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**3 (Sem-4/CBCS) CSC HC 2**

**2022**

**COMPUTER SCIENCE**

(Honours)

Paper : CSC-HC-4026

**(Software Engineering)**

Full Marks : 60

Time : Three hours

***The figures in the margin indicate  
full marks for the questions.***

1. Choose the correct answer for the following :  
**(any seven)**  $1 \times 7 = 7$
- (i) Which of the following is the first step of software development life cycle ?
- (a) Design
  - (b) Coding
  - (c) Preliminary investigation and analysis
  - (d) Testing

Contd.



- (ii) Total phases of RAD software model is
- (a) 6
  - (b) 5
  - (c) 3
  - (d) 2
- (iii) When can white-box testing be started ?
- (a) After SRS creation
  - (b) After installation
  - (c) After programming
  - (d) After designing
- (iv) Identify the incorrect type of prototyping model
- (a) vertical prototype
  - (b) horizontal prototype
  - (c) diagonal prototype
  - (d) domain prototype
- (v) Quality management in software engineering is also known as
- (a) SQA
  - (b) SQM
  - (c) SQI
  - (d) SQA and SQM

- (vi) Which one of the following is not a stage of software development life cycle ?
- (a) System analysis
  - (b) Problem identification
  - (c) System design
  - (d) Feasibility study
- (vii) Risk management is one of the most important jobs for a/an
- (a) client
  - (b) investor
  - (c) production team
  - (d) project manager
- (viii) By whom is unit testing done ?
- (a) Users
  - (b) Customers
  - (c) Developers
  - (d) None of the above



(ix) Which of the following words correctly summarized the importance of software design ?

- (a) Quality
- (b) Complexity
- (c) Efficiency
- (d) Accuracy

(x) Risk analysis of a project is done in

- (a) system analysis phase
- (b) feasibility study
- (c) implementation phase
- (d) maintenance phase

2. Define the following terms : **(any four)**  
 $2 \times 4 = 8$

- (a) Software characteristics
- (b) Cohesion
- (c) Coupling
- (d) Baseline
- (e) Software risks

(f) ISO 9000

(g) COCOMO model

(h) Data flow diagram

3. Answer the following questions : **(any three)**  
 $5 \times 3 = 15$

(a) Briefly describe various phases of software development life cycle model.

(b) What are the responsibilities of a software project manager ?

(c) What are the major software quality assurance activities ?

(d) Briefly explain the elements of a data flow diagram (DFD).

(e) Briefly explain the characteristics of a good and bad SRS.

(f) Briefly explain various kinds of risks in software development.

(g) What are the advantages and disadvantages of prototyping model ?



(h) Briefly explain the term 'control flow graph' in software testing.

4. Answer the following questions : **(any three)**  
10×3=30

(a) Explain the waterfall model in detail.

(b) Write short notes on the following :

(i) Delphi cost estimation

(ii) Project scheduling

(c) Define risk assessment. Explain in detail about risk monitoring and management plan.

(d) Define software validation. How can you validate a software designed by you ? Explain the method used to validate the software.

(e) What is ISO 9000 certificate ? Explain the required steps to get ISO 9000 certificate.

(f) Explain V-model of software development life cycle in detail.

(g) Explain the concept of risk mitigation, monitoring and management (RMMM) plan.

(h) Draw a context level and upto 2nd level DFD for online banking system.

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