

Total No. of printed pages = 3

19/5th Sem/DCSE502

2021

**SOFTWARE ENGINEERING**

Full Marks – 100

Time – Three hours

The figures in the margin indicate full marks  
for the questions.

Answer any *five* questions.

1. (a) What is Software Development Life Cycle ?  
3
- (b) Explain various stages of the Prototyping life cycle model with the help of a diagram. 8
- (c) Differentiate between :  $3 \times 3 = 9$ 
  - (i) Abstraction and Decomposition
  - (ii) Program and Software product
  - (iii) System engineering and Software engineering.
2. (a) What are the advantages and disadvantages of a spiral model ? Explain how risk management is performed in this model.  $4 + 3 = 7$

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- (b) Write the various properties of a good SRS document. 6
- (c) What is a decision tree ? Draw a decision tree for a Library Membership Automation Software (LMAS). 2+5=7
3. (a) What do you mean by DFD ? 3
- (b) Draw the DFD for an RMS calculating software. Also develop its data dictionary. 6+5=11
- (c) Define a structure chart. Draw the structure chart for the above RMS calculating software. 2+4=6
4. (a) What is software documentation ? Discuss the different types of software documentation in brief. 2+6=8
- (b) State the basic principle of software testing. Explain the various levels of testing involved in a software development process. 2+6=8
- (c) Define the following : 2+2=4
- (i) Black box testing
- (ii) Stress testing.
5. (a) Why project management is important in a software development process ? List out the various activities under the project planning phase. 3+5=8



- (b) What do you mean by software cost estimation ?  
Discuss the different cost estimation techniques in brief.  $2+6=8$
- (c) Discuss Delphi cost estimation. 4
6. (a) Suppose a project was estimated to be 200 KLOC. Calculate the effort and development time for each of the following three models.
- (i) Organic
  - (ii) Semi-detached
  - (iii) Embedded.  $3 \times 4 = 12$
- (b) Explain the various quality factors associated with a software product. 8
7. (a) What is the role of a software quality management system ? List out its activities to ensure a good quality system.  $3+5=8$
- (b) Define quality control and quality assurance.  $3+3=6$
- (c) Write a brief note on software reliability. 6

