

Roll No.

Question Booklet Number

O. M. R. Serial No.

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Question Booklet Number

B. C. A. (Fourth Semester) EXAMINATION, 2022-23

SOFTWARE ENGINEERING

Paper Code						
B	C	A	4	0	3	N

Questions Booklet Series
A

Time : 1:30 Hours]

[Maximum Marks : 75

Instructions to the Examinee :

परीक्षार्थियों के लिए निर्देश :

- Do not open the booklet unless you are asked to do so.
 - The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. All questions carry equal marks.
 - Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.
- प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
 - प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। सभी प्रश्नों के अंक समान हैं।
 - प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गए हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, तो उसे तुरन्त बदल लें।

(Remaining instructions on the last page)

(शेष निर्देश अन्तिम पृष्ठ पर)

(Only for Rough Work)

1. The process of developing a software product using software engineering principles and methods is referred to as
 - (A) Software Engineering
 - (B) Software Evolution
 - (C) System Models
 - (D) Software Models

2. Where is there a need of Software Engineering ?
 - (A) For Large Software
 - (B) To Reduce Cost
 - (C) Software Quality Management
 - (D) All of the above

3. Efficiency in a software product does not include
 - (A) licensing
 - (B) processing time
 - (C) responsiveness
 - (D) memory utilization

4. RAD stands for :
 - (A) Rapid Application Development
 - (B) Required Application Development
 - (C) Rapid Application Developers
 - (D) Rapid Application Disposition

5. Which of the following is the first step in SDLC framework ?
 - (A) Feasibility Study
 - (B) Requirement Gathering
 - (C) Communication
 - (D) System Analysis

6. Build and Fix Model is suitable for programming exercises of LOC (Line of Code).
 - (A) 100-200
 - (B) 300-400
 - (C) 600-700
 - (D) Above 800+

7. In the maintenance phase the product must be tested against previous test cases. This is known as testing.
 - (A) Unit
 - (B) Regression
 - (C) Acceptance
 - (D) Integration

8. Which one of the following is a functional requirement ?
 - (A) Maintainability
 - (B) Portability
 - (C) Business needs
 - (D) Reliability

9. The goal of requirement engineering is to develop and maintain sophisticated and descriptive document.
- (A) Feasibility Study
 - (B) Requirement Gathering
 - (C) Software Requirement Validation
 - (D) System Requirements Specification
10. Which of the following is correct software metrics ?
- (A) Complexity Metrics
 - (B) Quality Metrics
 - (C) Process Metrics
 - (D) All of the above
11. Why is Requirements Elicitation a difficult task ?
- (A) Problem of scope
 - (B) Problem of understanding
 - (C) Problem of volatility
 - (D) All of the above
12. Software design yields levels of results.
- (A) 2
 - (B) 3
 - (C) 4
 - (D) 5
13. How many types of cohesion are there in software design ?
- (A) 5
 - (B) 6
 - (C) 7
 - (D) 8
14. When multiple modules share common data structure and work on different parts of it, it is called
- (A) Common coupling
 - (B) Share coupling
 - (C) Data coupling
 - (D) Stamp coupling
15. In Design phase, which is the primary area of concern ?
- (A) Architecture
 - (B) Data
 - (C) Interface
 - (D) All of the above
16. Which of the following is the worst type of module coupling ?
- (A) Control Coupling
 - (B) Stamp Coupling
 - (C) External Coupling
 - (D) Content Coupling
17. Which type of DFD concentrates on the system process, and flow of data in the system ?
- (A) Physical DFD
 - (B) Logical DFD
 - (C) Flowchart DFD
 - (D) System DFD

