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Code No: 117CF

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, April/May - 2018

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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.

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PART-A

(25 Marks)

- 1.a) What is the meaning of "Intent" in design pattern? [2]
b) How to use a design pattern? Write the guidelines. [3]
c) What is the rationale behind Prototype design pattern? [2]
d) List different types of creational patterns. [3]
e) Define Bridge pattern. [2]
f) Sketch the structure of composite pattern. [3]
g) List the benefits of Iterator pattern. [2]
h) What is the intent of Memento pattern? [3]
i) Write about the purpose of Behavioral patterns. [2]
j) Sketch the class diagram for TCP connection class. [3]

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PART-B

(50 Marks)

- 2.a) Write the general template used for describing the design patterns.
b) List and explain different ways of organizing design patterns. [5+5]

OR

- 3.a) Give an overview of organizing a catalog.
b) Name the patterns that are included in catalog of design patterns along with their intents. [5+5]

- 4.a) Explain the Spelling Checking and Hyphenation design problem in detail.
b) Why the Singleton uses a special method to instantiate objects? Discuss. [5+5]

OR

- 5.a) Discuss about the supporting multiple window systems design problem.
b) Explain the consequences of the Abstract Factory pattern and Builder patterns. [5+5]

- 6.a) Discuss about the participants of Adapter pattern and explain the functions of each.
b) What are the implementation issues of Façade pattern? Explain with sample code. [5+5]

OR

- 7.a) Explain about the intent, uses and related patterns of Decorator and Proxy patterns.
b) State the uses and related patterns of Flyweight and Bridge design patterns. [5+5]

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- 8.a) What are the issues to be considered while applying Observer pattern?
- b) What are the consequences of Chain of Responsibility pattern? Explain. [5+5]

OR

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- 9.a) Describe the implementation issues of Mediator pattern.
- b) Write about the structure and participants of Interpreter pattern. [5+5]

- 10.a) Discuss about consequences and implementation issues of State design pattern.
- b) Explain the participants, collaborations and sample code of Template method. [5+5]

OR

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- 11.a) Write about the intent, motivation, structure and applicability of Visitor pattern.
- b) Explain the implementation issues of Strategy pattern and write a sample code. [5+5]

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