

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)

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 :

$2 \times 3 = 6$

- (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

(Continued)

(3)

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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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA-504 (OC)

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(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 :

$$1 \times 10 = 10$$

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. Boehm ()
- (b) Gregg Rothermal ()
- (c) B. Beizer ()
- (d) Rajeev Gupta ()

(3)

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 ()

(5)

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

(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?

(a)

(b)

(c)

(d)

(e)

(f)

(g)

(h)

(i)

(j)

(k)

(l)

(m)

(n)

(o)

(p)

(q)

(r)

(s)

(t)

(u)

(v)

(w)

(x)

(y)

(z)

2. What are various activities during software project planning?

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(8)

3. What are the components of a use case diagram?

III. Answer the following questions (any three) :- 10

1. What is software engineering?

4. What is software quality?

(9)

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

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