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Design Patterns

P. Pages : 2

Time : Three Hours

**NIR/KW/18/3491**

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
 2. Solve Question 1 OR Questions No. 2.
 3. Solve Question 3 OR Questions No. 4.
 4. Solve Question 5 OR Questions No. 6.
 5. Solve Question 7 OR Questions No. 8.
 6. Solve Question 9 OR Questions No. 10.
 7. Solve Question 11 OR Questions No. 12.
 8. Due credit will be given to neatness and adequate dimensions.
 9. Assume suitable data whenever necessary.
 10. Diagrams and chemical equations should be given whenever necessary.
 11. Illustrate your answers whenever necessary with the help of neat sketches.
 12. Use of non programmable calculator is permitted.

1. a) Describe the elements of design pattern. **6**
- b) i) Abstract factory is also known as **1**
- ii) Match the following. **4**
- | | |
|--------------------|------------------------|
| 1. Abstract | a. Wrapper |
| 2. Factory method | b. Handle/Body |
| 3. Adopter pattern | c. Kit |
| 4. Bridge pattern | d. Virtual constructor |
- iii) Which of the following is not a section in design pattern description? **2**
- | | |
|-----------------|---------------------|
| a) Motivation | b) Domain |
| c) Consequences | d) Related patterns |

OR

2. a) Explain design pattern. List all design patterns and its classification. **7**
- b) Explain usage of design pattern with proper example. **6**
3. a) Explain the concept of prototype design pattern with suitable example. **7**
- b) Define Intent, Also known as, Applicability sample code of bridge design pattern with example. **6**

OR

4. a) Explain where singleton design pattern plays on important role along with its advantages and disadvantages. **7**
- b) Explain abstract factory design pattern with class diagram. **6**

5. a) Explain Adapter design pattern in terms of its intent, applicability, structure and consequences. 7
- b) Where to use Decorator design pattern explain with example. 6

OR

6. a) How to implement composite design pattern explain with suitable example. 7
- b) Explain the role of structural design pattern in object oriented design. 6
7. a) Illustrate the notion of command design pattern with suitable example. 7
- b) Explain template method design pattern with class diagram implementation. 7

OR

8. a) Match the following design pattern with the design aspects that design patterns let you vary. 4
- | | |
|----------------|--|
| a) Strategy | i) Grammar & interpretation of long |
| b) State | ii) An algorithm |
| c) Mediator | iii) States of object |
| d) Interpreter | iv) How and which object interact with each other. |
- b) Explain observer design pattern intent, motivation, consequences and applicability. 4
- c) Explain mediator design pattern in terms of intent, structure, usage and applicability. 6
9. a) Which design pattern is suitable for supporting multiple look-and-feel standards. Explain with example. 7
- b) Explain the concept of embellishing the user interface. 7

OR

10. a) List and explain the seven design problem for document editor application. 7
- b) Which design pattern is help for spelling checking and hyphenation problem. 7
11. a) What are design complexities? List the design complexities. 7
- b) Explain the design pattern application for gaming. 6

OR

12. a) Explain methods to analyze the complexities of design pattern. 7
- b) Explain the product design and its application. 6



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The secret of getting ahead is getting started.

~ Mark Twain

