

Roll. No.

O.M.R. Serial No.

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Question Booklet Number

400003

BCA (SEM.-IV) (NON-NEP) EXAMINATION, 2024

COMPUTER APPLICATION

(Software Engineering)

[BCA-403 (N)]

Paper Code

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**Question Booklet
Series**

C

Time : 1 : 30 Hours

Max. Marks : 75

Instructions to the Examinee :

1. Do not open the booklet unless you are asked to do so.
2. 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.
3. 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.
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 :

(Remaining instructions on last page)

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. 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।
3. 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, उसे तुरन्त बदल लें।
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 छानटना है। उत्तर को OMR उत्तर-पत्रक में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

(शेष निर्देश अन्तिम पृष्ठ पर)

SE

1. What are the various Testing Levels?
 - (A) Unit Testing
 - (B) System Testing
 - (C) Integration Testing
 - (D) All of the above
2. CASE stands for.
 - (A) Computer Aid Software Engineering
 - (B) Computer Application Software Engineering
 - (C) Computer Aided Software Engineering
 - (D) Computer Analysis Software Engineering
3. Which of the following tool is helpful in all the stages of SDLC?
 - (A) Central Repository
 - (B) Lower Case Tools
 - (C) Integrated Case Tools
 - (D) Upper Case Tools
4. In which of the following methodologies CASE tool mainly used?
 - (A) RAD
 - (B) OO Approach
 - (C) JAD
 - (D) All of the above
5. 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.
6. 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
7. Which testing comes under manual testing?
 - (A) unit testing
 - (B) integration testing
 - (C) system testing
 - (D) All of the above
8. 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) Can not say

9. _____ 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
10. 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
11. _____ is actually a multi-step process that focuses on four distinct attributes of program, data structure, software architecture, interface representations and procedural detail.
- (A) Software analysis
 - (B) Software design
 - (C) Coding
 - (D) Testing
12. _____ is a document driven process that requires formal documents at the end each phase.
- (A) Linear Sequential Development
 - (B) Rapid Application Development
 - (C) Incremental Development
 - (D) Iterative Enhancement
13. _____ 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
14. _____ 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
15. The main design activities in the software design process are
- (i) System specification
 - (ii) Interface design
 - (iii) Component design
 - (iv) Algorithm design
- (A) (ii), (iii) and (iv) only
 - (B) (i), (ii) and (iii) only
 - (C) (i), (iii) and (iv) only
 - (D) All of the above
16. The different types of software maintenance systems are :
- (A) Corrective maintenance
 - (B) Adaptive maintenance
 - (C) Perspective maintenance
 - (D) All of the above

17. 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
- (A) (i), (ii) and (iii) only
 (B) (ii), (iii) and (iv) only
 (C) (i), (ii) and (iv) only
 (D) All of the above
18. 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
19. 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
20. ----- 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
21. 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
22. 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
23. 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

24. 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
25. Where there is a need of Software Engineering?
 (A) For Large Software
 (B) To reduce Cost
 (C) Software Quality Management
 (D) All of the above
26. Efficiency in a software product does not include _____.
 (A) licensing
 (B) processing time
 (C) responsiveness
 (D) memory utilization
27. RAD stands for _____.
 (A) Rapid Application Development
 (B) Required Application Development
 (C) Rapid Application Developers
 (D) Rapid Application Disposition
28. Which of the following is the first step in SDLC framework?
 (A) Feasibility Study
 (B) Requirement Gathering
 (C) Communication
 (D) System Analysis
29. 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+
30. 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
31. Which one of the following is a functional requirement?
 (A) Maintainability
 (B) Portability
 (C) Business needs
 (D) Reliability
32. 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

33. 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 & Iterative Enhancement
 (D) Spiral
34. Spiral Model has high reliability requirements.
 (A) True
 (B) False
 (C) all
 (D) none
35. 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
36. 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
37. Maintenance is the final phase in waterfall model.
 (A) True
 (B) False
 (C) all of the above
 (D) none of the above
38. Methodology in which project management processes were step-by-step.
 (A) Incremental
 (B) Waterfall
 (C) Spiral
 (D) Prototyping
39. 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 of the above these
40. _____ 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

41. Which of the following is correct software metrics?
- (A) Complexity Metrics
 - (B) Quality Metrics
 - (C) Process Metrics
 - (D) All of the above
42. Why is Requirements Elicitation a difficult task ?
- (A) Problem of scope
 - (B) Problem of understanding
 - (C) Problem of volatility
 - (D) All of the above
43. Software design yields _____ levels of results.
- (A) 2
 - (B) 3
 - (C) 4
 - (D) 5
44. How many types of cohesion are there in software design?
- (A) 5
 - (B) 6
 - (C) 7
 - (D) 8
45. When multiple modules share common data structure and work on different part of it, it is called _____.
- (A) Common coupling
 - (B) Share coupling
 - (C) Data coupling
 - (D) Stamp coupling
46. In Design phase, which is the primary area of concern?
- (A) Architecture
 - (B) Data
 - (C) Interface
 - (D) All of the above
47. Which of the following is the worst type of module coupling?
- (A) Control Coupling
 - (B) Stamp Coupling
 - (C) External Coupling
 - (D) Content Coupling
48. 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
49. Which of the following is not a component in DFD?
- (A) Entities
 - (B) Attributes
 - (C) Process
 - (D) Data Flow
50. A directed arc or line in DFD represents :
- (A) Data Store
 - (B) Data Process
 - (C) Data Flow
 - (D) All of the above

