AUTUMN MID SEMESTER EXAMINATION-2018

School of Computer Engineering

KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY
DEEMED TO BE UNIVERSITY, BHUBANESWAR-24

Software Engineering
[IT-3003]

Time: 1½ Hours **Full Mark: 20**

Answer any four questions including question No.1 which is compulsory.
The figures in the margin indicate full marks. Candidates are required to give their answers in their own words as far as practicable and all parts of a question should be answered at one place only.

Q.1. [5×1]

(a) What are functional and non-functional requirements?
(b) Why spiral model is known as meta model?
(c) Identify the different types of problems an analyst may come acrossduring requirement analysis.
(d) What are the reasons for software crisis? Explain.
(e) What are the roles of a software project manager ?

Q.2. (a) Suppose you are the project manager in a software organization. During requirement gathering you found that the end users are not clear about their requirements and even after several iterations of discussion the specification document is not finalized. This problem will motivate you to follow which software life cycle models? Justify and discuss about the life cycle model. [2.5]

(b) Write down the functional requirements for an automated library management system which supports the functions like add new member, renew membership and cancel membership. Please also create the suitable decision tree. [2.5]

Q.3. (a) Explain the concept of function point. How it is different from LOC? [2.5]

(b) Consider a project with the following functional units: [2.5]
30 simple user forms and 20 average complexity user inputs.
40 update operations with screen display.
20 simple enquires and 15 complex enquiries)
User files = Customer Information, daily transaction details and 4 more.Number of external interfaces = 4
Assuming all complexity adjustment factors as average. Calculate the function points for the project.

Q.4. (a) Differentiate between basic COCOMO and intermediate COCOMO. [2.5]

(b) Assume that the size of an organic type software product has been estimated to be 90,000lines of source code. Assume that the average salary of software engineers be Rs. 20,000/- per month. Determine the effort required to develop the software product, the nominal development time and productivity using COCOMO. (the constants are a or a1=2.4, b or a2=1.05, c or b1=2.5, d or b2=0.38) [[2.5]

Q.5. (a) Write short notes (any two) [2.5 +2.5]

I. Agile development process
II. Critical path and slack time.
III. Software Project Management Plan (SPMP) document.
IV. Criteria of a good SRS document.

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