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521453(21)

MCA (Fourth Semester) Examination, April-May 2017

(New Course)

(Computer Application Branch)

SOFTWARE ENGINEERING

Time Allowed : Three hours

Maximum Marks : 100

Minimum Passing Marks : 40

Note : *Answer any two parts from each question. All questions carry equal marks.*

Unit - I

1. (a) Define Software Engineering and its goal. What are the problems faced by software. 10

(b) Why do we need the software process model? Compare the waterfall model, prototyping model incremental and RAD model based on the following factors :

Methodology, advantages, disadvantages and applications. 10

(c) Define SCM. What are different phases of Project Management Process. 10

Unit - II

2. (a) Explain requirement analyais in detail. Explain the object oriented modelling with the help of an example. 10

(b) Draw a DFD for airline reservation system using context level and 1st level DFD. 10

(c) What is cost estimation? Consider a project to develop for an office automation. The major components identified along with their sizes are :

Data entry 0·6 KDLOC

Data update 0·6 KDLOC

Querry 0·8 KDLOC

Reports 1·0 KDLOC

The different cost driver attributes are :

Complexity	High	1.15
Storage	High	1.06
Experience	Low	1.13
Programmer capability	Low	1.17

Use the COCOMO model to determine overall effort and schedule estimates.

Unit - III

3. (a) Explain the concept of structured design methodology and steps used in structured design methodology. 10

(b) What is Cohesion? How it is different from coupling? Explain different types of cohesion. 10

(c) Write short notes on following with example : 10

(i) Interaction diagram

(ii) Use Case diagram

(iii) Activity diagram

Unit - IV

4. (a) What if software testing? Explain the testing objectives and principles. 10

(b) Explain White box and Black box testing techniques. "For proper testing both the technique is needed to be applied" Comment. 10

(c) What is object oriented programming testing? Explain with an example. 10

Unit - V

5. (a) What is CASE? Explain various building blocks of CASE? Also list any two taxonomy of CASE Tools. 10

(b) What do you mean by CBSE? Describe CBSE process and economics of CBSE in detail. 10

(c) Define software reengineering. Explain software reengineering process model. 10