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4E 2919

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4E 2919

B.Tech. IV Semester (Main/Back) Examination 2012

Computer & I.T.

4CS5 Software Engg.

Common for CS & IT

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 may suitably be assumed and stated clearly.)Units of quantities used/ calculated must be stated clearly.*

Unit - I

1. a) "Quality of planning effort plays a vital role in the success or failure of the project". Justify this statement. Explain the contents of System-Level development plan. **(2+4)**

   b) Differentiate System Engineering and System Analysis giving the role of system engineer or system analyst. **(6)**

   c) Precisely define system and briefly explain the characteristics of a system. **(4)**

Or

   a) What are the major problems associated with the development of large systems? Give the suggestions to solve these problems. **(4+4)**

   b) What do you mean by SDLC? Explain the different phases of SDLC in detail. **(8)**

Unit - II

2. a) Name the five framework activities defined for software engineering. Briefly explain how these are involved in different process flows. **(8)**

   b) Explain any two models used to chose specialized software engineering approach. **(8)**

Or

a) With the help of a neat sketch, explain the waterfall model of software engineering. What are the drawbacks of this model? **(4+2)**

b) Write short notes on the following:

i) Incremental Process Models

ii) Evolutionary Process Models. **(5+5)**

Unit - III

3. "A text processing system (TPS) takes input text from the user in the form of a line containing numeric and alpha characters in any combination. The alpha characters and numeric characters are separated from the input line in the order of their occurrence. Alpha characters are converted to upper case and stored in a file, TXT. Numeric characters are converted into 4-bit binary and stored in a file, BIN. A retrieval process is used to access TXT and BIN files and display the information as per user's request". Draw the context level, level-1 and detailed level DFD to implement the above TPS, showing relevant example. **(3+4+5+4)**

Or

a) What are the benefits of software prototyping? Differentiate evolutionary and throw-away prototyping. **(4+4)**

b) Write short notes on the following :

i) Data dictionary

ii) Finite State Machine Models. **(4+4)**

Unit - IV

4. a) Discuss atleast any 8 rules that lead to a better programming style. **(4)**

b) "A good program has certain measurable attributes". Justify the statement mentioning the quality of program. **(6)**

c) What is quantifying program quality? With the help of your own hypothetical example, explain a method of quantifying program quality. **(6)**

Or

a) What are the steps that are followed to obtain a good program design? Explain in brief. **(4)**

b) What do you mean by Software Design Specification? Giving the format explain SDS to cover most of the important design information. **(8)**

c) Explain any two architectural styles of software design in brief. **(4)**

Unit - V

5. Considering "Hospital Information System" as an example, explain the following UML diagrams in detail, with the help of neat sketches:

a) Use case diagram b) Class diagram

c) Sequence diagram d) State transition diagram **(4×4)**

Or

a) "A student visits a library to borrow the book. The student has to submit library issue card to the library. The student makes the book request by giving title of the book and name of the author. The library information system maintains the titles list and authors list. The system also keeps the records of available books and their location as bookshelf number. The list of requested book should be displayed by the system to issue the book".

Considering the above scenario, with reference to OOM, identify the relevant classes, associations and attributes giving proper justification. After the identification, derive object model with neat sketch. **(6+6)**

b) With the help of your own example, differentiate Event Flow diagram and Data Flow diagram. **(4)**
