MAJOR EXAMINATION – May 4 , 2007

Software Engineering (MAL 745)

Time: 2 Hours   **Marks: 30**

Answer Q1 and any three from the rest (all carry equal marks).

Q1   Consider the design of a library management system. The system maintains a database of books and a separate database of the users. The system is expected to automate   (a) lending and return of books and (b) issuance of message to a user who misses a due date to return books.

(a)   Identify the System requirements of the above system.

(b)   Design the *context model* and *behavioural model* of the above.

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Q2.   A project consists of eight activities with the following information;

Activity	Immediate predecessor	Estimated Duration (in days)		
		Optimistic	Most likely	Pessimistic
A	--	2	2	8
B	--	3	6	15
C	--	1	3	7
D	--	3	4	21
E	B, C	2	8	14
F	A, D	7	9	13
G	B, D	5	8	11
H	E,G, F	1	4	7

(a) Draw the project schedule network.

(b) Find the expected duration and its variance for the project.

Q3. What do you mean by software reliability? Explain with applicability different reliability metrics used in software development.

Q4   What are the characteristics of a distributed system? Explain its advantages and disadvantages. Explain with diagram the *client-server* architecture.

Q5. Describe the Distributed Object Architecture as standardized in CORBA.

Q6. How system testing and component testing are carried out? Illustrate with examples.