MCA DEGREE EXAMINATIONS: JUNE 2015

(Regulation 2014)

Second Semester

MASTER OF COMPUTER APPLICATIONS

P14CAT203: Software Engineering

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. From the following, find the correct order of architectural design steps.   [K_1]

    (i)   Describe instantiations of the system

    (ii) Represent the system in context

    (iii) Define archetypes

    Refine the architecture into components

    a) (ii), (iii), (iv) and (i)   b) (i), (iii), (iv) and (ii)

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

2. Use Case diagram comes under _____ model.   [K_2]

    a) class   b) behavioral

    c) scenario based   d) flow

3. _____ Model is a realistic approach to the development of large scale systems and   [K_3]
    software because the developer and customer better understand and react to risks at each level.

    a) Spiral   b) Waterfall

    c) Incremental   d) Prototyping

4. Match the five levels of CMMI   [K_2]

List I	List II
A. Level 1	i) Quantitatively managed
B. Level 2	ii) Optimized
C. Level 3	iii) Managed
D. Level 4	iv) Performed
E. Level 5	v) Defined

	A	B	C	D	E
a)	i)	iv)	iii)	ii)	v)
b)	ii)	v)	iii)	iv)	i)
c)	iv)	v)	ii)	i)	iii)
d)	iv)	iii)	v)	i)	ii)

5. Assertion (A) : The graphical tools, such as the UML diagram or the flowchart provide   (K$_2$)
   useful representations that readily depict procedural detail.

   Reason (R)   : A picture is worth a thousand words.

   a) Both A and R are true and R is the   b) Both A and R are true but R is NOT the
      correct explanation of A   correct explanation of A

   c) A is true but R is false   d) A is false but R is true

6. _____is an umbrella activity which is the art of identifying, organizing, and controlling   [K$_1$]
   modifications to the software throughout the process.

   a) Configuration Management   b) Supportability

   c) Maintainability   d) Risk management

7. In software project, user satisfaction = _____ + good quality + delivery within budget   [K$_1$]
   and schedule.

   a) Low cost   b) Compliant product

   c) Low time   d) Security

8. In the hardware world, A company disassembles a competitive hardware product in an effort to   [K$_2$]
   understand its competitor's design and manufacturing secrets. This situation is the origin   of

   _____.

   a) backward engineering   b) refactoring

   c) reverse engineering   d) forward engineering

9. Beta testing is performed by the _____.   [K$_2$]

   a) developer   b) customer

   c) designer   d) system analyst

10. From the following which combination is suited for reusability of modules?   [K$_3$]

    (i) High coupling

    (ii) Low cohesion

    (iii) Low coupling

    (iv) High cohesion

    a) (i) & (ii)   b) (ii) , (iii) & (iv)

    c) (i) & (iv)   d) (iii) & (iv)

PART B (10 x 2 = 20 Marks)

11. How can you gather requirements for software project? [K$_2$]

12. Define stakeholder. [K$_1$]

13. When you know software programming, what is the need to learn software engineering concepts? [K$_3$]

14. Give any two constraints to assess the quality of software design. [K$_2$]

15. Why cohesion principle is important in module design? [K$_2$]

16. How is software design different from coding? [K$_2$]

17. Write any two software myths in customer point of view. [K$_1$]

18. Write one advantage and disadvantage of agile development process. [K$_1$]

19. Draw a use case diagram for safe home security system [K$_3$]

20. "Highly coupled module is difficult to unit test". Justify. [K$_1$]

PART C (10 x 5 = 50 Marks)

21. Consider a program which enrolls students for different programs. The students fill a form and submit it. This is sent to the departments for confirmation. Once it is confirmed, the form and the fees is sent to the account section. Design a level 1 data flow diagram for this situation. [K$_5$]

22. Compare the risk management, time estimation and user satisfaction for prescriptive process model with evolutionary process model. [K$_3$]

23. Design a sequence diagram for telephone call system. [K$_3$]

24. Draw and explain the layered architecture style. [K$_1$]

25. Explain the six sigma process for software quality assurance. [K$_2$]

26. Draw the architectural context diagram for car security system. [K$_4$]

27. Draw and explain the software testing strategy in the context of the spiral view. [K$_1$]

28. Discuss about the defect amplification and removal process with example. [K$_3$]

29. Draw the diagram for translating the requirements model into the design model and briefly describe each of four elements of the design model. [K$_2$]

30. Discuss about the alternatives of SEI's CMM and CMMI for SPI framework. [K$_1$]

PART D (2 x 10 = 20 Marks)

31. Draw and explain the unified process model with various phases. [K$_1$]

32. Assume that you are the manager of a software project. Give the scenario of software configuration management for your project. [K$_3$]

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