Subject: **Software Engineering**
Paper name: **Software Engineering**
Paper No: **BCA404**
Semester: **Fourth semester**

A. Multiple choice questions [75 (15 from each unit)]

1. Software consists of
   a) Set of instructions + operating system
   b) Programs + documentation + operating procedures
   c) Programs+ hardware manuals
   d) Set of programs

2. UML stands for
   a) Uniform modeling language
   b) Unified modeling language
   c) Unit modeling language
   d) Universal modeling language

3. CASE tool is
   a) Computer Aided Software Engineering
   b) Component Aided Software Engineering
   c) Constructive Aided Software Engineering
   d) Computer Analysis Software Engineering

4. Program is
   a) Subset of software
   b) Superset of software
   c) Software
   d) None of the above

5. During software development, which factor is most crucial?
   a) People
   b) Product
   c) Process
   d) Project

6. Milestone are used to
   a) Know the cost of the project
   b) Know the status of the project
   c) Know user expectations
   d) None of the above

7. Which is not a product metric?
   a) Size

b) Reliability
c) Productivity
d) Functionality

8. Spiral model was developed by
   a) Bev littlewood
   b) Barry Boehm
   c) Roger Pressman
   d) Victor Basili

9. SRS stands for
   a) Software Requirement Specification
   b) Software Requirement Solution
   c) System Requirement Specification
   d) None of the above

10. RAD model was proposed by
    a) Lucent Technologies
    b) Motorola
    c) IBM
    d) Microsoft

11. Build and fix model has
    a) 3 phases
    b) 1 phase
    c) 2 phases
    d) 4 phases

12. Which model is most popular for student's small projects?
    a) Waterfall model
    b) Spiral model
    c) Quick and fix model
    d) Prototyping model

13. If user participation is available, which model is to be chosen?
    a) Waterfall model
    b) Iterative enhancement model
    c) Spiral model
    d) RAD model

14. Which one is the most important feature of spiral model?
    a) Quality management
    b) Risk management
    c) Performance management

d) Efficiency management

15. SDLC stands for
   a) Software Design life cycle
   b) Software Development Life Cycle
   c) System Development Life Cycle
   d) System Design Life Cycle

16. FAST stands for
   a) Functional Application Specification Technique
   b) Fast Application Specification Technique
   c) Facilitated Application Specification Technique
   d) None of the mentioned

17. Which one of the following is not a step of requirement engineering?
   a) elicitation
   b) design
   c) analysis
   d) documentation

18. QFD stands for
   a) quality function design
   b) quality function development
   c) quality function deployment
   d) none of the mentioned

19. The user system requirements are the parts of which document ?
   a) SDD
   b) SRS
   c) DDD
   d) SRD

20. Which one of the following is a functional requirement ?
   a) Maintainability
   b) Portability
   c) Robustness
   d) None of the mentioned

21. Requirement elicitation means
   a) Gathering of information
   b) Capturing of requirement
   c) Understanding of requirement

     d) All of the above

22. SRS document is for
     a) What of the system
     b) How to design the system
     c) Costing and scheduling of the system
     d) System's requirement

23. What are the types of requirement in Quality Function Deployment(QFD) ?
     a) Known, Unknown, Undreamed
     b) User, Developer
     c) Functional, Non-Functional
     d) Normal, Expected, Exciting

24. Which of the following is not a diagram studied in Requirement Analysis ?
     a) Use Cases
     b) Entity Relationship Diagram
     c) State Transition Diagram
     d) Activity Diagram

25. How many steps are there in Requirement Analysis ?
     a) Three
     b) Four
     c) Five
     d) Six

26. _____ and _____ are the two issues of Requirement Analysis.
     a) Performance, Design
     b) Stakeholder, Developer
     c) Functional, Non-Functional
     d) None of the mentioned

27. Which of the following statements about SRS is/are true ?
     i. SRS is written by customer
     ii. SRS is written by a developer
     iii. SRS serves as a contract between customer and developer
     a) Only i is true
     b) Both ii and iii are true
     c) All are true
     d) None of the mentioned

28. ERD stands for
   a) Entity relationship diagram
   b) Exit related diagram
   c) Entity relationship design
   d) Exit related design

29. Which one is not a type of requirement
   a) Known requirement
   b) Unknown requirement
   c) Undreamt requirement
   d) Complex requirement

30. DFD stands for
   a) Data flow design
   b) Descriptive functional design
   c) Data flow diagram
   d) None of the above

31. Which one is not a strategy for design?
   a) Bottom up design
   b) Top down design
   c) Embedded design
   d) Hybrid design

32. The worst type of coupling is
   a) Content coupling
   b) Common coupling
   c) External coupling
   d) Data coupling

33. The most desirable form of coupling is
   a) Content coupling
   b) Common coupling
   c) External coupling
   d) Control coupling

34. A good software design must have the following attribute.
   a) High module coupling, high module cohesion.
   b) High module coupling, low module cohesion.
   c) Low module coupling, high module cohesion.
   d) Low module coupling, low module cohesion.

