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**Fifth Semester B.E. Degree Examination, Dec.2014/Jan.2015**  
**Software Engineering**

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting  
at least TWO questions from each part.**

**PART – A**

1. a. What is a software process model? Explain the types of software process models. (06 Marks)  
 b. Explain the key challenges facing software engineering. (06 Marks)  
 c. With a neat block diagram explain the systems engineering process activities. (08 Marks)
2. a. With a neat block diagram, explain the spiral process model. (08 Marks)  
 b. Define dependability. Also explain briefly the four principle dimensions of dependability. (06 Marks)  
 c. With appropriate block diagram explain briefly the requirement engineering process or software specification activities. (06 Marks)
3. a. For the set of tasks shown below draw the project scheduling using,  
 i) Activity chart.  
 ii) Gantt / Bar chart.  
 iii) Staff allocation versus time chart.  
 Assuming start date of project as 01 Nov.2014. (10 Marks)

Task	Duration	Dependency
T <sub>1</sub>	8	-
T <sub>2</sub>	15	-
T <sub>3</sub>	15	T <sub>1</sub> (m <sub>1</sub> )
T <sub>4</sub>	10	-
T <sub>5</sub>	10	T <sub>2</sub> , T <sub>4</sub> (m <sub>2</sub> )
T <sub>6</sub>	5	T <sub>1</sub> , T <sub>2</sub> (m <sub>3</sub> )
T <sub>7</sub>	20	T <sub>1</sub> (m <sub>1</sub> )
T <sub>8</sub>	25	T <sub>4</sub> (m <sub>4</sub> )

- b. Draw a state machine model of a simple microwave oven. (05 Marks)
- c. Draw a sequence diagram for withdrawing money from ATM. (05 Marks)
4. a. Write the IEEE format of writing SRS. (05 Marks)  
 b. Differentiate between:  
 i) User requirements and system requirements.  
 ii) Functional requirements and non-functional requirements. (05 Marks)  
 c. Explain briefly the techniques of requirements discovery. (10 Marks)

**PART – B**

5. a. List the system structuring styles and explain the repository model with a block diagram. (06 Marks)  
 b. With a neat block diagram, explain the object oriented decomposition for invoice processing sub-system. (06 Marks)  
 c. Explain briefly:  
 i) Call-Return control model.  
 ii) Broadcast control model. (08 Marks)

- 6 a. With appropriate block diagram explain briefly extreme programming process model. (10 Marks)  
 b. With appropriate block diagram, explain the system evolution process. (10 Marks)
- 7 a. Explain briefly the software inspection process. (06 Marks)  
 b. With a neat block diagram explain the verification and validation process (V-model). (06 Marks)  
 c. Perform the path testing for the following program flow graph by computing Cyclomatic complexity. (08 Marks)

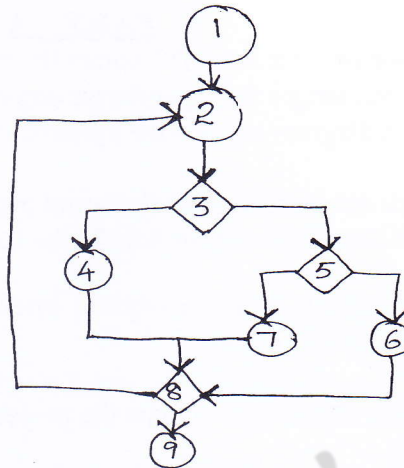


Fig. Q7 (c)

8 Write short notes on:

- Legacy system.
- Cocomo model.
- Capability maturity model.
- Software testing process.

(20 Marks)

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