51. _____ attributes cannot be divided into subparts

- (A) Simple
- (B) Composite
- (C) Single valued
- (D) Multivalued

52. _____ entity does not have a value for an attribute.

- (A) Null
- (B) Composite
- (C) Single valued
- (D) multivalued

53. _____ represent attributes

- (A) Ellipses
- (B) Rectangles
- (C) Diamonds
- (D) Lines

54. _____ represent multi-valued attribute.

- (A) Double ellipse
- (B) Dashed ellipse
- (C) Diamonds
- (D) Lines

55. _____ represent weak entity set.

- (A) Double ellipse
- (B) Dashed ellipse
- (C) Double rectangle
- (D) Lines

56. DFD shows how things happen or the physical component is called _____

- (A) Logical DFD

(B) Physical DFD

(C) Data dictionary

(D) None of these

57. _____ 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

58. Software maintenance refers to the support phase of software development which includes.

- (A) Correction
- (B) Adaption
- (C) Enhancement
- (D) All of the above

59. 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.

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

60. What are the attributes of good software?
- (A) Software maintainability
 - (B) Software maintainability & functionality
 - (C) Software functionality
 - (D) Software development
61. 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
62. What is the simplest model of software development paradigm?
- (A) V-model
 - (B) Big bang model
 - (C) Spiral model
 - (D) Waterfall model
63. 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
64. 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
65. 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
66. 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
67. 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

68. 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

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

69. 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

70. 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.

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

71. 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

72. 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

73. 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

74. Which technique is applied for usability testing?
- (A) White box
 - (B) Black box
 - (C) Grey box
 - (D) Green box
75. Alpha Testing is useful way of compatibility testing.
- (A) True
 - (B) False
 - (C) Can be true or false
 - (D) Can not say
76. 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
77. Integration testing can be done in _____ ways?
- (A) 4
 - (B) 3
 - (C) 2
 - (D) 1
78. Beta testing is also known as :
- (A) post-release testing
 - (B) on-release testing
 - (C) off-release testing
 - (D) pre-release testing
79. UI testing involves testing the Graphical User Interface of the Software.
- (A) True
 - (B) False
 - (C) Can be true or false
 - (D) Can not say
80. The process of finding and fixing bugs is termed.
- (A) Exception
 - (B) Bugs handling
 - (C) Debugging
 - (D) Error handling
81. In software testing, the bug can occur for the?
- (A) Wrong coding
 - (B) Missing coding
 - (C) Extra coding
 - (D) All of the above
82. Which of the following is a functional requirement ?
- (A) Portability
 - (B) Robustness
 - (C) Maintainability
 - (D) None of the above
83. Purpose of process is to deliver software :
- (A) In time
 - (B) With acceptable quality
 - (C) That is cost efficient
 - (D) Both in time & with acceptable quality

84. 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
85. 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.
- (A) True, True
(B) False, True
(C) True, False
(D) False, False
86. ----- 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
87. ----- 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
88. ----- 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
89. ----- 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
90. ----- 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
91. ----- 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

92. 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
93. 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
94. 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
95. Exhaustive testing is:
- (A) ~~always possible~~
 - (B) practically possible
 - (C) impractical but possible
 - (D) impractical and impossible
96. 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
97. Test Automation _____ the testing time.
- (A) increases
 - (B) reduces
 - (C) does not depend
 - (D) None of the above
98. Validation is a process is done by :
- (A) developers
 - (B) testers
 - (C) client
 - (D) None of the above
99. Validation occurs after verification :
- (A) True
 - (B) False
 - (C) Can be true or false
 - (D) Can not say
100. What is Cyclomatic complexity?
- (A) Black box testing
 - (B) Green box testing
 - (C) Yellow box testing
 - (D) White box testing

ROUGH WORK

i

Example :

Question :

Q.1 (A) ● (C) (D)

Q.2 (A) (B) ● (D)

Q.3 (A) ● (C) (D)

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 & 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.

उदाहरण :

प्रश्न :

प्रश्न 1 (A) ● (C) (D)

प्रश्न 2 (A) (B) ● (D)

प्रश्न 3 (A) ● (C) (D)

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ०एम०आर० 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. ओ०एम०आर० 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 में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा-कक्ष में लॉग-बुक, कैल्कुलेटर, 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 प्रश्नपुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरीज की दूसरी प्रश्नपुस्तिका प्राप्त कर लें।