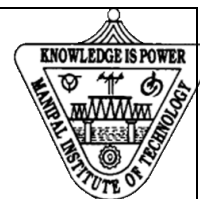


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MANIPAL INSTITUTE OF TECHNOLOGY
(Constituent Institute of Manipal University)
 MANIPAL-576104



VII SEMESTER B.E.(COMPUTER SCIENCE AND ENGINEERING) DEGREE
END-SEMESTER EXAMINATION-DECEMBER 2013
SUBJECT: Object Oriented Analysis and Design with UML (CSE 405)
DATE: 4-12-2013

TIME: 3 HOURS

MAX.MARKS: 50

Instructions to Candidates

- **Note:** Answer any **FIVE** full questions.

1. Case Study: TRAVEL AGENCY

“Software for a travel agency provides reservation facilities for the people who wish to travel on tours by accessing a built-in network at the agency bureau. The application software keeps information on tours. Users can access the system to make a reservation on a tour and to view the information about the tours available without having to go through the trouble of asking the employees at the agency. The third option is to cancel a reservation that he/she has made. Any complaints or suggestions that a client may have could be sent by email to the agency or stored in the complaint database. Finally, the employees of the corresponding agency can use the application to administrate the system’s operations. Employees can add, delete or update the information on the customers and the tours. For security purposes, each employee is provided a login ID and password by the manager to be able to access the database of the travel agency manager to be able to access the database of the travel agency.”

1.A. Draw the detailed class diagram for the above case study with attributes and methods, using proper relationships and proper notations.

1.B.What is the difference between aggregation, association and composition? Give proper example for each.

1.C. Describe the analyst’s role in a system development project(any four).

(5+3+2)

- 2.A.** Write the difference between verification and validation.
2.B. Why are *iterations* an important part of the Unified Process?
2.C. Describe the Object oriented Systems Development Life Cycle (UP)
2.D. Write an Use Case template for event “Travel agency keeps tour information through TA software” for the use case given in Q1.

(2+2+4+2)

- 3. A.**What is the need of an Interaction diagram?

Create an Activity diagram for the following collaboration.

A customer wants to draw money from his bank account. He enters his card into an ATM (automated teller machine). The ATM machine prompts „Enter PIN“. The customer enters his PIN. The ATM (internally) retrieves the bank account number from the card. The ATM encrypts the PIN and the account number and sends it over to the bank. The bank verifies the encrypted Account and PIN number. If the PIN number is correct, the ATM displays „Enter amount“, draws money from the bank account and pays out the amount.

- 3.B.** What are the three primary tasks of the project management discipline that relate to the inception phase? Briefly list out each.

((1+5) +4)

- 4A.**What is a precondition? What is a post condition? Why are they important in use case development?

- 4B.** Explain the difference between a discovery prototype and evolving prototype

- 4C.** Draw complete use case diagram for the case study given in Q1

(3+2+5)

- 5A.**What is the purpose of a state chart? Draw the State Diagram for any two class of case study given in Q1.

- 5B.**What is the Importance of Design Patterns? Describe Singleton Pattern with five design elements.

((1+3)+(1+5))

- 6A.**Define indirection.

- 6B.**What is the purpose of structure chart in program design? Distinguish between a control module, subordinate module and library module on a structure chart with the help of diagram.

- 6C.**Define: (i) DFD (ii) CRUD Matrix
(iii)Component Diagram (iv) Deployment Diagram.

(2+ (1+3) +4)

*****All the Best*****