Sl. No.

B3.3-R4 : SOFTWARE ENGINEERING AND CASE TOOLS

NOTE :
1.   Answer question 1 and any FOUR from questions 2 to 7.
2.   Parts of the same question should be answered together and in the same sequence.

Time : 3 Hours   **Total Marks : 100**

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1.   (a)   What is the difference between Spiral Model and Prototype Model in Software Engineering and also state some difference between Throwaway and Evolutionary Prototyping.

     (b)   Justify the term "Software is engineered" and mention the characteristics of Software.

     (c)   Give an example of design fault that leads to failure.

     (d)   Write down the functional requirement for a Library Management System.

     (e)   Define Cardinality & Modality. Define the Cardinal & Modality values for the data objects "manufacturer" and "Car". The relationship is "builds".

     (f)   What are the primary objectives of developing CASE tools ? What are the different facilities that a CASE environment provides ?

     (g)   Write short note on Empirical Estimation Models.   **(7x4)**

2.   (a)   Explain all the phases involved in the implementation phase.

     (b)   Explain the importance of component based Software Engineering.

     (c)   What are the activities in User Interface Design Process ? Elaborate each of these techniques.   **(6+6+6)**

3.   (a)   What do you understand by Reverse Software Engineering and Software Re-Engineering ? Are these two equivalent processes ?

     (b)   What is the difference between SRS Document and Design Document ? What are the contents we should contain in the SRS Document and Design Document ?

     (c)   What is Feasibility Study ? What are the contents we should contain in the Feasibility Report ?   **(6+6+6)**

4.   (a)   Draw a simple Use Case diagram showing all main functions of the ATM system and write the "Withdraw Transaction", use Case template.

     (b)   Explain Component based Software Engineering Process.

     (c)   What do you mean by Software Quality ? Discuss factors that affect Software Quality.   **(6+6+6)**

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5. (a) Explain the difference between Data Flow Model and Control Flow Model.

   (b) List and explain different types of Testing Tools and Workbenches used in Software Testing. **(9+9)**

6. (a) Describe the role of Change Control in successful completion of project.

   (b) List the top 10 software project risks and briefly outline the strategies for reducing each of the risk.

   (c) Draw Context Level Data Flow Diagram and Class Diagram for an Airline Reservation System. **(6+6+6)**

7. (a) What is Software Measure and mention the characteristics of Software Measurement.

   (b) Explain COCOMO Model. Use it to estimate the effort to build software for a simple ATM that produces 12 Screen, 10 reports and will require 80 software components. Assume average complexity and average developer maturity.

   (c) Discuss the Function Point Analysis. Briefly explain all major components of Function Points. **(6+6+6)**

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