

BCA  
SEMESTER- 3<sup>RD</sup>  
SOFTWARE ENGINEERING  
BCA-302

Duration: 3 Hrs.

Marks: 70

Part : A (Objective) = 20  
Part : B (Descriptive) = 50

[ PART-B : Descriptive ]

Duration: 2 Hrs. 40 Mins.

Marks: 50

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

1. (a) What is called a COCOMO? Define the 3 categories of COCOMO. 4+6=10  
(b) Suppose an organic software product for a business application costs Rs 50,000 and its size is 40 KLOC. Determine the effort required to develop the software the software product at nominal development time. Assuming that the inhouse engineer cost Rs 6000p/m, would it be more cost effective to buy this product or build it?
2. What do you mean by the terms cohesion and coupling? What are the different types of cohesion and coupling? Define each type. 10
3. (a) what do you understand by the term CASE tool? Schematically draw the architecture of a CASE environment and explain and explain how the different tools are integrated? 8+2=10  
(b) what are the important artifacts of software development that can be reused?
4. What do you mean by project scheduling? What are the activities that are involved in project scheduling? Specify the project scheduling tools. Briefly explain each tool. 10
5. (a) What do you mean by software design process? Explain the guidelines required for any software design process. 2+4+4=10  
(b) What is user interface? What are its different types? Explain.
6. Draw a schematic diagram to represent the waterfall model of software development. Explain each phase of the model. 10
7. (a) what do you mean by the term Integration Testing? What are the different types of integration testing? 7+3=10  
(b) Distinguish between black box and white box testing.
8. Write short notes on: (any 5) 10
  - (i) Bath tub curve
  - (ii) Prototype Model
  - (iii) Code Inspection
  - (iv) Code Walk-through
  - (v) LOC
  - (vi) Unit Testing

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[ PART-A : Objective ]

Choose the correct answer from the following :

1X20=20

1. RAD stands for:
  - a. Relative Application Development
  - b. Rapid Application Development
  - c. Rapid Application Document
  - d. None of these
2. What is a major advantage of using incremental model?
  - a. Customer can respond to each increment.
  - b. Easier to test and debug
  - c. It is used when there is a need to get a product.
  - d. Both b and c
3. Which of the following is not a step of requirement specification?
  - a. Specification
  - b. Design
  - c. Analysis
  - d. Documentation
4. Which of the following life cycle model can be chosen if the development team has less experience on similar projects?
  - a. Spiral
  - b. Waterfall
  - c. RAD
  - d. None of the above
5. Alpha and Beta Testing are forms of \_\_\_\_\_
  - a. Acceptance Testing
  - b. Integration Testing
  - c. System Testing
  - d. Unit Testing
6. The user system requirements are the parts of which document?
  - a. SSD
  - b. SRS
  - c. DDD
  - d. DFD
7. In size oriented metrics, metrics are developed based on the \_\_\_\_\_
  - a. Number of functions
  - b. Number of user inputs
  - c. Number of Lines of Codes
  - d. Amount of memory usage
8. The tools that support different stages of software development life cycle are called \_\_\_\_
  - a. CASE Tool
  - b. CAME Tool
  - c. CAQE Tool
  - d. CARE Tool
9. Which of the followings is not a White Box Technique?
  - a. Statement Testing and Coverage
  - b. Decision Testing
  - c. Condition Coverage
  - d. Boundary Value Analysis
10. When elements of module are grouped because the output of one element serves as input to another element, it is called \_\_\_\_\_.
  - a. Functional Cohesion
  - b. Communicational Cohesion
  - c. Sequential Cohesion
  - d. Procedural Cohesion
11. Which chart is a tool that depicts project as network diagram that is capable of graphically representing main events of project in both parallel and consecutive way?
  - a. PERT chart
  - b. GANTT chart
  - c. Both of these
  - d. None of the above
12. Find out which phase is not available in SDLC?
  - a. Coding
  - b. Testing
  - c. Maintenance
  - d. Abstraction
13. Which type of user interface provide input by typing a string in the keyboard?
  - a. Graphical User Interface
  - b. Command Line User Interface
  - c. Menu Interface
  - d. All of these
14. "Bath tub" curve represents which of the followings?
  - a. Failure rate for Hardware
  - b. Failure rate for Software
  - c. Failure rate for Hardware vs Software
  - d. None of the above



15. Which of the following is the correct for determining the estimation of development time using “semi-detached type of COCOMO”?
- $T_{dev} = 2.5(\text{effort})^{0.38}$  months
  - $T_{dev} = 2.5(\text{effort})^{0.35}$  months
  - $T_{dev} = 2.5(\text{effort})^{0.32}$  months
  - None of the above
16. Which of the following is the condition for functional independence?
- High cohesion and Low coupling
  - Low cohesion and High coupling
  - Both of these
  - None of the above
17. A set of inputs, execution preconditions and expected outcomes is known as a?
- Test plan
  - Test case
  - Test document
  - Test suite
18. In which test design each input is tested at both ends of its valid range and just outside its valid range?
- Boundary value testing
  - Equivalence class partitioning
  - Both of these
  - None of the above
19. Which of the following prominent items cannot be reused?
- Test Cases
  - Code
  - Design
  - All of the above
20. Which of the followings is not a type of Integration testing:
- Big bang
  - Top down
  - Alpha
  - Mixed

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Course : .....

Semester : ..... Roll No : .....

Enrollment No : ..... Course code : .....

Course Title : .....

Session : ..... 2017-18 ..... Date : .....

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**Instructions / Guidelines**

- The paper contains twenty (20) / ten (10) questions.
- Students shall tick (✓) the correct answer.
- No marks shall be given for overwrite / erasing.
- Students have to submit the Objective Part (Part-A) to the invigilator just after completion of the allotted time from the starting of examination.

Full Marks	Marks Obtained
20	

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Scrutinizer's Signature

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Examiner's Signature

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Invigilator's Signature