Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 75493

5 Year M.Sc. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Fifth Semester

Software Engineering

ESE 054 — SOFTWARE ARCHITECTURE

(Regulation 2010)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   List some of the disadvantages of layered system.

2.   Define task tree.

3.   Give the different domains in which information system are applied.

4.   List the tools that populate IBDE.

5.   Differentiate application interface and domain interface.

6.   What is the role played by "Design space" in Software Architecture?

7.   Define ADL.

8.   List the components and interconnections used in architectural descriptions.

9.   Give the structure of a Fable.

10.   Define software architecture reconstruction.

PART B — (5 × 16 = 80 marks)

11. (a) Why is software architecture important? Elaborate on how software architecture inhibits or enables systems quality attributes, to build systems using large, externally developed elements.

Or

(b) (i) Draw the architecture of a compiler which takes the source code in HLL, follows different phases and converts it to object code. (Use any of the two styles). (8)

  • Pipes and filters

  • Layered architecture

  • Blackboard style.

 (ii) Compare and contrast and also give relationship between requirements and design. Illustrate with examples. (8)

12. (a) What are non-functional requirements? Specifically discuss "Modifiability" for a software system, with relevant examples of your choice.

Or

(b) Explain the need of integration in software development environments. Give relevant examples.

13. (a) A fish tank game is designed which has many types of fishes in tank of water apart from other objects. There are fishes with different colors, shapes and sizes such as eels, king fishes etc. each requiring a different way of displaying them. They exhibit several movements such as swimming, garling etc. The game can be enhanced by adding new types which may swim like other fishes or may exhibit totally new behavior. Fishes may change their behavior suddenly when they hit other objects. Complex algorithms will be used to make unusual movements possible. Explain the guidelines and rules that can be used by software architect for giving the suitable design pattern for the above scenario.

Or

(b) Explain design space models, requirements and issues for user interface architecture.

14. (a) Evaluate linguistic character for architectural description and explain about the ideal properties desirable from architectural description languages.

Or

(b) (i) Write short notes on view catalog. (6)

   (ii) What are the options for representing connectors and systems in UML? Explain in detail. (10)

15. (a) Describe the features of Unicon and explain how to check types in Unicon.

Or

(b) Give details about a tool kit for constructing style specific architectural design environment.