

MCA
THIRD SEMESTER (SPECIAL REPEAT)
SOFTWARE ENGINEERING AND PROJECT MANAGEMENT
MCA-301

(Use separate answer scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

(PART-A: Objective)

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1X20=20

1. What is Software Engineering?
 - a. Designing a software
 - b. Testing a software
 - c. Application of engineering principles to design a software
 - d. None of the these
2. The contents of the SRS document are:
 - a. Functional requirements
 - b. Nonfunctional requirements
 - c. Goals of implementation
 - d. All of these
3. How is generalization implemented in Object Oriented Design?
 - a. Inheritance
 - b. Polymorphism
 - c. Encapsulation
 - d. All of the above
4. Which of the following provides semi-automatic and automatic support to methods in a layered technology?
 - a. Methods
 - b. Tools
 - c. Process
 - d. Quality Focus
5. Model selection is based on _____.
 - a. Requirement
 - b. Development team and users
 - c. Project type & associated risk
 - d. All of the above
6. Which of the following serves as metrics for project size estimation?
 - a. Lines of code
 - b. Function point
 - c. Number of persons
 - d. Only (a) and (b)
7. System Development Life Cycle (SDLC) is _____ used by the system experts to design a system.
 - a. A processor
 - b. A process
 - c. A system
 - d. None of the above
8. Why is it important to measure the process of software engineering and software it produces?
 - a. It is really not necessary unless the project is extremely complex
 - b. To determine costs and allow a profit margin to be set
 - c. To determine whether a software group is improving or not
 - d. To make software engineering more like other engineering processes
9. What is the key objective of Integration testing?
 - a. Modeling Errors
 - b. Interface Errors
 - c. Procedure Errors
 - d. None of the mentioned

10. Which one of the following is not a software process quality?
 - a. Efficiency
 - b. Portability
 - c. Timeliness
 - d. Reliability
11. Misinterpretation of customer communication is a sample of possible cause defects.
 - a. True
 - b. False
12. COCOMO stands for _____.
 - a. COntained COst Model
 - b. COnstructive COst MOdel
 - c. COmmon COntrol MOdel
 - d. COmposite COst MOdel
13. Which of the following is not a valid phase of SDLC (Software Development Life Cycle)?
 - a. Testing Phase
 - b. Requirement Phase
 - c. Deployment phase
 - d. Testing closure
14. _____ is / are the most important and fundamental phases of SDLC.
 - a. Preliminary investigation
 - b. Requirement Analysis
 - c. Design, Testing and Implementation
 - d. All of the mentioned above
15. For which estimation software size should be known?
 - a. Time estimation
 - b. Effort estimation
 - c. Cost estimation
 - d. Software size estimation
16. Which of the following risks are derived from the project level?
 - a. Lack of user involvement
 - b. Insufficient project management
 - c. Ineffective integration
 - d. Ineffective integration
17. Model-driven engineering is just a theoretical concept. It cannot be converted into a working/executable code.
 - a. True
 - b. False
18. Effective risk management plan needs to address which of these issues?
 - a. Risk avoidance
 - b. Risk monitoring
 - c. Contingency Planning
 - d. All of the above
19. Which of the following is not part of the Test document?
 - a. Test Case
 - b. Requirements Traceability Matrix [RTM]
 - c. Test strategy
 - d. Project Initiation Note [PIN]
20. In Design phase, which is the primary area of concern?
 - a. Architecture
 - b. Data
 - c. Interface
 - d. All of the above

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(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. What is the difference between programs and software products? What is SLCM? Why do we need SLCM? Explain. 3+2+5=10
2. Describe the layered technology and process framework in software engineering. 5+5=10
3. List the five desirable characteristics of a good Software Requirements Specification (SRS) documents. Why SRS document also known as the black-box specification? Who are the different categories of users of the SRS document? 5+2+3=10
4. What are the different steps considered for DFD modeling? Draw the context diagram for a rail reservation system and analysis it to its immediate higher level. 2+8=10
5. What is module coupling? Discuss about its various types. What is the desired coupling strength in structured design phase of a software? Justify. 1+6+1+2=10
6. Define COCOMO Model. Suppose that a project was estimated to be 400 KLOC. Calculate the effort and time for each of the 3 modes of development in the basic model. 4+2+2+2=10

Software Product Type	a	b	c	d
Organic	2.4	1.05	2.5	0.38
Semi-detached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

7. Discuss the following in brief: 4×2.5=10
 - a) V&V Model
 - b) Software maintenance
 - c) Software quality management
 - d) Regression testing
8. Differentiate between: 5+5=10
 - a) Top-down and bottom-up design approaches
 - b) Class and object

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