35. Software is divided into separately named and addressable components, and it is called as:

a) Software.
b) Cohesion.
c) Module.
d) None of the above.

36. Independent modules are easier to maintain and test because of.
    a) Code modification is limited,
    b) Error propagation is reduced
    c) Reusable modules are possible.
    d) All of the above.

37. The worst type of cohesion is
    a) Temporal cohesion
    b) Coincidental cohesion
    c) Logical cohesion
    d) Sequential cohesion

38. In what type of coupling, the complete data structure is passed from one module to another?
    a) Control Coupling
    b) Stamp Coupling
    c) External Coupling
    d) Content Coupling

39. Java packages and Fortran subroutine are examples of
    a) Functions
    b) Modules
    c) Classes
    d) Sub procedures

40. The elimination of the irrelevant and the amplification of the essentials is
    a) Abstraction
    b) Class
    c) Module
    d) Inheritance

41. Encapsulation is also commonly referred to as
    a) Information gathering
    b) Information hiding
    c) Analysis of Information
    d) All of the above

42. The best type of coupling is
    a) Content coupling

b) Common coupling
c) External coupling
d) Data coupling

43. What is/are the characteristics of a well-formed design class?
   a) Primitiveness.
   b) High cohesion.
   c) Low coupling.
   d) All of the above.

44. What is the Functional cohesion?
   a) Operations are part of single functional task and are placed in same procedures
   b) Operations are part of single functional task and are placed in multiple procedures
   c) Operations are part of multiple tasks
   d) None of the above.

45. A system that does not interact with external environment is called
   a) Closed system
   b) Logical system
   c) Open system
   d) None of the above

46. In size oriented metrics, metrics are developed based on the
   a) number of Functions
   b) number of user inputs
   c) number of lines of code
   d) amount of memory usage

47. Which of the following is an indirect measure of product?
   a) Quality
   b) Complexity
   c) Reliability
   d) All of the Mentioned

48. The intent of project metrics is:
   a) minimization of development schedule
   b) for strategic purposes
   c) assessing project quality on ongoing basis
   d) minimization of development schedule and assessing project quality on ongoing basis

49. Function Points in software engineering was first proposed by
    a) Booch
    b) B. Boehm
    c) Alan Albrecht
    d) Jacobson

50. Which one is not a category of software metrics?
    a) product metrics
    b) process metrics
    c) project metrics
    d) people metrics

51. After finalization of SRS, we may like to estimate
    a) Size
    b) Cost
    c) Development time
    d) All of the above

52. Size and Complexity are a part of
    a) Product Metrics
    b) Process Metrics
    c) Project Metrics
    d) All of the mentioned

53. Cost and schedule are a part of
    a) Product Metrics
    b) Process Metrics
    c) Project Metrics
    d) All of the mentioned

54. Number of errors found per person hours expended is an example of a
    a) measurement
    b) measure
    c) metric
    d) all of the mentioned

55. In Halstead theory, effort is measured in
    a) Persons-months
    b) Hours
    c) Elementary mental discrimination
    d) None of the above

56. COCOMO model is
    a) Common cost estimation model

b) Constructive cost estimation model
c) Complete cost estimation model
d) Comprehensive cost estimation model

57. Function point can be calculated by
    a) UFP * CAF
    b) UFP * FAC
    c) UFP * Cost
    d) UFP * Productivity

58. Putnam resource allocation model is based on
    a) Function points
    b) Norden/Rayleigh curve
    c) Putnam theory of software management
    d) Boehm's observations on manpower utilisation rate

59. How many stages are in COCOMO II?
    a) 2
    b) 3
    c) 4
    d) 5

60. Which one is not a risk management activity?
    a) Risk assessment
    b) Risk control
    c) Risk generation
    d) None of the above

61. Which of the following is not a phase of "bathtub curve" of hardware reliability?
    a) Useful Life
    b) Burn-in
    c) Wear-out
    d) Time

62. How many product quality factors are proposed in McCall quality model?
    a) 2
    b) 3
    c) 11
    d) 8

63. What is MTTF ?
    a) Maximum time to failure

b) Mean time to failure
c) Minimum time to failure
d) None of the mentioned

64. How is software reliability defined?
    a) time
    b) efficiency
    c) quality
    d) speed

65. NHPP stands for
    a) Non Homogeneous Poisson Product
    b) Non-Hetrogeneous Poisson Product
    c) Non-Hetrogeneous Poisson Process
    d) Non Homogeneous Poisson Process

66. The CMM model is a technique to
    a) automatically maintain the software reliability
    b) improve the software process.
    c) test the software
    d) all of the mentioned