18. Which of the following is not a component in DFD ?
- (A) Entities
 - (B) Attributes
 - (C) Process
 - (D) Data Flow
19. A directed arc or line in DFD represents :
- (A) Data Store
 - (B) Data Process
 - (C) Data Flow
 - (D) All of the above
20. Which of the following is true about Software Verification ?
- (A) Verification ensures the product being developed is according to design specifications.
 - (B) Verifications concentrates on the design and system specifications.
 - (C) Both (A) and (B)
 - (D) None of the above
21. Which of the following is also known as “Behavioral” testing ?
- (A) Black-box testing
 - (B) White-box testing
 - (C) Both (A) and (B)
 - (D) None of the above
22. In which type of testing : software is compiled as product and then it is tested as a whole ?
- (A) Integration Testing
 - (B) Acceptance Testing
 - (C) Regression Testing
 - (D) None of the above
23. Exhaustive testing is :
- (A) always possible
 - (B) practically possible
 - (C) impractical but possible
 - (D) impractical and impossible
24. Test cases should uncover errors like :
- (A) Nonexistent loop termination
 - (B) Comparison of different data types
 - (C) Incorrect logical operators or precedence
 - (D) All of the above
25. Test Automation the testing time.
- (A) increases
 - (B) reduces
 - (C) does not depend
 - (D) None of the above
26. Validation is a process is done by :
- (A) developers
 - (B) testers
 - (C) client
 - (D) None of the above

27. Validation occurs after verification :
- (A) TRUE
 - (B) FALSE
 - (C) Can be true or false
 - (D) Cannot say
28. What is Cyclomatic complexity ?
- (A) Black box testing
 - (B) Green box testing
 - (C) Yellow box testing
 - (D) White box testing
29. What are the various Testing Levels ?
- (A) Unit Testing
 - (B) System Testing
 - (C) Integration Testing
 - (D) All of the above
30. CASE stands for :
- (A) Computer Aid Software Engineering
 - (B) Computer Application Software Engineering
 - (C) Computer Aided Software Engineering
 - (D) Computer Analysis Software Engineering
31. Which of the following tools is helpful in all the stages of SDLC ?
- (A) Central Repository
 - (B) Lower Case Tools
 - (C) Integrated Case Tools
 - (D) Upper Case Tools
32. In which of the following methodologies CASE tool mainly used ?
- (A) RAD
 - (B) OO Approach
 - (C) JAD
 - (D) All of the above
33. Which of the following is not a drawback of CASE tool ?
- (A) Perform testing easily
 - (B) Technical limitation
 - (C) Very difficult for technology transfer
 - (D) Difficult to select a case tool.
34. What kind of support is provided by the Code Generation CASE tool ?
- (A) Cross referencing queries and requirements tracing
 - (B) Transformation of design records into application software
 - (C) Compiling, interpreting or applying interactive debugging code
 - (D) All of the above
35. Which testing comes under manual testing ?
- (A) unit testing
 - (B) integration testing
 - (C) system testing
 - (D) All of the above

36. Automation Testing is used to re-run the test scenarios that were performed manually, quickly, and repeatedly.
- (A) TRUE
 - (B) FALSE
 - (C) Can be true or false
 - (D) Cannot say
37. Which technique is applied for usability testing ?
- (A) White box
 - (B) Black box
 - (C) Grey box
 - (D) Green box
38. Alpha Testing is useful way of compatibility testing.
- (A) TRUE
 - (B) FALSE
 - (C) Can be true or false
 - (D) Cannot say
39. Which type of testing is performed by developers before the setup is handed over to the testing team to formally execute the test cases ?
- (A) Integration Testing
 - (B) System Testing
 - (C) Unit Testing
 - (D) Regression Testing
40. Integration testing can be done in ways.
- (A) 4
 - (B) 3
 - (C) 2
 - (D) 1
41. Beta testing is also known as :
- (A) post-release testing
 - (B) on-release testing
 - (C) off-release testing
 - (D) pre-release testing
42. UI testing involves testing the Graphical User Interface of the Software.
- (A) TRUE
 - (B) FALSE
 - (C) Can be true or false
 - (D) Cannot say
43. The process of finding and fixing bugs is termed :
- (A) Exception
 - (B) Bugs handling
 - (C) Debugging
 - (D) Error handling
44. In software testing, the bug can occur for the :
- (A) Wrong coding
 - (B) Missing coding
 - (C) Extra coding
 - (D) All of the above
45. Which of the following is a functional requirement ?
- (A) Portability
 - (B) Robustness
 - (C) Maintainability
 - (D) None of the above

