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B.Tech. DEGREE EXAMINATION, JUNE 2024
Fourth Semester

18CSC206J – SOFTWARE ENGINEERING AND PROJECT MANAGEMENT
(For the candidates admitted during the academic year 2018-2019 to 2021-2022)

Note:

- (i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
- (ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours

Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Marks BL CO PO

Answer **ALL** Questions

- | | | | | |
|---|---|---|---|---|
| 1. _____ are applied throughout the software process. | 1 | 1 | 1 | 1 |
| (A) Framework activities | | | | |
| (B) Umbrella activities | | | | |
| (C) Planning activities | | | | |
| (D) Construction activities | | | | |
| 2. _____ is a software development life cycle model that is chosen if the development team has less experience on similar projects. | 1 | 1 | 1 | 2 |
| (A) Interactive enhancement model | | | | |
| (B) RAD | | | | |
| (C) Spiral | | | | |
| (D) Waterfall | | | | |
| 3. Which one is not a size measure for software product? | 1 | 2 | 1 | 4 |
| (A) Loc | | | | |
| (B) Function point | | | | |
| (C) Use cases | | | | |
| (D) Cyclomatic complexity | | | | |
| 4. The project planner examines the statement of scope and extracts all important software functions which is known as | 1 | 1 | 1 | 4 |
| (A) Association | | | | |
| (B) Decomposition | | | | |
| (C) Planning process | | | | |
| (D) Aggregation | | | | |
| 5. Which is an indication of the relative functional strength of a module? | 1 | 1 | 2 | 3 |
| (A) Cohesion | | | | |
| (B) Coupling | | | | |
| (C) Elaboration | | | | |
| (D) Refactoring | | | | |
| 6. What is the correct order in which a software project manager estimates various project parameters while using COCOMO? | 1 | 2 | 2 | 4 |
| (A) Effort, duration, cost, size | | | | |
| (B) Size, duration, cost, effort | | | | |
| (C) Size, effort, duration, cost | | | | |
| (D) Size, cost, duration, effort | | | | |
| 7. Identify the one which has collection of tools and data models that enables a software to handle change in a productive way. | 1 | 1 | 2 | 4 |
| (A) SCM repository | | | | |
| (B) SCM database | | | | |
| (C) SCM content management system | | | | |
| (D) SCM change management system | | | | |

8. _____ refers to the systematic attempt, which is implemented to ascertain the threats to any project plan. 1 2 2 3
 (A) Rick projection (B) Performance risk
 (C) Risk identification (D) Support risk
9. Which one of the following is not a software construction characteristics? 1 2 3 4
 (A) Modularity (B) Reliability
 (C) Simplicity (D) Requirement
10. Which of the following is not a software code reuse methods. 1 1 3 4
 (A) Libraries (B) Open source
 (C) Inheritance (D) Refactoring
11. In structured programming, _____ and _____ are separate. 1 1 3 1
 (A) Data and code (B) Data and algorithm
 (C) Data and database (D) Data and data structure
12. Which one of the following is not a source code review operation sequence? 1 2 3 2
 (A) Desk check, walkthrough, code review, final inspection (B) Walkthrough, code review, final inspection desk check
 (C) Code review, final inspection, desk check, walkthrough (D) Final inspection, desk check, walkthrough code review
13. Which one of the following testing is also known as white box testing? 1 1 4 1
 (A) Structural testing (B) Error guessing technique
 (C) Design based testing (D) Code testing
14. What type of test must be done for applications that have many versions? 1 1 4 3
 (A) Stress testing (B) Recovery testing
 (C) Regression testing (D) Mutation testing
15. Identify the document that describes in detail how the testing is being planned and how it will be managed across different test levels. 1 2 4 3
 (A) Test management (B) Master test plan
 (C) Test execution (D) Test reports
16. _____ technique provides a logical representation of various possible operational scenarios of the application being tested. 1 1 4 3
 (A) Boundary value analysis (B) Cause effect graphing
 (C) Equivalence portioning (D) Basis path testing
17. Maintenance life cycle approach is similar to the concept of 1 1 5 1
 (A) Defect fix model (B) Agile software development
 (C) Iterative software development (D) Test case model
18. A version of the product which has passed initial QA but for which no documentation or support is available. 1 2 5 3
 (A) Alpha release (B) Beta release
 (C) Internal release (D) External release

