

R15

Code No: 127CF

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, May/June - 2019

DESIGN PATTERNS

(Common to CSE, IT)

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A**(25 Marks)**

- 1.a) What is a Design Pattern? Explain. [2]
- b) What are the three categories of design patterns? [3]
- c) List out some problems associated in designing a document editor. [2]
- d) What is the benefit of Factory pattern? [3]
- e) What is the intent of the Adapter pattern? [2]
- f) Explain what is Composite pattern? [3]
- g) What are the consequences of mediator pattern? [2]
- h) What is the intent of the Observer pattern? [3]
- i) Write the purpose of behavioral patterns. [2]
- j) What are the five errors in using design patterns? [3]

PART-B**(50 Marks)**

- 2.a) What are three reasons for studying design patterns?
- b) What is the relationship between "consequence" and "forces" in a pattern? [5+5]

OR

- 3.a) What are the key elements in the description of a design pattern?
- b) Explain how design patterns solve design problems. [5+5]

- 4.a) Write about the functionality of operations that are accessed indirectly through user operations.

- b) What are the implementation issues that are to be considered for builder pattern? [5+5]

OR

5. What are the benefits of Singleton pattern? Discuss the implementation issues of singleton pattern in detail. [10]

- 6.a) What is the basic problem being solved by the Bridge pattern? Explain.

- b) The Façade pattern and the Adapter pattern may seem similar. What is the essential difference between the two? Explain. [5+5]

OR

- 7.a) What are two classic examples of decorators? How does the Decorator pattern help to decompose the problem?

- b) Why are the Bridge and Decorator patterns more correctly classified as structural rather than behavioral patterns? [5+5]

- 8.a) Discuss about the structure and participants of Interpreter pattern.
b) What are the implementation issues to be considered in Chain of Responsibility pattern? Explain.

[5+5]

OR

- 9.a) Explain in detail about the applicability and structure of Command pattern.
b) Describe the implementation issues of Memento pattern.

[5+5]

- 10.a) Write about the benefits and liabilities of the Visitor pattern.
b) What are the difference between the Strategy pattern and the Template Method pattern?

[5+5]

OR

- 11.a) Describe in detail about the structure and participants of Strategy design pattern.
b) Write about the implementation issues of State Behavioral pattern.

[5+5]

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