USN ☐☐☐☐☐☐☐☐☐☐   **15IS72**

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019

Software Architecture and Design Patterns

Time: 3 hrs.   Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1   a.   What is design pattern? How patterns and frame works are different?   **(06 Marks)**
    b.   Explain Object-Oriented Development.   **(04 Marks)**
    c.   What are the key concepts of object oriented design?   **(06 Marks)**

OR

2   a.   What does the design pattern do? How to select a design pattern?   **(06 Marks)**
    b.   What pitfalls, hints or techniques should be aware of, when implementing the pattern?   **(06 Marks)**
    c.   Describe the benefits to manipulating objects solely in terms of the interface defined by the abstract classes.   **(04 Marks)**

Module-2

3   a.   "The analysts need to learn the existing system and the requirements". Justify.   **(05 Marks)**
    b.   What are the Guidelines to remember when writing Use Cases?   **(04 Marks)**
    c.   Draw class diagram for library and class diagram for Member of Library.   **(07 Marks)**

OR

4   a.   Explain the major steps in analysis phase.   **(06 Marks)**
    b.   Compare functional requirements versus non-functional requirements.   **(04 Marks)**
    c.   Describe conceptual, software and implantation classes.   **(06 Marks)**

Module-3

5   a.   How classes and objects are composed to form larger structure?   **(04 Marks)**
    b.   Explain intent, Motivation, Applicability, Structure, Participants, Collaboration, Consequences and Implementation of Decorator Pattern.   **(08 Marks)**
    c.   Mention few common situations in which the Proxy pattern is applicable.   **(04 Marks)**

OR

6   a.   What do you mean by-part-whole hierarchies? Explain with suitable example.   **(05 Marks)**
    b.   Explain an object adapter and a class adapter.   **(05 Marks)**
    c.   What are the issues to consider when implementing the composite pattern?   **(06 Marks)**

Module-4

7   a.   Explain Model-View-Controller pattern in detail.   **(06 Marks)**
    b.   Draw and explain sequence diagram for adding a line.   **(05 Marks)**
    c.   Mention the characteristics of architectural patterns.   **(05 Marks)**

OR

8 a. What are the benefits of design of the subsystems? (04 Marks)

b. Explain the issues need to be highlighted when implementing the UNDO operation. (06 Marks)

c. Describe implementation of view class with example. (06 Marks)

Module-5

9 a. Explain the performance of client/server systems. (05 Marks)

b. How the Library System can be deployed on the World-Wide-Web? (05 Marks)

c. Describe the difficulties in accessing objects in a different SVM. (06 Marks)

OR

10 a. Explain how to implement object-oriented system on the web. (05 Marks)

b. List and explain for hosting distributed applications. (05 Marks)

c. Write short notes on:
   i) Marshalling and Demarshalling
   ii) GET or POST (06 Marks)

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