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**Question Paper Code : 95318**

5 Year M.Sc. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Seventh Semester

Software Engineering

ESE 074 — OBJECT ORIENTED SOFTWARE ENGINEERING

(Regulations 2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is software engineering? How is it different from other traditional engineering branches?
2. Reason out the purpose of introducing abstraction in software development?
3. Define data dictionary. List down the information available in it.
4. Give an example for each of the following while requirements modeling Normal requirements, expected requirements and excited requirements.
5. How structural partitioning can help to make software more maintainable?
6. State the goal of analysis process. How does a use case model help in analysis process?
7. Why do we have a construction process? What is done in the construction phase?
8. Draw an interaction diagram for depositing a cheque in a bank.
9. Draw the abstract model of industrial real time systems.
10. What are the real time requirements to be considered during construction of real time systems?

PART B — (5 × 16 = 80 marks)

11. (a) Define software process. Discuss the significant features of system development as an industrial process and explain the software life cycle.

Or

- (b) What is Object Oriented Programming? How it differs from Structured programming? Discuss characteristics of Object Oriented Languages and the umbrella activities of an object oriented system development?
12. (a) (i) You have been asked to build a network-based course registration system for your university. Develop an entity/relationship diagram that describes data objects, relationships and attributes. Draw a context-level model (level 0 DFD) for the system and write a context-level Processing narrative for the system.
- (ii) How are the concepts of coupling and software portability related? Provide Examples to support your answer.

Or

- (b) (i) Discuss the design heuristics for effective modularity.
- (ii) Given a set of requirements for business applications (any e-commerce application), how will you do the design model? How will you assess the quality of your design?
13. (a) An Hospital Reception subsystem supports some of the duties of hospital receptionist. Receptionist schedules patient's appointments and admission to the hospital, collects information from patient upon patient's arrival and/or by phone. For the patient that will stay in the hospital (inpatient) s/he should have a bed allotted in a ward. Receptionists might also receive patient's payments, record them in a database and provide receipts, file insurance claims and medical reports. (Perform requirement analysis and draw the necessary diagrams for the analysis of the above system).

Or

- (b) Discuss the steps in mapping requirements into a software architecture.

14. (a) Electronic Appliances Control (EACS) System accessed by a remote device allows controlling, monitoring and coordinating University's electronic appliances. The Student/Faculty/Staff can interact through any input device such as the Laptop, Palmtop, Cell phone etc.. and the interface allows the user to enter or tell the user name and password. The user can also provide fingerprint or retinal scan for authentication. The system then transfers the details to the authentication server and the authentication server allows or denies the user according to the information provided. After Authentication, the user is allowed access into the system. EACS is a system which is controlled by a remote system such as a cell phone and controls appliances such as AC, Servers and the like. In case of emergency such as fire, the user or an organization such as Fire Department should be notified. Also, EACS should have a database of information about the users and appliances. Draw necessary diagrams to show the interactions in the Electronic Appliances Control (EACS).

Or

- (b) Based on your experience with elevator system, draw a state diagram comprising all its states.
15. (a) (i) Define component? List down the criteria for construction of components.
- (ii) State the purpose of integration testing.

Or

- (b) (i) Compare the features offered by ORDBMS and OODBMS.
- (ii) Explain the need for Classification with an example.