

This question paper contains 3 printed pages.

3132

Your Roll No.....

MECTA
COMPUTER TECHNOLOGY AND APPLICATION
Paper – CS.552
(Methodology of Software Engineering)

J

Time : 3 hours

Maximum Marks : 100

(Write your Roll No. on the top immediately on receipt of this question paper)
Attempt five questions in all. Question No. 1 is compulsory.
Assume missing data, if any.

Q1. Answer following to the point.

- a) Give the example of Projects where (i) Spiral Model is most appropriate, (ii) Spiral Model is not appropriate. Justify your answer.
- b) What do you think will be the effect of introducing CASE tools for an organization which is at CMM Level one?
- c) Define methodology. Name three Object Oriented and two procedure oriented Methodologies, naming concepts of any one of them.
- d) What is meta Model? Name three meta model giving concepts for one of them?
- e) What is Case shell? How it is useful?

(5x4)

Q2. (a) Give a spiral Sketch of Requirements Engineering Process. What are the different activities of Requirements Analysis?

- (b) How is SRS useful in Software development life cycle ? What is the standard format of describing SRS ? Describe specification of function merge of WORD software required to merge two files.

(8,12)

OR

(a) Explain the concepts of view Point oriented techniques of requirements discovery, using the example of college Registration System.

- (b) Explain the ethnography techniques for discovering requirements with suitable example. What are the advantages and disadvantages of ethnography techniques?

(10,10)

Q3. Consider Developing a Hotel Management System. For five star hotel located at different cities. It maintains information about its customers by assigning them a unique code. Hotel has Hospitality manager who manages different services like food, house keeping, laundry etc. through set of room service employees. Hotel provides different kind of rooms single bed, double bed; suite, deluxe suite. Customer can make reservation, cancel reservation. Every room has status occupied, empty reserved. When a Customer is allocated room his check in date and time is recorded. Before allocating a room, It is checked by house keeper prior to allocation. At the time of check out, date and time is recorded. The room is once again checked for its facilities and bill is generated which include service availed and cost of missing items. Discount is offered to regular customer.

(a) Draw a leveled DFD for generating bill at check out. Evaluate the consistency of this DFD by various checks. Generate the corresponding Data Dictionary.

(b) Draw state transition diagram of a room of this hotel .

(14,6)

OR

(a) Develop high level DFD of Air Reservation System. Derive corresponding structure chart illustrating the steps of Central transform strategy.

(b) What are the advantages of Object Oriented Design ? Describe the various activities of OOD.

(12,8)

Q4. Consider an E library, where members can refer books, journals etc. There are separate charges for reading, copying and printing an article/books. The charges are also based on article type, access period, copies printed etc. These activities are carried out by checking the subscription of a member. Members can access by password. They can access the articles by particular author's name, (subject, title) or publishers. Librarian can add books or remove them periodically. Draw the following UML diagrams explaining the concepts used in the diagram

a) Use Case Diagram,

- b) Class diagram
- c) Sequence diagram for generating the bill of user
- d) Activity diagram for accessing or printing an article

(5x4)

Q5. (a) What are two techniques of constructing Case tools? Which one is better and Why?

(b) What are the concepts of OPRR Meta model? Model the concepts of Use Case diagram using OPRR.

(10,10)

Q6. Write short notes on following (any two):

- a) Rational Unified Process
- b) Case Architecture
- c) Object oriented design of Hospital Management System

(10+10)