46. Purpose of process is to deliver software :
- (A) In time
 - (B) With acceptable quality
 - (C) That is cost efficient
 - (D) Both in time and with acceptable quality
47. What are the attributes of good software ?
- (A) Software maintainability
 - (B) Software maintainability and functionality
 - (C) Software functionality
 - (D) Software development
48. In the maintenance phase the product must be tested against previous test cases. This is known as testing.
- (A) Unit
 - (B) Regression
 - (C) Integration
 - (D) Module
49. What is the simplest model of software development paradigm ?
- (A) V-model
 - (B) Big Bang model
 - (C) Spiral model
 - (D) Waterfall model
50. Which of the following is/are considered stakeholder in the software process ?
- (A) Customers
 - (B) Project managers
 - (C) End-users
 - (D) All of the above
51. What is the most common measure for correctness ?
- (A) Errors per KLOC
 - (B) Defects per KLOC
 - (C) \$ per KLOC
 - (D) Pages of documentation per KLOC
52. What is the major drawback of the Spiral Model ?
- (A) Higher amount of risk analysis
 - (B) Doesn't work well for smaller projects
 - (C) Additional functionalities are added later on
 - (D) Strong approval and documentation control
53. Which model is not suitable for large software projects but good one for learning and experimenting ?
- (A) Big Bang model
 - (B) Iterative model
 - (C) Spiral model
 - (D) Waterfall model

54. Identify the disadvantage of Spiral Model :
- (A) Doesn't work well for smaller projects
 - (B) High amount of risk analysis
 - (C) Strong approval and documentation control
 - (D) Additional Functionality can be added at a later date
55. A company is developing an advance version of their current software available in the market, what model approach would they prefer ?
- (A) RAD
 - (B) Iterative Enhancement
 - (C) Both RAD and Iterative Enhancement
 - (D) Spiral
56. Spiral Model has high reliability requirements.
- (A) True
 - (B) False
 - (C) All of the above
 - (D) None of the above
57. If you were a lead developer of a software company and you are asked to submit a project/product within a stipulated timeframe with no cost barriers, which model would you select ?
- (A) Waterfall
 - (B) Spiral
 - (C) RAD
 - (D) Incremental
58. Which two models doesn't allow defining requirements early in the cycle ?
- (A) Waterfall and RAD
 - (B) Prototyping and Spiral
 - (C) Prototyping and RAD
 - (D) Waterfall and Spiral
59. Maintenance is the final phase in waterfall model.
- (A) True
 - (B) False
 - (C) All of the above
 - (D) None of the above
60. Methodology in which project management processes were step-by step ?
- (A) Incremental
 - (B) Waterfall
 - (C) Spiral
 - (D) Prototyping
61. ER diagram is a of the database system which provides high level conceptual data model and supports the user's perception of the data.
- (A) Graphical representation
 - (B) Hierarchical representation
 - (C) Both of these
 - (D) None above these

62. is set of entities of the same type that share the same properties attributes.
- (A) Entity
 (B) Attribute
 (C) Both (A) and (B)
 (D) None of the above
63. attributes cannot be divided into subparts.
- (A) Simple
 (B) Composite
 (C) Single valued
 (D) Multivalued
64. entity does not have a value for an attribute.
- (A) Null
 (B) Composite
 (C) Single valued
 (D) Multivalued
65. represent attributes.
- (A) Ellipses
 (B) Rectangles
 (C) Diamonds
 (D) Lines
66. represent multi-valued attribute.
- (A) Double ellipse
 (B) Dashed ellipse
 (C) Diamonds
 (D) Lines
67. represent weak entity set.
- (A) Double ellipse
 (B) Dashed ellipse
 (C) Double rectangle
 (D) Lines
68. DFD shows how things happen or the physical component is called
- (A) Logical DFD
 (B) Physical DFD
 (C) Data dictionary
 (D) None of the above
69. is a sub-discipline of computer Science that attempts to apply engineering principles to the creation, operation, modification, and maintenance of the software components of various systems.
- (A) Computer Engineering
 (B) Hardware Engineering
 (C) Software Engineering
 (D) Component Engineering
70. Software maintenance refers to the support phase of software development which includes ?
- (A) Correction
 (B) Adaption
 (C) Enhancement
 (D) All the above

71. State whether True or False for Rapid Application Development (RAD).

- (i) RAD is not appropriate when technical risks are high.
- (ii) For large but scalable projects, RAD requires sufficient human resources to create the right number of RAD teams.

