

Code No: 137SG**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year I Semester Examinations, December - 2019****DESIGN PATTERNS****(Computer Science and Engineering)****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 as sub questions.

PART – A**(25 Marks)**

- 1.a) List the Essential Elements of Design Pattern. [2]
- b) Write the steps of how to select a Design Pattern. [3]
- c) Define Document Structure. [2]
- d) List the responsibilities of GLYPH. [3]
- e) List the Intents of Creational Patterns. [2]
- f) Draw the Structure of abstract factory design pattern. [3]
- g) Define Structural Patterns. [2]
- h) List participants of Bridge Design Pattern. [3]
- i) Sketch the class diagram of Interpreter Design pattern. [2]
- j) Describe about visitor patterns. [3]

PART – B**(50 Marks)**

- 2.a) Explain the Template of the Design Pattern.
- b) Explain how Design Pattern solves Design problems. [5+5]
OR
- 3.a) State and explain the Classification of Design pattern.
- b) How to organize the catalog of design patterns? [5+5]
- 4.a) Explain about abstracting Object Creation.
- b) List and explain goals and constraints of spelling checking and hyphenation. [5+5]
OR
5. Explain the process of recursive composition in Building a Document. [10]
- 6.a) Explain the Intent, Structure, Motivation, Applicability, and Sample Code of Singleton Design Pattern.
- b) Describe the Structure and Implementation of Builder Design pattern with a real time example. [5+5]
OR
- 7.a) Discuss the Intent, Motivation, Applicability, Collaboration of Factory method Design Pattern.
- b) Write the Implementation of Prototype Design pattern with a real time example. [5+5]

8. Explain in detail about Flyweight Design pattern. [10]
OR
9. Describe the Composite Design pattern and write its implementation. [10]
- 10.a) Write the Intent, Applicability and Structure of Mediator Design pattern.
b) Discuss the Structure, Participants and Related patterns of Memento Design pattern.[5+5]
OR
- 11.a) Explain the implementation of Template Method design pattern.
b) Discuss the implementation of Observer design pattern. [5+5]

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