67. Which of the following term describes testing?
    a) Finding broken code
    b) Evaluating deliverable to find errors
    c) A stage of all projects
    d) None of the mentioned

68. What is Cyclomatic complexity?
    a) Black box testing
    b) White box testing
    c) Yellow box testing
    d) Green box testing

69. Alpha testing is done at
    a) Developer's end
    b) User's end
    c) Developer's & User's end
    d) None of the mentioned

70. Acceptance testing is also known as
    a) Grey box testing
    b) White box testing
    c) Alpha Testing
    d) Beta testing
71. Behavioural testing is
    a) White box testing
    b) Black box testing
    c) Grey box testing
    d) None of the mentioned

72. Which one is not a category of maintenance?
    a) Corrective maintenance
    b) Effective maintenance
    c) Adaptive maintenance
    d) Perfective maintenance

73. Adaptive maintenance is related to
    a) Modification in software due to failures
    b) Modification in software due to demand of new functionalities
    c) Modification in software due to increase in complexity
    d) Modification in software to match changes in the ever-changing environment.

74. Iterative enhancement model is a
    a) Three stage model
    b) Two stage model
    c) Four stage model
    d) Seven stage model

75. User documentation consists of
    a) System overview
    b) Installation guide
    c) Reference guide
    d) All of the above

B. Fill up the blanks [15 (3 from each unit)]

1. To produce a good quality product, process should be _____.
2. Effort is measured in terms of _____ .
3. Unified Process is maintained by _____ .
4. The SRS document is also known as _____ specification.
5. _____ are simply repositories to store information about all data items defined in DFDs.

6. _____ is the end product of requirement elicitation and analysis.
7. When elements of module are grouped because the output of one element serves as input to another element and so on, it is called _____ .
8. _____ is an indication of the relative functional strength of a module.

9. _____ is a measure of the degree of interdependence between modules.
10. The amount of time that the software is available for use is known as_____.
11. _____ measures functionality from the users point of view, that is on the basis of what the user requests and receives in return from the system.
12. _____ process of examining a project and identifying areas of potential risk.
13. Software mistakes during coding are known as _____.
14. Effective testing will reduce _____cost.
15. _____ Maintenance includes modifying the software to match changes in the ever changing environment.

Key Answers

A. Multiple choice questions

1. b) Programs + documentation + operating procedures   2. a) Uniform modeling language
3. a) Computer Aided Software Engineering   4. a) Subset of software
5. a) People   6. b) Know the status of the project
7. c) Productivity   8. b) Barry Boehm
9. a) Software Requirement Specification   10. c) IBM
11. c) 2 phases   12. a) Waterfall model
13. d) RAD model   14. b) Risk management
15. b) Software Development Life Cycle   16. c) Facilitated Application
Specification Technique
17. b) Design   18. c) quality function deployment
19. b) SRS   20. d) None of the mentioned
21. a) Gathering of information   22. a) What of the system
23. d) Normal, Expected, Exciting   24. d) Activity Diagram
25. b) Four   26. b) Stakeholder, Developer
27. c) All are true   28. a) Entity relationship diagram
29. d) Complex requirement   30. c) Data flow diagram
31. c) Embedded design   32. a) Content coupling
33. d) Control coupling   34. c) Low module coupling, high
module cohesion.
35. c) Module   36. d) All of the above.
37. b) Coincidental cohesion   38. b) Stamp Coupling
39. b) Modules   40. a) Abstraction
41. b) Information hiding   42. d) Data Coupling
43. d) All of the above.
44. a) Operations are part of single functional task and are placed in same procedures
45. a) Closed system   46. c) number of lines of code

47. d) All of the Mentioned
48. d) minimization of development schedule and assessing project quality on ongoing basis
49. c) Alan Albrecht
50. d) people metrics
51. d) All of the above
52. a) Product Metrics
53. c) Project Metrics
54. c) metric
55. c) Elementary mental discrimination
56. b) Constructive cost estimation model
57. a) UFP * CAF
58. b) Norden/Rayleigh curve
59. b) 3
60. c) Risk generation
61. d) Time
62. b) 3
63. b) Mean time to failure
64. a) time
65. d) Non Homogeneous Poisson Process
66. b) improve the software process.
67. b) Evaluating deliverable to find errors
68. b) White box testing
69. a) Developer's end
70. d) Beta testing
71. b) Black box testing
72. b) Effective maintenance
73. d) Modification in software to match changes in the ever-changing environment.
74. a) Three stage model
75. d) All of the above

B. Fill up the blanks

1. Efficient
2. Persons Months
3. Rational Software Corporation
4. Black-box
5. Data Dictionaries
6. Requirement documentation
7. Sequential cohesion
8. Cohesion
9. Coupling
10. Reliability
11. Function point
12. Risk assessment
13. Bugs
14. Maintenance
15. Adaptive