

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

MCA (Sem.-1st)

SYSTEM ANALYSIS AND DESIGN

Subject Code : MCA-105

Paper ID : [B0105]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks each and students has to attempt any ONE question from each SECTION.
2. SECTION-E is COMPULSORY carrying TWENTY marks in all.
3. Use of non-programmable scientific calculator is allowed.

SECTION-A

1. What are the main characteristics of large software? How feasibility study is done for these projects? 10

What would you follow for developing software products

- for each of the following applications? 10

(a) A well understood data processing application.

(b) A new software product that would connect computers through satellite communication.

(c) Extremely large software connecting cellular services across the country.

(d) A new text editor.

Discuss advantages and disadvantages of each model in all cases.

SECTION-B

3. (a) How decision trees and decision tables help in problem solving in designing? Explain by taking suitable example. 6
- (b) Describe characteristics of information gathering tools. 4
4. Draw Data Flow diagrams and describe data dictionary for the following problem. "The residents raise repair request of the different roads of the city. For each request, supervisor visits each road and studies the severity of the road condition. Depending upon the severity of the road condition and the type of the locality (VIP area, busy area, relatively deserted area

etc.) he sets the priority of the repair work. He also estimates the requirements of the raw material of different types, types and number of machines and type and number of the personnel required. He inputs this data to the software. Now based on this data, software schedules the repair of the road depending upon the priority of repair work and availability of the raw material, machines and personnel. The mayor of the city can request for the various road repair statistics such as the number and type of repair carried out over a period of time and the repair work outstanding at any point of the time” 10

SECTION-C

5. What are the different ways to organize the files? Explain the indexed sequential file organization in detail. 10
6. (a) Differentiate between Black box and white box testing. 5
(b) What are the main components of a Test Plan? 5

SECTION-D

7. How system implementation plan is designed? Describe the role of activity 10
8. Describe the procedure of hardware and software selection. What are the main criteria followed? 10

SECTION-E

9. **Answer briefly :**
 - (a) What are the advantages of prototyping?
 - (b) Define cohesion between modules.
 - (c) What is beta testing?
 - (d) Name any two structured analysis tools.
 - (e) Describe any two roles of a system analyst.
 - (f) How Make vs buy decisions are made?
 - (g) Describe any two characteristics of form design.
 - (h) List any two software development life cycle models.
 - (i) What are the different phases of waterfall model?
 - (j) What are inverted lists?