2005 CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING(C-DAC) M.C.A

END - TERM EXAMINATION
FOURTH SEMESTER [MCA] - MAY 2005
SOFTWARE ENGINEERING

Paper Code: MCA 206
Time : 3 Hours
Maximum Marks : 60

Q. 1. (a) What are the advantages of using software process models? Explain the prototype and spiral model in detail. (8)

(b) What process model you will follow for developing (i) Editor (ii) Radiation therapy machine software. Justify your answer. (4)

Q. 2. (a) Describe briefly different stages of risk management process.

(6)
(b) The value of size of program in KLOC and different cost drivers are given below: size – 300 KLOC, Complexity 0.95, Analyst capability – 1.05, Applications of Software Engineering Methods – 0.8, Performance Requirement – 0.75. Calculate the effort for three types of projects i.e. organic, semidetached and embedded using COCOMO model. (6)

Q. 3. (a) What is the use of drawing context diagram?

(2)
(b) A blood bank receives and stores blood donated by people and also gives blood to individuals or hospitals on demand. The blood bank also has a panel of vendors who supply various items after receiving the order from the blood bank. If a donor approaches the blood bank, his blood sample is taken and test for various diseases. If approved blood is taken and stored in the bank. The contact details of donor are recorded and donor is issued a card which is valid for one year. During this period the donor by showing the card can get the blood from the blood bank. From time to time blood bank organizes the blood donation camp. Date and venue is announced in the newspaper and existing regular donor are also informed by post. The blood bank also has a panel of doctors. Two doctors from the panel are also associated with the camp to handle emergencies. For these requirements draw (i) ER diagram (ii) Context diagram. (6+4)

Q. 4. (a) Define each of the following terms:-
(6)
(i) Structure chart (ii) Transaction Centered Design
(iii) Control Coupling (iv) Temporal Cohesion
(v) Requirement (vi) Software requirement Specification
(vii) Adaptive Maintenance (viii) Error

(b) Explain briefly Information Flow Metrics. For the structure chart given below in Fig.1. Calculate the information flow index of individual modules as well as whole software. (6)
Fig. 1.

Q. 5. (a) What is the difference between what box and black testing? Explain in detail some white box testing techniques discussed in the class.
(12)

Q. 6. (a) Define software reliability. How it is different from hardware reliability. (2)

(b)What are the main objectives of Reverse Engineering? (4)

(c) Write short notes on Basic Execution Time Model. (6)

Q. 7. (a) Write short notes on Any two:
(6 + 6)
(i) Capability Maturity Model
(ii) Configuration Management
(iii)Software Reengineering
(iv) CASE Tools