



**MCA DEGREE EXAMINATIONS: MAY 2016**

(Regulation 2014)

Second Semester

**MASTER OF COMPUTER APPLICATIONS**

P14CAT203: Software Engineering

**COURSE OUTCOMES**

- CO1:** Get an insight into the processes of software development.  
**CO2:** Understand the problem domain for developing SRS and various models of software engineering.  
**CO3:** Model software projects into high level design using DFD, UML diagrams.  
**CO4:** Measure the process performance using various metrics.

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. Find out which process model is suitable for the following situations : CO1 [K<sub>2</sub>]
- The project is simple
  - It is all you know and you have no support for change
  - The upfront investment is not risky to make
  - You focus your performance measures on delivery date and budget
- a) Spiral model b) Incremental model  
c) Waterfall model d) Prototyping model
2. From the following, identify the umbrella activities for the process framework. CO1 [K<sub>3</sub>]
- (i) Software project management (ii) Construction  
(iii) Formal technical reviews (iv) Elicitation
- a) (i) and (ii) only b) (i) and (iii) only  
c) (iii) and (iv) only d) (i),(ii),(iii) and (iv)
3. An \_\_\_\_\_ is a class or pattern that represents a core abstraction that is critical to the design of an architecture for the target system. CO2 [K<sub>1</sub>]
- a) Actor b) Archetype  
c) Use case d) Object
4. Match the requirements model in List I with design model in list II CO2 [K<sub>3</sub>]

List I – Requirements Elements	List II – Design Model
A. Scenario-based , flow-oriented, behavioral	i. Component level design
B. Class-based, flow-oriented, behavioral	ii. Interface design
C. Flow-oriented, class-based	iii. Data design



c) (ii), (i),(iv), and (iii)

d) (iii), (iv), (i) and (ii)

**PART B (10 x 2 = 20 Marks)**

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|---|-----|-------------------|
| 11. Give any two differences between traditional process models and agile process models.   | CO1 | [K <sub>1</sub> ] |
| 12. Draw the prototype model diagram.   | CO1 | [K <sub>2</sub> ] |
| 13. Define stakeholder.   | CO2 | [K <sub>1</sub> ] |
| 14. Give the purpose of CRC modeling.   | CO2 | [K <sub>2</sub> ] |
| 15. In component level design, why it is necessary to keep coupling as low as possible?   | CO3 | [K <sub>3</sub> ] |
| 16. Draw the architectural context diagram for a car security system.   | CO3 | [K <sub>2</sub> ] |
| 17. Define software reliability.  | CO3 | [K <sub>1</sub> ] |
| 18. Give the responsibility of CCA (Change Control Authority).  | CO3 | [K <sub>2</sub> ] |
| 19. “In the hardware world, a company disassembles a competitive hardware product in an effort to understand its competitor’s design and manufacturing secrets”. Find the reengineering concept of above situation and justify. | CO4 | [K <sub>3</sub> ] |
| 20. What is the use of CMMI?  | CO4 | [K <sub>1</sub> ] |

**PART C (10 x 5 = 50 Marks)**

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|--|-----|-------------------|
| 21. Compare and contrast of spiral model and incremental model.    | CO1 | [K <sub>2</sub> ] |
| 22. Write short note on agile scrum model.                         | CO1 | [K <sub>1</sub> ] |
| 23. List out and explain the requirement engineering tasks.        | CO2 | [K <sub>1</sub> ] |
| 24. Are modeling principles always necessary? Explain.             | CO2 | [K <sub>2</sub> ] |
| 25. Explain any five cohesion types.                               | CO3 | [K <sub>1</sub> ] |
| 26. Draw the data flow diagram for library management system.      | CO3 | [K <sub>3</sub> ] |
| 27. Explain the importance of defect amplification removal method. | CO3 | [K <sub>2</sub> ] |
| 28. Write short note on maintenance and supportability.            | CO3 | [K <sub>1</sub> ] |
| 29. Describe the concepts of business process reengineering.       | CO4 | [K <sub>1</sub> ] |
| 30. Explain the process of software process improvement.           | CO4 | [K <sub>1</sub> ] |

**PART D (2 x 10 = 20 Marks)**

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|---|-----|-------------------|
| 31. Application: The bank customer uses ATM to withdraw money from his / her account. | CO1 | [K <sub>3</sub> ] |
| (i) Write the use case specification  | (4) |                   |
| (ii) Draw the use case and activity diagram   | (6) |                   |
| 32. List out and explain the design concepts.   | CO2 | [K <sub>1</sub> ] |

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