

Total No. of Questions: 6

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Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2017
CA5CO11 Software Engineering

Programme: MCA Branch/Specialisation: 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. The roles of pigs and chickens are the terminologies of **1**
(a) Extreme programming (b) Scrum
(c) Test driven development (d) Refactoring
- ii. Which of the following discipline is followed for software development **1**
(a) Engineering (b) Manufacturing
(c) Mechanical (d) None of these
- iii. Which is the essential element of project management? **1**
I. People II. Process III. Product IV. Project
(a) II & III (c) III & IV
(b) I, II and III (d) All of these
- iv. The unfavourable situation that may lead to the undesirable outcome is known as: **1**
(a) Failure (c) Risk
(b) Unreliability (d) None of these
- v. The context diagram is also known as: **1**
(a) Node (b) Bubble
(c) Conceptual diagram (d) Detailed DFD
- vi. Which is a requirement analysis method: **1**
(a) Object oriented analysis (b) Structured analysis
(c) Prototyping analysis (d) All of the above

P.T.O.

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- vii. In an effective modular design, we **1**
 (a) Minimize cohesion and maximize coupling
 (b) Maximize cohesion and minimize coupling
 (c) Maximize cohesion and maximize coupling
 (d) Minimize cohesion and minimize coupling
- viii. UML stands for **1**
 (a) Universal Modelling Language (b) Unified Modelling Language
 (c) Unified Meta Language (d) None of the above
- ix. Which one is the testing tool? **1**
 (a) LoadRunner (b) WinRunner
 (c) Marathon (d) All of the above
- x. How many independent paths can be created using McCabe's Cyclomatic complexity metric with 10 edges and 9 nodes? **1**
 (a) 2 (b) 3 (c) 4 (d) 5
- Q.2 i. What are the limitations of waterfall model? **2**
 ii. Explain the characteristics and applications of evolutionary model. **3**
 iii. What is unified process? Explain the unified process model along with its applications. **5**
- OR iv. What is formal method model? Explain its various methods. **5**
- Q.3 i. Explain with example the process decomposition. **2**
 ii. What is configuration management? How it is different from software maintenance? Explain configuration management process. **8**
- OR iii. A simple event registration system for which the size is estimated at 190 KLOC is to be developed for an institution. The value of cost drivers is as follows: Low reliability => 0.78, High product complexity => 1.15, Low application, experience => 1.13, High programming language experience => 0.85. Other cost drivers assumed to be nominal => 1.00. Compute the overall effort and schedule estimates? **8**
- Q.4 i. Differentiate evolutionary and through-away prototyping? **3**

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- ii. Perform structured analysis for the student performance measurement system in which an instructor evaluates students on the basis of term exams, final exam, presentation, attendance, laboratory work and his/ her cognitive skills. **7**
- OR iii. Differentiate functional and non-functional requirements. Identify functional and non-functional requirements of a restaurant order processing system. **7**
- Q.5 i. What is software architecture? Give its importance. **4**
 ii. Perform structured design to produce the design of a telephone directory system that maintains a telephone book in which you can add, delete, edit, search data etc., in it. **6**
- OR iii. Design class diagram for the file management systems in the personal computer. **6**
- Q.6 Attempt any two:
 i. What is integration testing? What are various approaches to integrations testing? Explain with their advantages and limitations? **5**
 ii. Design test cases for the following segment of C program using statement coverage, branch coverage and condition coverage testing methods:

```
get(text);
while(text[i++]!='\0')
if(text[i]==32 || text[i]=='\0')
count++;
```

5
 iii. Describe testing process? How testing and debugging processes are connected to each other? **5**

**CA5CO11 Software Engineering
Marking Scheme**

Q.1	i.	(b) Scrum	1
	ii.	(a) Engineering	1
	iii.	(d) All of these	1
	iv.	(b) Unreliability	1
	v.	(b) Bubble	1
	vi.	(d) All of the above	1
	vii.	(b) Maximize cohesion and minimize coupling	1
	viii.	(b) Unified Modelling Language	1
	ix.	(d) All of the above	1
	x.	(b) 3	1
Q.2	i.	0.5 marks for each limitations (0.5 mark * 4 = 2 marks)	2
	ii.	2 marks for characteristics 1 mark for applications	3
	iii.	2 marks for unified process 3 marks for explanation of UPM with applications	5
OR	iv.	2 marks for formal method model 3 marks for various methods.	5
Q.3	i.	1 mark for example 1 mark for description	2
	ii.	2.5 marks for explanation of configuration management 2.5 marks for difference of it from software maintenance 3 marks for explanation of configuration management process.	8
OR	iii.	2.5 marks for calculation of function 2.5 marks for using the correct usage of constant values in COCOMO model 2 marks for calculation of EAF & schedule 1 mark for calculation & result	8
Q.4	i.	0.75 marks for each differentiate	3
	ii.	4 marks for DFD 3 marks for data dictionary	7

OR	iii.	3.5 marks for differentiation 3.5 marks for functional and non-functional requirements of Restaurant order processing system	7
Q.5	i.	2 marks for explanation of software architecture 2 marks for importance.	4
	ii.	3 marks for module 3 marks for diagram of cohesion & coupling	6
OR	iii.	2 marks for correct identification classes 4 marks for diagram	6
Q.6		Attempt any two:	
	i.	1 mark for definition of integration testing 2 marks for various approaches 2 marks for explanation with advantages and limitations?	5
	ii.	1 mark for statement coverage 2 marks for branch coverage 2 marks for condition coverage	5
	iii.	2 marks for description of testing process 3 marks for explanation of testing & debugging processes connection.	5
