2014

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA-504

(Software Engineering)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(*Marks* : 15)

I. Tick (✓) the correct answer in the brackets provided : 1×10=10

1. Milestones 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 ( )

2. Software engineering approach is used to achieve

   (a) better performance of hardware ( )

   (b) error-free software ( )

   (c) reusable software ( )

   (d) quality software product ( )

3. Which of the following models is most popular for student's small project?

   (a) Waterfall model ( )

   (b) Quick and fix model ( )

   (c) Prototyping model ( )

   (d) Spiral model ( )

4. In Halstead theory, effort is measured in

   (a) parson-months ( )

   (b) hours ( )

   (c) elementary mental discriminations ( )

   (d) None of the above ( )

5. Requirements elicitation means

   (a) gathering of requirements ( )

   (b) capturing of requirements ( )

   (c) understanding of requirements ( )

   (d) All of the above ( )

6. The relationship of data elements in a module is called

   (a) coupling ( )

   (b) cohesion ( )

   (c) modularity ( )

   (d) None of the above ( )

7. Failure intensity function of logarithmic Poisson execution model is given as

   (a) $\lambda(\mu) = \lambda_0 \ln(-\theta\mu)$ ( )

   (b) $\lambda(\mu) = \lambda_0 \exp(\theta\mu)$ ( )

   (c) $\lambda(\mu) = \lambda_0 \exp(-\theta\mu)$ ( )

   (d) $\lambda(\mu) = \lambda_0 \log(-\theta\mu)$ ( )

8. Software quality is

   (a) conformance to requirements ( )

   (b) fitness for the purpose ( )

   (c) level of satisfaction ( )

   (d) All of the above ( )

9. Validation is

   (a) checking the product with respect to customer's expectations ( )

   (b) checking the product with respect to specification ( )

   (c) checking the product with respect to constraints of the project ( )

   (d) All of the above ( )

10. The process by which existing processes and methods are replaced by new techniques is

   (a) reverse engineering ( )

   (b) business process reengineering ( )

   (c) software configuration management ( )

   (d) technical feasibility ( )

II. State whether the following statements are True (*T*) or False (*F*) : 1×5=5

(a) Project risk factor is considered in prototyping model.

( )

(b) Requirement review process is carried out to improve the quality of SRS.

( )

(c) After the finalization of SRS, we may like to estimate cost, size and development time.

( )

(d) Reliability of software is dependent on number of errors removed.

( )

(e) Testing of software with actual data and in the actual environment is called beta testing.

( )

SECTION—II

(*Marks* : 10)

III. Answer the following questions : 2×5=10

1. What is software engineering?

2. What are various activities during software project planning?

3. What are crucial process states of requirement engineering?

4. Compare hardware reliability with software reliability.

5. What is the difference between the verification and validation testing?

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2014

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA–504

(Software Engineering)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

1. *(a)* What is software life cycle? Explain the spiral model of software development. What are the limitations of such a model? 2+6+2=10

Or

(b) Discuss the prototype model. What is the effect of designing a prototype on the overall cost of the software? 6

(c) How are software myths affecting software process? Explain with the help of examples. 4

2. (a) Discuss various types of COCOMO model. Explain the phase-wise distribution of effort. 10

Or

(b) Explain elaborately various strategies and steps involved in risk management.

3. (a) Describe facilitated application specification technique (FAST) and compare this with brainstorming sessions. 4

(b) Consider the problem of library management system and design the following : 6

(i) Problem statement

(ii) Use-case diagram

Or

(c) What is design? Describe the difference between conceptual design and technical deign. 4

(d) Define module coupling and explain different types of coupling with examples. 6

4. *(a)* Describe the McCall software quality model. How many product quality factors are defined and why? 6

(b) What is software reliability? How can one use software reliability measures to monitor the operational performance of software? 4

Or

(c) What is software quality? Discuss software quality attributes. 4

(d) Write a short note on logarithmic Poisson execution time model. How can we calculate $\Delta\mu$ and $\Delta\tau$? 6

5. *(a)* What is software testing? Discuss the limitations of testing. Why do we say that complete testing is impossible? 5

(b) What is the difference between functional and structural testing? 5

Or

(c) Explain the steps of software maintenance with the help of a diagram. 5

(d) What is reverse engineering? Discuss the levels of reverse engineering. 5

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