AUTUMN END SEMESTER EXAMINATION-2019
7th Semester B.Tech & B.Tech Dual Degree (Open Elective-II)

SOFTWARE PROJECT MANAGEMENT

IT4027

(For 2017 (L.E), 2016 & Previous 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. List the difference between system software and application software.

(b)   A public library is considering the implementation of a computer-based system to help administer book loans at libraries. Identify the stakeholders in such a project.

(c)   Write the two steps involved in cost-benefit analysis.

(d)   List the important items that a software project management plan (SPMP) document should discuss.

(e)   If the size of a software product, to be developed, is increased by two times then the time required to develop the software will also be doubled. State, if the above statement is TRUE/FALSE. Justify your answer.

(f)   Briefly explain the process of risk management.

(g)   Explain the Chief Programmer team building approach. Write its advantage and disadvantage.

(h) Define is egoless programming? What contribution it makes in creating a motivating development environment?

(i) What is change control? Explain the change control procedure.

(j) What is quality plan? List out the contents of a typical quality plan document.

SECTION-B

2. (a) Distinguish between software product development and outsourced projects. Explain the key ways in which managing an outsourcing project differs from those of a product development project. [4]

(b) A public library is considering the implementation of a computer-based system to help administer book loans at libraries. What might be the objectives of such a project and how might the success of the project be measured in practical terms? [4]

3. (a) Discuss the step wise planning process using a suitable diagram. [2+2]

(b) A company wants to automate its inventory management system which is currently managed manually. The inventory has about 10,000 items. The company intends to award the development of the software to a vendor. The software would have to be transferred to the company in a fully operational mode. To speed up the delivery of software, the vendor would have to create the operational database during the development of the software. This would involve entering the details of the existing items into a CSV (comma separated values) file. After development of the software, the CSV data needs to be imported into the software. After alpha testing, the software would have to be tested in the operational [4]

environment. For this, the software would have to be run along side the manual system at the company for a week. During this time, user training would also have to be conducted.

A. Identify and represent the deliverable using a product breakdown structure (PBS).

B. Develop the product flow diagram.

SECTION-C

4. (a) Suppose you are the manager of a software project. Explain why it would not be proper to calculate the number of developers required for the project as a simple division of the effort estimate (in person-months) by the nominal duration estimate (in months). [4]

(b) Consider a full automated software system whose size has been estimated at 40000 lines of code. Using basic COCOMO, estimate the nominal effort, nominal development time, productivity, and average staff size. [4]

5. (a) The specification of an IT application is estimated as likely to take 2 days to complete, following which work can start on three software modules, M1,M2 and M3. This require 5, 10 and 10 days respectively. M1 and M2 can only be unit-tested together as their functionality is closely associated. This joint testing should take about 2 days. Module C will need 8 days of unit testing. When all unit testing has been completed, integrated system testing will be needed taking a further 3 weeks. This testing will be based on the functionality described in the specification and will need 10 days of planning. [2+2]

For the above discussed scenario:
A. Draw the activity network diagram
B. Identify the critical path and Slack time for all paths.

(b) Explain the basic framework needed for effective risk management. Write about different approach for risk resolution. [4]

6. (a) Schedule slippage is a very common form of risk that almost every project manager has to deal with. Suppose you are the project manager of a medium-sized project. Explain how would you manage the risk of schedule slippage. [4]

(b) A software project is assumed to face some risks named R1, R2, R3. Their probabilities of occurrence 0.2, 0.4, 0.6, respectively. The likely damage due to the said risks are Rs. 40000, Rs. 90000, Rs. 80000. Arrange the risks in decreasing order of their exposure. If a risk reduction strategy that cost Rs. 1000/- is implemented then identify the risks that can be reduced using the adopted risk reduction strategy [4]

SECTION-D

7. (a) Compare and contrast the project format and functional format of organization structure. List out their advantage and disadvantage. [4]

(b) News papers often report on the vast sums of money that are paid to the top executives of many companies. Does this mean that these people are at a low level in the Maslow hierarchy of motivation? Do they really need all this money to be motivated? What do you think the significance of these salaries really is? [4]

8. (a) Explain the testing in V-process model with a diagram. [4]

(b) Explain SEI Capability Maturity Model (CMM) [4]

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