AL-111

April -2018

B.C.A., Sem.-IV

CC-211 : Object Oriented Analysis and Design

Time : 3 Hours]   [Max. Marks : 70

1. (A) Answer the following :   8
    (1) What is system ? Explain different phases of SDLC.
    (2) Define Feasibility study. Explain Economic and Schedule feasibility in details.

OR

Answer the following :
    (1) Explain spiral model with its advantages and disadvantages.
    (2) Explain Fact finding techniques.

  (B) Draw Context and First level diagram for case given below :   6
Online mail order catalogue system allows people to shop from home. When a customer receives the catalogue and wants to buy something, they can telephone, fax or email their order to the company. The company gets the order and sends the goods and an invoice. When the customer receives the goods with a delivery note, they send payment and receive a receipt for their payment.

OR

Create Context level and 1st level DFD for Hotel management system where customer orders food and book rooms. Customer can book different types of rooms, having different tariffs. Customer can book one room individually also and more rooms for family. Hotel Management gives discounts on bulk booking and corporate booking. At the time of payment customer can use different modes like cash, cheque, and credit card.

2. (A) Answer the following :
    (1) Explain Abstraction, Encapsulation and Polymorphism in details.   8
    (2) Explain OOA in details.

OR

Answer the following :
    (1) Explain aggregation and composition with an example.
    (2) Explain Coupling and Cohesion in details.

  (B) Explain OOD in detail.

OR   6

Explain Generalization, Specialization, Link and Association in details.

3. (A) Answer the following :

(1) Explain elements of Usecase diagram in details.

(2) Draw Class diagram from case given below.

In college there are one or more courses. Each course offers one or more subjects to the students. A particular subject will be offered by only one course. Each course has instructor and instructor can work for one or more course. Student can enroll upto 5 subjects in a college. Instructors can teach upto 3 subjects. The same subject can be taught by different instructors.

OR

Answer the following :

(1) Explain elements of Class diagram in details.

(2) Draw Usecase diagram for Appointment system for doctor's office. A patient comes to office, the receptionist get patient details. If the patient is new, the receptionist creates new patient record. The receptionist display list of possible appointments to patient. The patient chooses from the list of new appointments, modify or cancel appointments. The patient makes payment.

(B) Draw Object diagram from case given below :   6

An organization offers a variety of courses in a variety of areas such as learning management techniques and understanding different software languages and technologies. Each course is made up of a set of topics. Tutors in the organization are assigned courses to teach according to the area that they specialize in and their availability. The organization publishes and maintains a calendar of the different courses and the assigned tutors every year. There is a group of course administrators in the organization who manage the course including course content, assign courses to tutors and define the course schedule.

OR

Draw class diagram for a car rental application. The car rental agency has multiple offices/branches. The customer visits the agency for enquiry and takes a test ride, then selects the car by signing the "terms and conditions" form. The customer can also book the car through telephone, email and SMS. The agency checks the availability of the car and gives status to the customer. The customer can also avail the driver facility if required, by paying additional charges. The billing is done based on the type of vehicle and distance travelled.

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4. (A) Answer the following : **8**

    (1) Explain elements of Activity diagram.

    (2) Draw sequence diagram from case given below.

ABC Jewels has specialized in online jewellery, selling wonderful ranges of both children's and women's jewellery. A customer can register online so that he/she can check the status of the placed order. A customer can purchase any jewellery item online either by using his/her existing account or as an anonymous user specifying shipping address and contact information. Customer can only check the status of his/her order if he/she creates an account. The customer will pay online through credit or debit card and the order will be delivered on the shipping address.

OR

Answer the following :

    (1) Explain different states available in statechart diagram.

    (2) Draw Activity diagram from case given below.

The Insurance system provides automotive insurance to car owners. Initially prospective customers fill out an insurance application which provides information about the customer and his/her vehicles. This information is sent to an agent, who sends it to various insurance companies to get quotes for insurance. When the response return, the agent then determines the best policy for the type and level of coverage desired and gives the customer a copy of the insurance policy proposal and quote.

(B) Give difference between Sequence diagram and collaboration diagram in details. **6**

OR

Explain Combine fragments and Guard condition in details.

5. Answer the following : **14**

    (1) Which of the following UML diagrams has a static view ?

        (a) Collaboration   (b) Use case

        (c) State chart   (d) Activity

    (2) In class diagram, inside each class what is to be printed ?

        (a) Its name, attributes, operations and derived class

        (b) Its name, attributes and operations

        (c) Its name and attributes

        (d) Its name and operations

    (3) The incremental model is an intuitive approach to the _____ model.

    (4) Processes or Data stores can be shown in the Context Level DFD. (True/ False)

(5) Full form of SDLC is _____.

    (a) System Development Life Cycle.   (b) Software Design Life Cycle.

    (c) System Design Life Cycle.   (d) Software Development Life Cycle.

(6) _____ divide the activity into section.

(7) Which of the following diagram is time oriented ?

    (a) Collaboration   (b) Sequence

    (c) Activity   (d) None of the mentioned

(8) A _____ is represented graphically by an arrow into or out of processes.

    (a) process   (b) entity

    (c) level   (d) flow

(9) _____ and _____ diagrams are part of implementation phase.

(10) A _____ relationship is a parent child relationship between use cases.

    (a) Composition   (b) Generalization

    (c) Aggregation   (d) Multiplicity

(11) Sequence diagrams are useful in understanding Class diagram.(True/ False)

(12) A _____ defines the scope of the system in usecase diagram.

    (a) Actor   (b) Usecase

    (c) System boundary   (d) Relationship.

(13) A _____ describes a State Machine.

    (a) State flow diagram   (b) State chart diagram

    (c) State character diagram (d) State Machine flow diagram

(14) _____ diagram is also called communication diagram.

    (a) Activity   (b) Collaboration

    (c) Sequence   (d) Component

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