

Total number of printed pages 2: Programme (UG)/Semester (VI)/UCSE602

2023

Software Engineering

Full Marks : 100

Time : Three Hours

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

Answer question no. 1 (Compulsory) and any four (4) from the rest.

1.

a. Define the following terms in brief: 2*5=10

- i) Software Life Cycle ii) Software Engineering iii) DFD
iv) Data dictionary v) Design document

b. Differentiate between the followings: 2*5=10

- i) Phase Entry and Phase Exit Criteria
ii) Alpha Testing and Beta Testing
iii) Structured Analysis and Structured Chart
iv) Function Oriented Design and Object Oriented Design
v) Unit Testing and System Testing

2.

- a. What will happen if software engineering process is not followed properly?
b. Discuss the two software engineering techniques: Abstraction and Decomposition.
c. Why classical waterfall model is not a choice of the modern software developers?
d. Which lifecycle model is known as Meta model and why?

3.

- a. What is SRS? Discuss functional and non-functional requirement. 5
b. Explain five desirable characteristics of a good software requirement specification. 5
c. Write down the functional requirements of an SRS document for an ATM (Automated Teller Machine). 10

- 4.
- a. Define Cohesion and Coupling. Explain different types of Cohesion and Coupling. **2+8= 10**
 - b. Explain the characteristics of good software design. **5**
 - c. “Software design is a layered technology”, justify it. **5**
- 5.
- a. What is a Prototype Model? Mention the important advantage of it? Discuss the model with a suitable diagram. **2+2+6=10**
 - b. Discuss the job responsibilities for managing software projects in details. **4**
 - c. Assume that the size of an organic type software product has been estimated to be 32,000 lines of code. Assume that the average salary of a software developer is Rs. 15,000 per month. Determine the effort required to develop the software product, the nominal development time, and cost to develop the product. **6**
- 6.
- a. What do you mean by generic and customized software? **4**
 - b. On what basis, an appropriate life cycle model is selected for a project? **3**
 - c. A customer number (CN) is provided to the customers by a super market. The super market intends to provide special award to top 10 customers who make the highest purchase over the year. Moreover, a gold coin of worth RS. 3000.00 will be provided to them whose annual purchase is more than RS. 15000.00. Draw the context diagram, 1st level DFD and 2nd level DFD for the same. **2+4+4=10**
 - d. Mention the problems an analyst need to identify in the requirement analysis. **3**
7. Write a short note on any four **5x4=20**
- a. Activity diagram
 - b. Intermediate COCOMO model
 - c. Evolutionary model
 - d. Software crisis
 - e. Delphi Cost estimation Technique
 - f. Project Planning
 - g. Critical Path Method