4E4163

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B. Tech. IV Sem. (Main/Back) Exam., June/July-2014

Computer Science and Engineering

4CS4A Software Engg.

Time: 3 Hours **Maximum Marks: 80**

Min. Passing Marks: 24

Instructions to Candidates:-

*Attempt any **five questions**, selecting **one question** from **each unit**. All Questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.*

Units of quantities used/ calculated must be stated clearly.

Use of following supporting material is permitted during examination.

(Mentioned in form No.205)

1._____ 2._____

UNIT-I

Q.1 (a) What is system? Differentiate between system Engineering and Software Engineering. [3+3=6]

(b) Discuss major problems in System development. [5]

(c) List and describe characteristics of a good Software. [5]

OR

Q.1 (a) What is SDLC? Explain DOD and MIS Oriented SDLC models in brief. [8]

(b) Explain System level project planning in detail. [8]

UNIT-II

Q.2 (a) Define the following:

(i) Software

(ii) Software Engineering

(iii) Software processes

(iv) Software Process model [2×4=8]

(b) Explain incremental process model. Justify that it is appropriate for business Software Systems but less appropriate for real time Systems. [8]

OR

Q.2 (a) With the help of neat diagram, explain Boehm's spiral model. [10]

(b) Spiral model can support both change avoidance and change tolerance. Explain. [3]

(c) Give merits and demerits of spiral model. [3]

UNIT-III

Q.3 (a) Define software requirement Engineering. [3]

(b) What are functional and non- functional Software System requirements? [5]

(c) Explain Finite State Machine (FSM) Models. [8]

OR

Q.3 (a) Describe how to prepare a Software requirement specification (SRS) document. List possible Users and Use of SRS for each User. [8]

(b) Explain Data Flow and Control flow diagrams with Suitable example. [8]

UNIT-IV

Q.4 (a) What is Software design? [4]

(b) What are architectural and Procedural Software designs? Explain. [12]

OR

Q.4 (a) Discuss preparation of Software Design Document. What is Significance of Design document? [8]

(b) What is Software Coding? Describe programming style and program Quality in Context of Software coding. [8]

UNIT-V

Q.5 (a) Discuss object oriented Analysis (OOA) and modeling in detail. [8]

(b) Explain Object oriented design Concepts and methods. [8]

OR

Q.5 (a) What is UML? [1]

(b) Explain the following in context of UML

(i) Use case Diagrams.

(ii) Sequence Diagrams.

(iii) Classes and objects.

(iv) Interfaces.

(v) State Diagrams. [3×5=15]