USN ☐☐☐☐☐☐☐☐☐☐ 18CS35

Third Semester B.E. Degree Examination, Jan./Feb. 2021
Software Engineering

Time: 3 hrs. Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. What are the attributes of good software? Explain the key challenges faced in software engineering. (08 Marks)
 b. With a neat diagram, explain the waterfall model of software development process. (06 Marks)
 c. Describe the general model of software design process. (06 Marks)

OR

2 a. Define and differentiate functional and non-functional requirements. (06 Marks)
 b. What is requirements specification? Explain various ways of writing system requirements. (08 Marks)
 c. What is ethnography? How ethnography is effective in discovering the types of requirements? (06 Marks)

Module-2

3 a. What is OO development? Explain object oriented themes briefly. (08 Marks)
 b. What are links and associations? Write and explain UML notation for links and association with an example. (06 Marks)
 c. Describe generalization and inheritance with an example. (06 Marks)

OR

4 a. What is object orientation? What are the important characteristics of OO approach? Explain. (08 Marks)
 b. Define model. Describe the relationship among three models. (08 Marks)
 c. With the help of a sample class model explain multiplicity and Association and names. (04 Marks)

Module-3

5 a. Draw and explain a contest model for patient information system. (06 Marks)
 b. With a diagram, explain the phases in the Rational Unified Process (RUP). (06 Marks)
 c. With the help of a neat state diagram, illustrate the working of a microwave oven. (08 Marks)

OR

6 a. What is model driven engineering? State the three types of abstract system model produced with a neat diagram. (08 Marks)
 b. What are the activities to the carried out in object oriented design process of a system? How the objects are identified? (08 Marks)
 c. What is open source development? Explain general models of open source licensing. (04 Marks)

Module-4

7   a. What is list driven development? With a neat diagram, explain test driven development process. (08 Marks)
    b. With neat diagram, explain six stages of acceptance testing process. (08 Marks)
    c. What are the different types of interfaces to be tested during component testing? Explain. (04 Marks)

OR

8   a. Write and explain Lehman's laws related to system charge. (08 Marks)
    b. What is software maintenance? Draw the general model of reengineering process and explain. (08 Marks)
    c. What are the strategic options involved in legacy system management? Discuss. (04 Marks)

Module-5

9   a. For the set of tasks shown below draw the activity bar chart for the project scheduling.

Task	Duration (Days)	Dependencies
T_1	10	-
T_2	15	
T_3	15	T_1 (M1)
T_4	10	-
T_5	10	T_2, T_4 (M3)
T_6	5	T_1, T_2 (M4)
T_7	20	T_1 (M1)
T_8	25	T_4 (M2)
T_9	15	T_3, T_6 (M5)
T_{10}	15	T_7, T_8 (M6)
T_{11}	10	T_9 (M7)
T_{12}	10	T_{10}, T_{11} (M8)

(08 Marks)

    b. Write and explain the factors affecting software pricing. (05 Marks)
    c. Explain briefly the algorithm cost modeling and write the difficulties. (07 Marks)

OR

10 a. With a diagram, explain the phase involved in software review process. (08 Marks)
    b. Explain briefly the key stages in the process of product measurement. (08 Marks)
    c. Write any four product and process standards. (04 Marks)

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