we use an abstract factory for supporting multiple window system in Lexi’s design? Explain. [5+5]
- 6.a) What are the implementation issues of prototype design pattern? Discuss.
 - b) Write sample code of Prototype pattern. [5+5]
- OR**
7. Explain the consequences of the Abstract Factory pattern and Builder patterns. [10]

- 8.a) Explain the sample code of Flyweight pattern.
b) Write about motivation and consequences of Façade pattern. [5+5]

OR

- 9.a) What are two classic examples of decorators? How does the Decorator pattern help to decompose the problem?
b) Write sample code of Composite pattern. [5+5]

- 10.a) Discuss the implementation issues of the Strategy behavioral pattern.
b) Write about the intent, motivation, structure and applicability of the Visitor pattern. [5+5]

OR

- 11.a) Discuss about the structure and participants of the state behavioral pattern.
b) Explain the participants, collaborations and sample code of Template method. [5+5]

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Used papers 2023