ALCCS - NEW SCHEME

Code: CT41  Subject: SOFTWARE ENGINEERING
Time: 3 Hours  Max. Marks: 100

NOTE:
• Please write your Roll No. at the space provided on each page immediately after receiving the Question Paper.
• Question 1 is compulsory and carries 28 marks. Answer any FOUR questions from the rest. Marks are indicated against each question.
• Parts of a question should be answered at the same place.

Q. 1  (7 × 4)

a. Explain why, for large systems development it is recommended to have throw away prototype?

b. What is the purpose of domain Analysis?

c. Why is quality so important in software design?

d. What is transform mapping? Explain the various steps in transform mapping in brief.

e. Differentiate between stress testing and recovery testing.

f. Explain Reliability and Availability.

g. Define Measure, Matric and Indicator.

Q. 2  (6)

a. What myths about software development process are often believed by software practitioners?

b. Compare the waterfall model and the spiral model of the software development. In what type of applications waterfall model and spiral model are most suited.

c. How is a Gant Chart used for scheduling and monitoring?

Q. 3  (9)

a. What is COCOMO-II model? Where is it used? Explain the model along with its computational details.

b. Why do we compute function points and 3D-feature points? What is the difference between the two? Explain the method of computing 3D feature points.

Q. 4  (9)

a. Write short notes on:
   (i) Alpha and beta testing.
   (ii) Regression testing and smoke testing.
b. Draw flow graph for the given problem whose program is shown below. Find its cyclomatic complexity and identify all the independent paths which exists in the program given below:

```java
void Binary (boolean found) {
    int top, bott, mid, x;
    int A[20];
    boolean found = false;
    bott = 0;
    top = size-1;
    mid = (top+bott)/2;
    if (A[mid] == x)
        found = true;
    else
        found = false;
    while (bott <= top ++! found) {
        mid = (top+bott)/2;
        if (A[mid] = x)
            found = true;
        else if (A[mid] < x)
            bott = mid+1;
        else
            top = mid-1;
    }
    return found;
}
```

Q.5

a. Why high Cohesion and low coupling is required for object oriented programming concept? (3)

b. Discuss the impact of software reuse on productivity, quality and cost of the project. (6)

c. Describe corrective, adaptive, perfective and preventive maintenance. (6)

d. Define Integrity. How to measure integrity? (3)

Q.6

You have been asked to build a web based library management system for an organization:
(i) Develop an entity relationship diagram that describes data objects, relationships, and attributes. (6)
(ii) Develop a context-level model for the system. (3)
(iii) Develop a level-1 DFD for the system. (6)
(iv) Develop a data dictionary for the system. (3)

Q.7

Write short notes on any THREE of the following:
(i) CASE Tools (ii) Halstead analysis (iii) Incremental model (iv) Software Requirement Specification (6×3)