

C8-R3: ADVANCED SOFTWARE ENGINEERING

NOTE:

1. Answer question 1 and any FOUR questions from 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

Time: 3 Hours

Total Marks: 100

1.

- a) Justify – “Engineering is a problem solving activity”.
- b) What is requirement validation? Describe the activities performed during requirement validation.
- c) Explain in brief about the process-related metrics of OOSE.
- d) What is the purpose of system testing? Which activities are performed during system testing?
- e) Explain the terms actors and use case with an example.
- f) What is an abstraction? Explain in brief about the role of an abstraction during modelling process.
- g) What is OCL? Give the meaning or architecture, method and process.

(7x4)

2.

- a) Explain the meaning of ‘Software reuse’. Discuss the steps required to implement the concepts of software reuse in software development industry.
- b) Explain in brief about the IEEE standards for software life cycle processes.
- c) What issues are involved for the management of software development? How can a risk be handled in a software development?

(9+4+5)

3.

- a) What do you mean by the term ‘nonfunctional requirements’? Discuss the issues involved for investigating non-functional requirements.
- b) What is a system specification? Explain the meaning of verifiability and traceability with an example.
- c) Explain in brief about the methods used for eliciting information.

(7+5+6)

4.

- a) Describe the concepts of generalization and inheritance with suitable example. What is the use of generalization?
- b) Explain the meaning of aggregation and multiplicity with an example.

(10+8)

5.

- a) What is UML? Explain in brief about the different types of diagram defined in UML.
- b) What components are included in the use case model? Explain the steps required to build the use case diagram. Illustrate by an example.

(10+8)

6.

- a) Explain the process of testing in object oriented software development.
- b) What are ISO 9000 and ISO 9001? Which areas does ISO 9001 cover?
- c) Define the meaning of ‘Software architecture’? Discuss the concepts of pipe-filter architecture and client-server architecture.

(6+6+6)

- 7.**
- a) Describe the way to determine the control flow in object-oriented systems. Describe in brief on process-driven control, event-driven control and threads.
 - b) Define the term 'Component' with an example. Also describe the uses of it. Give the salient paradigms of components-oriented software engineering.

(10+8)