CSE/IT 4th Semester

Department of Information Technology

NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR

MAJOR EXAMINATION

Course: Software Engineering
Semester: 4th
Date: 09/07/17

Time: 2 hrs
Max. Marks: 60
Code: IT 401

Attempt any four questions

Q1. (a) Give your views about what is more important, the product or the process? [4]
(b) What do you mean by software quality and what are its various attributes? [4]
(c) Explain in detail the prototyping model and what are the various types of prototyping available? [7]

Q2. (a) Explain in detail the following requirement elicitation techniques along with an example:
i. House of Quality
ii. Use cases [4,4]
(b) Describe the various functional and non-functional requirements of an SRS document. Give an overview about the organisation of an SRS document [7]

Q3. (a) Explain the concept of a Data Flow Diagram (DFD). Draw a Level 3 DFD for Railway Reservation System. [4]
(b) What are the various levels of a design model? Explain each in detail. [8]
(c) State the difference between Top down and Bottom up design strategy. [3]

Q4. (a) Given below is the database system for an office automation project in which 4 modules are to be implemented:
Data entry: 0.6 KLOC, Data update: 0.6 KLOC,
Query: 0.8 KLOC, Report generator: 1.0 KLOC

Efforts are rated as follows (all others nominal, 1.0):

cost drivers	Ratings					
	Very low	low	nominal	High	Very high	Extra high
complexity	0.70	0.85	1.0	1.15	1.30	1.65
storage	-	-	1.0	1.06	1.21	1.56
experience	1.29	1.13	1.0	0.91	0.82	-
prog capabilities	1.42	1.17	1.0	0.86	0.70	-

Software projects	a_i	b_i	c_i	d_i
Basic COCOMO	3.2	1.05	2.5	0.38
Semi-detached	3.0	1.12	2.5	0.35
Embedded	2.8	1.20	2.5	0.32

Calculate the total effort, development time and staffing for this project. [6]

(b) What is Integration Testing? Describe the following strategies used for integration Testing:

i. Big Bang [5]

ii. Incremental Approach. [4]

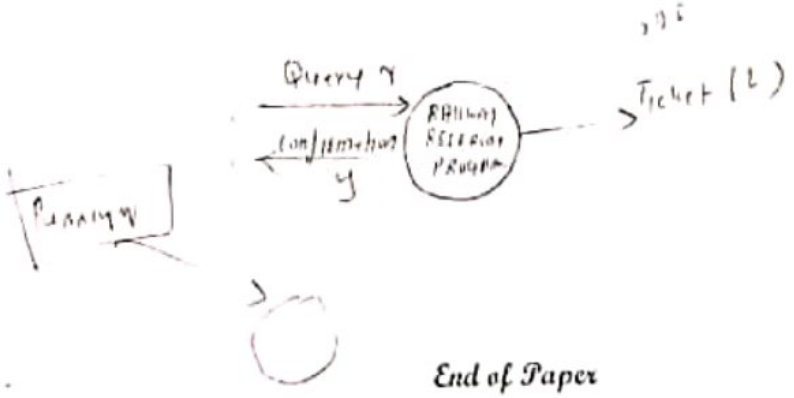
(c) What are the various objectives of Software testing?

Q5. (a) The development effort for a software project is 300 person-months. The empirically determined constant (K) is 0.3. The complexity of the code is quite high and is equal to 8. Calculate the total effort expended (M) if:

i. The maintenance team has a good level of understanding of the project (d=0.9)

ii. The maintenance team has a poor level of understanding of the project (d=0.1) [8]

(b) Explain the Boehm Model for Software maintenance. How can it be used to estimate Software maintenance effort? [7]



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