Codes :

- (A) True, False
- (B) False, True
- (C) True, True
- (D) False, False

72. is a function of the number of failures experienced by a particular user of that software.

- (A) Software Usability
- (B) Software reliability
- (C) Software performance
- (D) None of the above

73. The model suggests a systematic sequential approach to software development that begins at the system level and progresses through analysis, design, coding, testing and support.

- (A) linear sequential development
- (B) rapid application development
- (C) incremental development
- (D) iterative enhancement

74. is actually a multi-step process that focuses on four distinct attributes of a program, data structure, software architecture, interface representations and procedural detail.

- (A) Software analysis
- (B) Software design
- (C) Coding
- (D) Testing

75. is a document driven process that requires formal documents at the end of each phase.

- (A) Linear Sequential Development
- (B) Rapid Application Development
- (C) Incremental Development
- (D) Iterative Enhancement

76. strategy assumes that residual faults remain in the system and can continue in operation after some system failures have occurred.

- (A) Fault avoidance
- (B) Fault tolerance
- (C) Fault detection
- (D) None of the above

77. is an approach to program development whereby programmers assume that there may be undetected faults or inconsistencies in their programs.

- (A) Defensive programming
- (B) Effective programming
- (C) Strong programming
- (D) Known programming

78. The main design activities in the software design process are :

- (i) System specification
- (ii) Interface design
- (iii) Component design
- (iv) Algorithm design

Codes :

- (A) ii, iii and iv only
- (B) i, ii and iii only
- (C) i, iii and iv only
- (D) All i, ii, iii and iv

79. The different types of software maintenance systems are :

- (A) Corrective maintenance
- (B) Adaptive maintenance
- (C) Perspective maintenance
- (D) All the above

80. The..... model counters the third limitation of the waterfall model and tries to combine a benefit of both prototyping and waterfall model.

- (A) Linear Sequential Development
- (B) Rapid Application Development
- (C) Incremental Development
- (D) Iterative Enhancement

81. State whether the following statements about incremental development model used in software development are True or False.

- (i) The incremental model combines elements of the linear sequential model with the iterative of prototyping.
- (ii) When an incremental model is used, the first increment is core product.

Codes :

- (A) True, True
- (B) False, True
- (C) True, False
- (D) False, False

82. model couples the iterative nature of the prototyping with the controlled and systematic aspects of the linear sequential model.

- (A) Waterfall
- (B) Rapid Application Development (RAD)
- (C) Spiral
- (D) Incremental Development

83. model can be represented schematically as a series of major technical activities, tasks, and their associated states.
- (A) Waterfall
 - (B) Rapid Application Development (RAD)
 - (C) Spiral
 - (D) Concurrent Process
84. may be used to show the principal activities and deliverables involved in carrying out some process.
- (A) Data-processing model
 - (B) Composition model
 - (C) Classification model
 - (D) Process model
85. may be used to show how entities have common characteristics.
- (A) Entity-relation diagram
 - (B) Data flow diagram
 - (C) Objects class diagram
 - (D) State transaction diagram
86. are used to show how data flows through a sequence of processing steps.
- (A) Data flow models
 - (B) System models
 - (C) Semantic data models
 - (D) Objects models
87. always identify the entities in a database their attributes and explicit relationship between them.
- (A) Data flow models
 - (B) System models
 - (C) Semantic data models
 - (D) Objects models
88. Which of the following is/are the activities used in the design process for large software systems ?
- (i) Architectural designs
 - (ii) Abstract specification
 - (iii) Code design
 - (iv) Interface design
- Codes :**
- (A) i, ii and iii only
 - (B) ii, iii and iv only
 - (C) i, ii and iv only
 - (D) All i, ii, iii and iv
89. A/An in structured methods is used to describe the logical data, structured being used.
- (A) data-flow model
 - (B) structured model
 - (C) classification model
 - (D) entity-relation model

