

**RA**

**Code No: 155SG**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech III Year I Semester Examinations, January - 2025**

**DESIGN PATTERNS  
(Computer Science and Engineering)**

**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? Explain. [2]
- b) Write about the guidelines used to select the design patterns. [3]
- c) Define formatting. [2]
- d) Discuss various issues involved in document editor design. [3]
- e) Write the structure Factory Method. [2]
- f) Explain the motivation for Builder pattern. [3]
- g) What are the two variations of the Adapter pattern? [2]
- h) Discuss the kind of problems that are being solved by the Bridge pattern. [3]
- i) What is the purpose of Chain of Responsibility? [2]
- j) What are the consequences of Visitor pattern? [3]

**PART - B**

**(50 Marks)**

2. Explain the process of organizing the catalog in design patterns. [10]

**OR**

- 3.a) How to use design patterns? Discuss with suitable illustrations.  
b) How does the design pattern play its role in software design, explain? [5+5]

- 4.a) Explain how the textual analysis problem of document editor be solved using design patterns.  
b) What are the embellishments that can be added to Lexi's user interface? Explain. [5+5]

**OR**

5. Explain in detail about the document structure. [10]

6. Explain the Motivation, Structure, Collaborations and Implementation of the Singleton Pattern and Prototype patterns. [10]

**OR**

- 7.a) Explain the consequences of the Abstract Factory pattern.  
b) Write the implementation issues of Builder design pattern. [5+5]

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8.a) What are the different language features that are exploited by proxy pattern?

b) Explain the intent and motivation of facade pattern.

[5+5]

QA QA QA QA **OR** QA QA QA G

9.a) When can be a Flyweight pattern effectively be applicable? Discuss.

b) What are the consequences of Composite pattern? Discuss about their participants.

[5+5]

10.a) Write the motivation and applicability of observer pattern.

b) Write about the structure and participants of state design pattern.

[5+5]

QA QA QA QA **OR** QA QA QA G

11.a) Explain the implementation issues of Strategy behavioral pattern.

b) Describe in detail about structure, participants of Command Pattern.

[5+5]

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