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|--|---|---|---|---|
| 19. The modification of the software to match changes in the ever changing environment falls under which category of software maintenance. | 1 | 2 | 5 | 4 |
| (A) Corrective | | | | |
| (B) Adaptive | | | | |
| (C) Perfective | | | | |
| (D) Preventive | | | | |
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- | | | | | |
|---|---|---|---|---|
| 20. In which model there is no planning involved in the whole process and is mostly and adhoc approach. | 1 | 1 | 5 | 2 |
| (A) Quick fix model | | | | |
| (B) Boehm's model | | | | |
| (C) Osborne model | | | | |
| (D) Iterative enhance model | | | | |

PART – B (5 × 4 = 20 Marks)

Answer **ANY FIVE** Questions

Marks BL CO PO

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|---|---|---|---|---|
| 21. How do you define a story point in scrum? What are the two essential features a scrum team should posses? | 4 | 2 | 1 | 1 |
| 22. Illustrate SCM process with neat diagram. | 4 | 1 | 1 | 1 |
| 23. What are the characteristics of a good software design? | 4 | 2 | 2 | 2 |
| 24. Using an example explain the concept of redefined component structure. | 4 | 2 | 2 | 2 |
| 25. Differentiate vertical and horizontal portioning. | 4 | 2 | 2 | 3 |
| 26. Differentiate verification and validation. | 4 | 2 | 4 | 3 |
| 27. What is maintenance cost? How it is classified? | 4 | 2 | 5 | 4 |

PART – C (5 × 12 = 60 Marks)

Answer **ALL** Questions

Marks BL CO PO

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|---|----|---|---|---|
| 28. a. The gaming industry strongly relies on the initial versions of games created to have a kickstart and then adapt to the feedback from various perspectives. Also if the industry requires a proper risk evaluation. Choose and explain a process model that suits this scenario. List the advantages and disadvantages. | 12 | 4 | 1 | 4 |
| (OR) | | | | |
| b. For a given project was estimated with a size of 600 KLOC. Calculate the effort, scheduled time for development. Also, calculate the average staff size and productivity of the software for organic, semidetached, embedded project type.
Organic mode: $a_1 = 2.4, b_1 = 1.05, c_1 = 2.5, d_1 = 0.38$
Semidetached mode: $a_1 = 3.0, b_1 = 1.12, c_1 = 2.5, d_1 = 0.35$
Embedded mode: $a_1 = 3.6, b_1 = 1.20, c_1 = 2.5, d_1 = 0.32$ | 12 | 3 | 1 | 4 |
| 29. a. What is a software architecture? Explain the different styles of architecture with its advantages and disadvantages. | 12 | 2 | 2 | 3 |
| (OR) | | | | |
| b. Explain the different components of analysis model and how it is converted to design model. Draw the diagram. | 12 | 2 | 2 | 4 |

30. a. Why coding standards are important? Explain the different standards followed in coding framework. 12 2 3 2

(OR)

b. How software configuration management play an important role in software construction? Explain. 12 3 3 2

31. a. Explain in detail about Software Testing Life Cycle (STLC). Differentiate white box testing with black box testing. 12 2 4 4

(OR)

b.i. What is a test case and test bed? 6 2 4 1

ii. Illustrate test case report format and explain with an example. 6 3 4 2

32. a. Explain the software maintenance life cycle with a diagram. Explain the financial reasons for which maintenance may be needed. 12 2 5 4

(OR)

b. What are the product release management tasks and explain the different types of product release management types? 12 3 5 2

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