Printed Pages:2 | Sub Code: KCS-601

Paper Id: 236546 | Roll No.

B. TECH.
(SEM VI) THEORY EXAMINATION 2022-23
SOFTWARE ENGINEERING

Time: 3 Hours | *Total Marks: 100*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

(a) Define generic software with example.
(b) Define software components.
(c) Mention any two non-functional requirements on software to be developed.
(d) What is meant by software prototyping?
(e) What do you mean by horizontal and vertical partitioning?
(f) What is the software architecture?
(g) Distinguish between verification and validation.
(h) Distinguish between alpha and beta testing?
(i) Mention the advantages of CASE tools.
(j) Define adaptive maintenance.

SECTION B

2. Attempt any *three* of the following: **10x3=30**

(a) Iterative waterfall and spiral model for software lifecycle clean and discuss various activities in each phase.
(b) What are the problems faced in software engineering? Explain each in detail.
(c) Explain about the structure chart and all its types with suitable example.
(d) Explain boundary value analysis and its significance with example.
(e) Discuss Software Configuration Management and various tasks in SCM process. Explain version control and various types of project risks.

SECTION C

3. Attempt any *one* part of the following: **10x1=10**

(a) Explain software characteristics in detail. Discuss the reasons of software crisis.
(b) Discuss the various Mc Call's quality factors with quality triangle.

4. Attempt any *one* part of the following: **10x1=10**

(a) Explain the SEI-CMM model. What do you mean by state of fire fighting.
(b) What are the various stages of requirement engineering process? Explain it with diagrammatic representation.

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5. Attempt any *one* part of the following: 10x1=10

(a) Draw the software design framework and discuss the elements of design model.

(b) Illustrate the principles of software design. Discuss the characteristics of good software design.

6. Attempt any *one* part of the following: 10x1=10

(a) Draw the control flow graph and Calculate the cyclomatic complexity with three methods and independent paths for the given code-

```
IF A = 100
THENIF B > C
THEN A = B
ELSE A = C
ENDIF
ENDIF
PRINT A
```

(b) Discuss the various types of structural testing techniques with example of each.

7. Attempt any *one* part of the following: 10x1=10

(a) Draw the general model of software re-engineering and elaborate it.

(b) Write short notes on:
(i) Function Point
(ii) COCOMO
(iii)Defect, Fault, Failure

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