

Reg. No. 

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**B.E./ B. TECH.DEGREE EXAMINATIONS, MAY 2023**

Fourth Semester

**AD18404 - OBJECT ORIENTED SOFTWARE ENGINEERING**

(Computer Science and Engineering)

(Regulation 2018A)

TIME:3 HOURS

MAX. MARKS: 100

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Identify the key activities in managing a software development and management process.	2
CO 2	Compare different process models. Concepts of requirements engineering and Modeling using UML concepts.	3
CO 3	Apply systematic procedure for conventional and object oriented software design and deployment.	3
CO 4	Compare and contrast the various testing strategies of conventional and object oriented applications.	3
CO 5	Learn the concepts of Software Maintenance and Reverse Engineering.	2

**PART- A(10x2=20Marks)**

(Answer all Questions)

	CO	RBT LEVEL
1. Demonstrate your understanding of umbrella activities of a Software process.	1	2
2. Only 70 percent of the software components scheduled for reuse will, in fact, be integrated into the application. The remaining functionality will have to be custom developed. The Risk probability is 80% (likely). Calculate Risk exposure.	1	3
3. Classify the following as functional /non-functional requirements for a banking system (a) Verifying bank balance (b) Withdrawing money from bank (c) Completion of transactions in less than one second. (d) Extending the system by providing more tellers for the customers.	2	3
4. List two advantages of using traceability tables in the requirements management phase.	2	3
5. Mention the golden rules of User Interface design.	3	1
6. What do you understand by Open-closed principle in Component level design?	3	2
7. Between "statement coverage and Branch Coverage", Examine which is a stronger criteria? Why?	4	4
8. Differentiate verification and validation. Which type of testing address verification?	4	3
9. Define Software Maintenance.	5	2
10. Write the formula by which the overall benefit of reengineering can be computed.	5	2

**PART- B (5x 14=70Marks)**

- |  | Marks | CO | RBT LEVEL |
|--|-------|----|-----------|
| 11. (a) (i) Explain about the Risk Management Paradigm.                                  | (7)   | 1  | 2         |
| (ii) For the following project, calculate SV,CV, SPI and CPI at the end of second month. | (7)   | 1  | 3         |

Month	1	2	3	4
Planned Value	₹ 11,10,000	₹ 6,00,000	₹ 25,00,000	₹ 8,00,000
Earned Value	₹ 10,00,000	₹ 7,50,000		
Actual Cost	₹ 12,50,000	₹ 5,00,000		

(OR)

- |  |     |   |   |
|--|-----|---|---|
| (b) (i) Discuss in detail about Scrum Model.                                     | (7) | 1 | 2 |
| (ii) Consider 7 functions with their estimated lines of code given below.<br>(8) | (7) | 1 | 3 |

Function	LOC
Func1	2340
Func2	5380
Func3	6800
Func4	3350
Func5	4950
Func6	2140
Func7	8400

Average Productivity based on historical data is 620 LOC/pm and Labour rate is Rs. 8000 per month. Find the total estimated project cost and effort.

- |  |      |   |   |
|--|------|---|---|
| 12. (a) (i) Assess on software requirement specification for banking system. | (10) | 2 | 3 |
| (ii) Describe about the requirement change management.                       | (4)  | 2 | 2 |

(OR)

- |  |      |   |   |
|--|------|---|---|
| (b) (i) What is the purpose of data flow diagrams? Explain by constructing a context flow diagram level-0 DFD and Level-1 DFD for a library management system. | (10) | 2 | 3 |
| (ii) Write short notes on Ethnography.   | (4)  | 2 | 2 |

- |  |     |   |   |
|--|-----|---|---|
| 13. (a) (i) Classify and explain the various architectural styles in detail. | (8) | 3 | 4 |
| (ii) Explain the basic design principles of class based components.          | (6) | 3 | 3 |

(OR)

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<b>(b)</b>	<b>(i)</b> Describe transform mapping with an example.	<b>(8)</b>	<b>3</b>	<b>4</b>
	<b>(ii)</b> Discuss the design issues in interface design.	<b>(6)</b>	<b>3</b>	<b>3</b>
<b>14. (a)</b>	<b>(i)</b> Infer on unit testing. How do you develop test suites?	<b>(7)</b>	<b>4</b>	<b>4</b>
	<b>(ii)</b> Assess on Top-down Integration testing and Bottom –up integration testing.	<b>(7)</b>	<b>4</b>	<b>4</b>
<b>(OR)</b>				
<b>(b)</b>	What is White box testing? Explain the different types of White box testing strategies. Explain by considering suitable examples	<b>(14)</b>	<b>4</b>	<b>4</b>
<b>15. (a)</b>	What is the purpose of software reengineering? Summarize the activities involved in software reengineering with help of a diagram.	<b>(14)</b>	<b>5</b>	<b>3</b>
<b>(OR)</b>				
<b>(b)</b>	<b>(i)</b> Illustrate BPR model with a neat diagram.	<b>(7)</b>	<b>5</b>	<b>3</b>
	<b>(ii)</b> Explain Forward Engineering in detail	<b>(7)</b>	<b>5</b>	<b>3</b>

**PART- C (1x 10=10Marks)**  
(Q.No.16 is compulsory)

		<b>Marks</b>	<b>CO</b>	<b>RBT LEVEL</b>
<b>16.</b>	Compare the life cycle models based on their distinguishing factors strengths and weaknesses.	<b>(10)</b>	<b>1</b>	<b>5</b>

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