AUTUMN END SEMESTER EXAMINATION-2019

7th Semester B.Tech & B.Tech Dual Degree

SOFTWARE PROJECT MANAGEMENT

IT-4027

(For 2017 (L.E), 2016 & 2015 Admitted Batches)

Time: 3 Hours Full Marks: 60

Answer any SIX questions.
Question paper consists of four sections-A, B, C, D.
Section A is compulsory.
Attempt minimum one question each from Sections B, C, D.
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.

SECTION-A

1. Answer the following questions. [2 × 10]

(a) Define software project management. Identify different stakeholders in a software project.

(b) List out the contents of a typical business case in software project management.

(c) Write different factors that contribute to the success of a software project.

(d) Explain the key aspects of project portfolio management.

(e) Define the terms payback period and return on investment.

(f) Write the advantage and disadvantage of spiral model.

(g) Identify different steps in risk planning.

(h) Explain expert judgment technique to estimate project size.

(i) Define critical activity. Identify the steps to determine critical path.

(j) Write the different between functional format and project format team structures.

SECTION-B

2. (a) Write the difference between software projects and other types of projects. Why is the management of a software project is different from management of other type of projects? [4]

(b) As a project manager, compare the following scenario and decide which project will you undertake, based on net profit, payback period and return on investment (ROI). [4]

Year	Cash flow for P1	Cash flow for P2
0	-100000	-120000
1	20000	30000
2	30000	30000
3	40000	30000
4	50000	50000
5	50000	100000

3. (a) Explain prototyping model with a suitable diagram? Write its advantages and disadvantages. [4]

(b) Explain the step wise planning process with a neat diagram. [4]

SECTION-C

4. (a) Calculate the function point metrics for the given scenario: [4]

Parameters	Values	Weighing Factor Complexity
Input	50	20 average (A);30 complex (C)
Output	40	Average (A)
User Inquiries	35	15 simple (S); 20 average (C)
Logical Files	6	2 simple (S); 4 complex (C)
Interfaces	4	Average (A)

The complexity ratings are: input (S-3, A-4, C-6), output (S-4, A-5, C-7), inquiries (S-3, A-4, C-6), files(S-7, A-10, C-

15) and Interfaces (S-5, A-7, C-10). Assume the other 14 adjustment factors are of average complexity i.e. 4.

Suppose that the size of a software product of embedded type, was to be estimated at 100KLOC. Calculate the development effort, development time, staff size and productivity. (a1= 3.6, a2= 1.20; b1=2.5, b2=0.32).

(b) Explain different kind of feasibility aspects which must be carried out by the project manager while doing feasibility study for a software project. [4]

5. (a) Discuss several objectives of activity planning. [4]

(b) Consider a software project scenario that has 7 activities named as A,B,C,D,E,F,G,H,I,J,K, and L. The duration of the activities, in weeks, are 5, 7, 6, 5, 10, 15, 8, 8, 4, 4, 5, and 3 respectively. Tasks B and D can start only when A is completed. Tasks C, F and G can commence only after the completion of task B. Task E can start only after completion of D. Tasks H and J can be initiated only when task G gets over. Task I can be started when task C is completed. Task K can get started only after tasks E and F are over. Again, task L can be started only after the completion of tasks I and H. For the given problem: [4]

6. (a) Suppose you are the project manager of a large software development project. List three common types of risks that your project might suffer. Also, point out the main steps that you follow to effectively manage risks in your project. [4]

(b) Explain different types of contracts. List out the advantages and disadvantages for each one. [4]

SECTION-D

7. (a) List different types of testing techniques available in software development process. Why are the modules [4]

integrated in "one at a time" approach over "one step integration" approach?

(b) Write the difference between chief programmer's team and democratic team. List out advantages and disadvantages for both. [4]

8. (a) Identify the pros and cons of using pair programming over programmers working alone. Based on your analysis, point out if there are any situations where the pair programming technique may not be suitable. [4]

(b) What is software configuration management? What is the use of baseline in software configuration management? How do baseline gets updated to form new baseline? [4]

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