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)