90. While designing large software system, provides the constraints under which it must operate is produced.
- (A) abstract specification
 - (B) architectural design
 - (C) interface design
 - (D) algorithm design
91. are effective in integrating sub-systems distributed across different computers on a network.
- (A) Broadcast models
 - (B) Interrupt driven models
 - (C) Event-based models
 - (D) Centralized models
92. The advantages of the are objects are loosely coupled, the implementation of objects can be modified without affecting other objects.
- (A) architectural model
 - (B) object-oriented model
 - (C) function oriented model
 - (D) domain specific model
93. The was a one-directional, sequential model that was enhanced by the waterfall model through the introduction of bi-directional relations between the successive model stages.
- (A) nine-phase model
 - (B) waterfall model
 - (C) incremental and iterative model
 - (D) evolutionary development model
94. The models might be compared to depth-first and breadth-first approaches.
- (A) nine-phase model
 - (B) waterfall model
 - (C) incremental and iterative model
 - (D) evolutionary development model
95. In a, the set of functions is initially implemented in a broad but shallow manner where many functions are included but only tentatively realized.
- (i) depth-first
 - (ii) breadth-first
 - (iii) incremental
 - (iv) iterative
- Codes :**
- (A) i and iii only
 - (B) ii and iii only
 - (C) i and iv only
 - (D) ii and iv only

96. The fixes requirements, costs, and schedule at the earliest point in order to be able to meet contractual restrictions.

- (A) Waterfall approach
- (B) Prototyping approach
- (C) Spiral approach
- (D) Incremental approach

97. Which of the following is/are the advantages of incremental development models for software development.

- (i) Improved development team morale early solution of implementation problems.
- (ii) Improved maintenance
- (iii) Improved control of over-engineering or gold-plating measurement of productivity estimation feedback smoother staffing requirement.

Codes :

- (A) i and ii only
- (B) ii and iii only
- (C) i and iii only
- (D) All i, ii and iii

98. The illustrates how process models can be combined with one another to good effects, such as by integrating prototyping in order to reduce risk.

- (A) Waterfall model
- (B) Spiral model
- (C) Prototyping model
- (D) Evolutionary development model

99. The usually involves building a small version of the intended system prior to building a small version of the intended system prior to building the proposed completed system.

- (A) Waterfall approach
- (B) Prototyping approach
- (C) Spiral approach
- (D) Incremental approach

100. The allows one to incorporate other process models in an inclusive framework driven by project requirements and the dual objective of maximizing user satisfaction while minimizing development uncertainty.

- (A) Waterfall model
- (B) Spiral model
- (C) Prototyping model
- (D) Evolutionary development model

4. Four alternative answers are mentioned for each question as—A, B, C & D in the booklet. The candidate has to choose the correct answer and mark the same in the OMR Answer-Sheet as per the direction :

Example :

Question :

Q. 1 (A) ● (C) (D)

Q. 2 (A) (B) ● (D)

Q. 3 (A) ● (C) (D)

Illegible answers with cutting and over-writing or half filled circle will be cancelled.

5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
6. All answers are to be given on OMR Answer sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
8. After the completion of the examination candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
9. There will be no negative marking.
10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
11. To bring and use of log-book, calculator, pager and cellular phone in examination hall is prohibited.
12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

Impt. : On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question Booklet, then after showing it to the invigilator, get another question Booklet of the same series.

4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर—A, B, C एवं D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छँटना है। उत्तर को OMR आन्सर-शीट में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

उदाहरण :

प्रश्न :

प्रश्न 1 (A) ● (C) (D)

प्रश्न 2 (A) (B) ● (D)

प्रश्न 3 (A) ● (C) (D)

अपठनीय उत्तर या ऐसे उत्तर जिन्हें काटा या बदला गया है, या गोले में आधा भरकर दिया गया, उन्हें निरस्त कर दिया जाएगा।

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
7. ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।
8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
9. निगेटिव मार्किंग नहीं है।
10. कोई भी रफ कार्य, प्रश्न-पुस्तिका के अन्त में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा-कक्ष में लॉग-बुक, कैलकुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

महत्वपूर्ण : प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्न-पुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरीज की दूसरी प्रश्न-पुस्तिका प्राप्त कर लें।