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**END SEMESTER REGULAR / RETEST  
EXAMINATION, JULY- 2023**

Branch : Computer Engineering

Semester : 6th

Subject Code : CO- 603

**SOFTWARE ENGINEERING**

Full Marks - 70

Time - Three hours

The figures in the margin indicate full marks  
for the questions.

**Instructions :**

- (i) All questions of PART - A are compulsory.
- (ii) Answer any five questions from PART - B.

**PART - A**

Marks - 25

1. Choose the correct answers of the following :

1×15=15

(a) Which of the following is not a Software  
development life cycle model ?

- (i) Evolutionary Model
- (ii) Spiral Model
- (iii) Prototype Model
- (iv) Autonomous Mode

[Turn over

(b) Which of the following is/are causes of Software crisis ?

- (i) Project running over budget
- (ii) Project running over time
- (iii) Increase in size of software
- (iv) All of the Above

(c) Which one of the following is a functional requirement ?

- (i) Maintainability
- (ii) Portability
- (iii) Robustness
- (iv) None of the above

(d) \_\_\_\_\_ does not correspond to a good Software Requirements Specification (SRS).

- (i) Verifiable
- (ii) Complete
- (iii) Traceable
- (iv) Ambiguous

(e) Which of the following is not a diagram studied in Requirement Analysis ?

- (i) Use Cases
- (ii) Entity Relationship Diagram
- (iii) State Transition Diagram
- (iv) Activity Diagram

(f) External Entities may be a

- (i) source of input data only
- (ii) source of input data or destination of results
- (iii) destination of results only
- (iv) repository of data

(g) In Software design, which is suitable for good design ?

- (i) Low Coupling
- (ii) High Cohesion
- (iii) Both (i) and (ii)
- (iv) High Coupling

- (h) Which of the following is/are reliability matrix ?
- (i) MTBF
  - (ii) MTTR
  - (iii) MTTF
  - (iv) All of these
- (i) Which of the following is not in black box testing ?
- (i) Equivalence partitioning
  - (ii) Boundary value analysis
  - (iii) Path testing
  - (iv) None of these
- (j) Regression testing is done during
- (i) Testing phase
  - (ii) Maintenance phase
  - (iii) Coding phase
  - (iv) None of these
- (k) Programming knowledge is essential in
- (i) Black box Testing
  - (ii) White box testing
  - (iii) Both (i) and (ii)
  - (iv) None of these

- (l) Which of the following is/are software evaluation criterion/criteria ?
- (i) Security
  - (ii) Interoperability
  - (iii) Usability
  - (iv) All of these
- (m) Critical path is related with
- (i) Gantt chart
  - (ii) PERT chart
  - (iii) Work breakdown chart
  - (iv) Both (i) and (ii)
- (n) Which of the following is/are cost estimation models ?
- (i) Jensen model
  - (ii) COCOMO model
  - (iii) Putnam model
  - (iv) All of these
- (o) Rayleigh curve is related to
- (i) effort and delivery time for a software project
  - (ii) feasibility study of software project
  - (iii) cost estimation of software project
  - (iv) None of these.

2. Write True or False :

1×5=5

- (a) Spiral model is called Meta model.
- (b) CFG is required for Path testing.
- (c) Risk planning means preparing a strategy to deal with some of the risks.
- (d) Configuration management is essential for team projects to control changes made by different developers.
- (e) GANTT chart allows us to record the progress of project.

3. Match the following :

1×5=5

(a) PROLOG	(i) Logic programming
(b) JAVABeansi	(ii) Procedural programming
(c) LISP	(iii) Component based software
(d) JAVA	(iv) Functional programming
(e) C	(v) Object-oriented programming

PART - B

Marks - 45

- 4. (a) Define Software Engineering. 1
- (b) What is prototyping model? Explain. Is it always important? 2+4=6
- (c) Explain the importance of Waterfall model. 2
- 5. (a) What is Requirement Gathering? List the characteristics of good SRS document. 2+3=5
- (b) List the general syntax of SRS Document. 4
- 6. (a) What is DFD? List the symbols used to draw DFD. Draw a context diagram for Library Management software. 1+4+2=7
- (b) Give an example of low coupling and high cohesion in software development. 2
- 7. (a) Explain the different types of software reliability matrices. 4
- (b) What do you mean by Quality Assurance? 2
- (c) Differentiate between ISO 9000 and SEI CMM model. 3

8. (a) Design test suite using white box testing technique for the following code : 5

```
function big( int x, int y)
```

```
if ( x> y)
```

```
large = x;
```

```
else
```

```
large = y;
```

- (b) What is integration testing? Explain the different integration testing. 1+3=4

9. (a) Explain role of documentation in Software Engineering.

(b) Differentiate between internal and external documentation.

(c) List some criteria for evaluating a software. 3+3+3=9

10. (a) Suppose a project was estimated to be 400 KLOC. Calculate the effort and development time for each of the three model i.e., organic, semi-detached and embedded. 6

(b) State any three good software engineer attributes. 3

11. (a) List three advantages of OOP. 3

(b) What is ERD? List five basic components of an ERD. 1+5=6

12. (a) Explain with example alpha, beta and acceptance testing. 6

(b) What is Project planning? 3

13. Write short notes on : 3×3=9

(a) PERT Chart

(b) Project staffing

(c) Risk analysis tracking and control.