(7 pages)

Reg. No. : ....

Code No. : 7887 Sub. Code : WCSE 11/ VCSE 11

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2024.

First Semester

Computer Science — Elective-I

ADVANCED SOFTWARE ENGINEERING

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions.

Choose the correct answer :

1. In ————— the internal logic of each of the modules is specified in software engineering.

   (a) Architecture focuses

   (b) High level design

   (c) Detailed design

   (d) Low level design

2. ————— is the major quality control measure used during software development.

   (a) Testing (b) Coding

   (c) Analysis (d) Requirements

3. The process that deals with the technical and management issues of software development is called a —————

   (a) software engineering

   (b) software process

   (c) ordering constraints

   (d) high quality

4. How many types of requirements identified by quality function deployment?

   (a) 4 (b) 5

   (c) 3 (d) 2

5. A ————— shows the decision making logic and the corresponding actions taken in a tabular or a matrix form.

   (a) decision tree (b) condition checking

   (c) processing logic (d) decision table

6. In algebraic specification, which section defines the signatures of the interface procedures?

   (a) Types section (b) Exception section

   (c) Syntax section (d) Equations section

7. How many major categories of project manager responsibility?

   (a) 2   (b) 3

   (c) 4   (d) 5

8. ———————— techniques are essentially based on making an educated guess of the project parameters.

   (a) Problem estimation

   (b) Analytical estimation

   (c) Heuristic

   (d) Empirical estimation

9. ———————— is a special type of bar chart where each bar represents an activity.

   (a) CPM   (b) PERT

   (c) Activity network   (d) Gantt chart

10. Which of the following types of cohesion can be considered as the strongest cohesion?

   (a) Logical   (b) Coincidental

   (c) Temporal   (d) Functional

11. A ———————— is constructed from a collection of primitive data items.

   (a) data structure   (b) data type

   (c) data value   (d) data abstraction

12. A ———————— is a manual method of verification.

   (a) Critical design review

   (b) Consistency checkers

   (c) Cyclomatic complexity

   (d) Design walkthrough

13. What is the primary goal of a strategic approach to software testing?

   (a) To eliminate all bugs from the software

   (b) To minimize the number of test cases

   (c) To ensure the software meets business requirements and quality standards

   (d) To expedite the software development process

14. Structural testing is also known as

   (a) White-box testing

   (b) Black-box testing

   (c) Gray-box testing

   (d) User acceptance testing

15. Reliability of software refers to

   (a) The ability of the software to meet its specified requirements

   (b) The ease with which the software can be modified or extended

   (c) The probability of the software functioning correctly under specific conditions for a defined period

   (d) The process of converting legacy systems into newer technologies

PART B — (5 × 4 = 20 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

16. (a) Categorize the software quality attributes.

Or

   (b) Explain how to executing the time boxing model with neat diagram.

17. (a) Examine the various approaches and guidelines of collaborative requirements gathering.

Or

   (b) Interpret axiomatic specification. How to develop an axiomatic specifications?

18. (a) Infer about the SPMP document of project planning.

Or

   (b) Sketch and explain the work break down structure of MIS problem.

19. (a) Explain unified modeling language (UML).

Or

   (b) Compare the object-oriented design versus function-oriented design approaches.

20. (a) Write short notes on structural testing.

Or

   (b) Criticize the configuration management activities and types of software version in detail.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

21. (a) Summarize the primary key challenges of software engineering.

Or

   (b) Illustrate the important desired characteristics of software process.

22. (a) Explain the organization of the SRS document and technique for representing the complex logic.

Or

(b) Describe the operational semantics of formal methods. Write the merits and limitations of formal methods.

23. (a) Write the basics of COCOMO model.

Or

(b) Discriminate the necessity of software configuration management and its management activities.

24. (a) Explain the different strategy of software design in detail.

Or

(b) Explain the detailed design and process design language (PDL).

25. (a) Summarize the art debugging and its various techniques.

Or

(b) Criticize the reverse engineering scope and task. Explain the various level of reverse engineering.

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