2015

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA–504 (OC)

(Software Engineering)

(Old Course)

(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. Software is

   (a) superset of program ( )

   (b) subset of program ( )

   (c) set of program ( )

   (d) All 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. If requirements are frequently changing, which of the following models is to be selected?

   (a) Waterfall model ( )

   (b) Prototyping model ( )

   (c) RAD model ( )

   (d) Iterative enhancement model ( )

4. COCOMO was developed initially by

   (a) B. W. Bohem ( )

   (b) Gregg Rothermal ( )

   (c) B. Beizer ( )

   (d) Rajeev Gupta ( )

5. Which one of the following is not a risk management activity?

   (a) Risk assessment ( )

   (b) Risk control ( )

   (c) Risk generation ( )

   (d) None of the above ( )

6. Requirements elicitation means

   (a) gathering of requirements ( )

   (b) capturing of requirements ( )

   (c) understanding of requirements ( )

   (d) All of the above ( )

7. Temporal cohesion means

   (a) cohesion between temporary variables ( )

   (b) cohesion between local variables ( )

   (c) cohesion with respect to time ( )

   (d) coincidental cohesion ( )

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

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

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

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

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

9. Verification is

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

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

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

   (d) All of the above ( )

10. The process of generating analysis and design documents is called

   (a) inverse engineering ( )

   (b) software engineering ( )

   (c) reverse engineering ( )

   (d) reengineering ( )

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

(a) Waterfall model is not suitable for complex projects.

( )

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

( )

(c) The most desirable form of cohesion is logical cohesion.

( )

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

( )

(e) Alpha testing is done by customer.

( )

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 the components of a use case diagram?

4. What is software quality?

5. What is the difference between alpha testing and beta testing?

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V/BCA/504 (OC)

2015

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA–504 (OC)

(Software Engineering)

(Old Course)

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? Compare the waterfall model with the spiral model of software development. 2+8=10

Or

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

(c) What are software myths affecting software process? 4

2. *(a)* What do you understand by software risk? Make a list of the typical software rules and write a note on risk management activities. 10

Or

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

3. *(a)* What are crucial process steps of requirement engineering? Discuss with the help of a diagram. 4

(b) Consider the problem of railway reservation system and design the following : 2×3=6

(i) Problem statement

(ii) Use case diagram

(iii) Use cases

Or

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

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

4. *(a)* What do you understand by software reliability? Distinguish between failures and faults. 4

(b) What is ISO-9126? What are the quality characteristics and attributes? 6

Or

(c) Discuss the basic model of software reliability. How can $\Delta\mu$ and $\Delta\tau$ be calculated? 8

(d) Compare hardware reliability with software reliability. 2

5. *(a)* What is the difference between functional testing and structural testing? 5

(b) What is software testing? Discuss the role of software testing during software life cycle. Why is it so difficult? 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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