Enrollment No.....

Faculty of Engineering / Science

End Sem (Even) Examination May-2022

BC3EC07 / CA3CO13 Software Engineering

Programme: BCA-MCA(Integrated) / B.Sc. (CS) / BCA Branch/Specialisation: Computer Science/ Computer Application

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. What are the three generic phases of software engineering? **1**
(a) Definition, development, support
(b) What, how, where
(c) Programming, debugging, maintenance
(d) Analysis, design, testing

ii. Which one of the following model has risk-driven approach? **1**
(a) Agile Process Model (b) Prototyping Model
(c) Spiral Model (d) Waterfall Model

iii. Agile Software Development is based on- **1**
(a) Incremental Development (b) Iterative Development
(c) Linear Development (d) Both (a) and (b)

iv. What is the first step of Requirement elicitation? **1**
(a) Identifying Stack-holders (b) List out requirements
(c) Requirement gathering (d) Negotiation

v. DFD is also known as- **1**
(a) Data Function Diagram (b) Data Function Deployment
(c) Bubble chart (d) Data Flow Design

vi. Which of the following is the best type of module coupling? **1**
(a) Control Coupling (b) Stamp Coupling
(c) Data Coupling (d) Content Coupling

vii. In Use case diagram, Human user and external system is represented by: **1**
(a) Ellipse (b) Rectangle
(c) Stick person (d) Communication relationship

viii. _____ & _____ diagrams of UML together called interaction diagram. **1**
(a) Collaboration, Sequence (b) Class, Object
(c) Activity, State Chart (d) Use case, Activity

ix. The method used in black box technique is- **1**
(a) Statement coverage (b) Equivalence partitioning
(c) Path coverage (d) Branch coverage

x. Alpha testing conducted at- **1**
(a) Developers site (b) Installation place
(c) End user site (d) Any where

Q.2 Attempt any two:
i. What is the basic difference between linear and evolutionary software process model? Explain **5**
ii. Explain the features of spiral model with the help of its process diagram? How are the risks handled in this model? **5**
iii. What is a prototype? What are the advantages of constructing a prototype? **5**

Q.3 i. Explain the desirable characteristics of a good SRS document. **4**
ii. Name the different agile process models. Explain one of them in detail. **6**
OR iii. Enlist various fact gathering techniques. Discuss one of them in detail. **6**

Q.4 i. What is structured analysis and design? **3**
ii. What is coupling? Why is coupling important in software designing? Explain different types of coupling with example. **7**
OR iii. Discuss function oriented and object-oriented design approaches. **7**

Q.5 i. Write a note on Class-Responsibility-Collaborator (CRC) Cards. **3**
ii. Explain relation, association, generalization, aggregation, composition in context of class diagrams. **7**
OR iii. What is the purpose of use case diagrams? Draw a use case diagram for a library management system. **7**

Q.6 Attempt any two:
i. What is software testing? Differentiate between verification and validation. **5**
ii. What is white box testing? What do you verify in white box testing? **5**
iii. What is a test case? Explain bug life cycle or defect life cycle. **5**

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Marking Scheme
BC3EC07 / CA3CO13 Software Engineering

Q.1	i.	What are the three generic phases of software engineering? (a) Definition, development, support		**1**
	ii.	Which one of the following model has risk-driven approach? (c) Spiral Model		**1**
	iii.	Agile Software Development is based on- (d) Both (a) and (b)		**1**
	iv.	What is the first step of Requirement elicitation? (a) Identifying Stack-holders		**1**
	v.	DFD is also known as- (c) Bubble chart		**1**
	vi.	Which of the following is the best type of module coupling? (c) Data Coupling		**1**
	vii.	In Use case diagram, Human user and external system is represented by: (c) Stick person		**1**
	viii.	_____ & _____ diagrams of UML together called interaction diagram. (a) Collaboration, Sequence		**1**
	ix.	The method used in black box technique is- (b) Equivalence partitioning		**1**
	x.	Alpha testing conducted at- (a) Developers site		**1**
Q.2		Attempt any two:		
	i.	Difference between linear and evolutionary software process model		**5**
		1 mark for each difference	(1 mark * 5)	
	ii.	Features of spiral model with its process diagram	3 marks	**5**
		Risks handled in this model	2 marks	
	iii.	Prototype	1 mark	**5**
		Advantages of constructing a prototype	4 marks	
Q.3	i.	Characteristics of a good SRS document.		**4**
		1 mark for each characteristic	(1 mark * 4)	
	ii.	Different agile process models	1 mark.	**6**
		Explanation one of them	5 marks	
OR	iii.	Various fact gathering techniques	2 marks	**6**
		Explanation one of them	4 marks	
Q.4	i.	Structured analysis	1.5 marks	**3**
		Design	1.5 marks	
	ii.	Coupling	1 mark	**7**
		Coupling important in software designing	1 mark	
		Different types of coupling with example	5 marks	
OR	iii.	Function oriented design approaches	3.5 marks	**7**
		Object-oriented design approaches	3.5 marks	
Q.5	i.	Class-Responsibility-Collaborator (CRC) Cards.		**3**
		1 mark for each point	(1 mark * 3)	
	ii.	Relation, association, generalization, aggregation, composition in context of class diagrams. As per the explanation		**7**
OR	iii.	Purpose of use case diagrams	1 mark	**7**
		Use case diagram for a library management system	4 marks	
Q.6		Attempt any two:		
	i.	Software testing	1 mark	**5**
		Difference between verification and validation	4 marks	
	ii.	White box testing	2.5 marks	**5**
		Verify in white box testing	2.5 marks	
	iii.	Test case	2 marks	**5**
		Bug life cycle or defect life cycle	3 marks	

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