(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0670 | Roll No. [   ]

B. Tech.

(SEM. VIII) EXAMINATION, 2008-09

SOFTWARE PROJECT MANAGEMENT

Time : 3 Hours]   *[Total Marks : 100*

Note : (1) Attempt **all** questions as per directions given thereof.

(2) All questions carry **equal** marks.

(3) Be precise in your answer.

(4) No second answer booklet will be provided.

1   Attempt any **two** of the following :   10×2

(a) It seems odd that cost and schedule estimates are developed during software project planning-before detailed software requirements anlysis or design has been conducted. Why do you think this done? Are there circumstances when it should not be done?

(b) When does the software planning activity start and end in software life cycle? List some important activities that a software project manager performs during software project planning.

(c) Accurate estimation of the problem size is fundamental to satisfactory estimation of effort, time duration and cost of a software project. Justify the statement with suitable example.

2 Attempt any **two** of the following : 10×2

(a) What will be your strategies for a late project means a project behind a schedule. Discuss the answer with full justificaiton.

(b) Many people argue that the term "maintenance" is incorrectly applied to software that the activities asociated with software maintenance are not maintenance at all. What do you think?

(c) Many software projects are so large that a number of software development teams must be formed; recommends a management structure for coordinating multiple teams. What are some of the potential problems that can arise?

3 Attempt any **two** of the following : 10×2

(a) Develop a list of software characteristics that affect the complexity of a program. Prioritize the list.

(b) Write a short note on the set of criteria for comparison and assessment of various software reliability models.

(c) Suppose you have estimated the normal development time of a moderate-sized software product to be 5 months. You have also estimated that it will cost Rs.50,000/- to develop the software product. Now, the customer comes and tells you that he wants you to accelerate the delivery time by 10%. How much additional cost would you charge the customer for this accelerated delivery? Irrespective of whether you take less time or more time to develop the product, you are essentially developing the same product. Why then does the effort depend on the duration over which you develop the product?

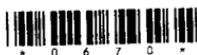4 Attempt any **two** of the following :   **10×2**

(a) How are the software project related parameters such as program length, program vocabulary, program volume, potential minimum volume, effort to develop the project, project development time estimated using analytical estimation technique?

(b) Explain how you ~~~~~~ ̿s that your project is sus ~~~~~~ ᷉ou are the project manager of a large software development project, point out the main steps you would follow to manage risks in your software project.

(c) Suppose you are the project manager of a large software product development team and you have to make a choice between democratic and chief programmer team organizations, which one would you adopt for your team? Explain the reasoning behind your answer.

5 Attempt any **one** of the following :   **20×1**

(a) One of the factors affecting the credibility of the University Examinaiton System is the case with which forged certificates and degrees can be obtained. When a student submit a certificate or a degree for admission to a course in another university or for the purpose of employment, there is no simple way in which the authenticity of the document can be assured. The universities runs into hundreds and number of graduating

students every year. Any effort at pre-checking the validity of the degree obtained from other universities or organizations are bound to fail because time required for such verification would be inadequately large. It is, therefore, proposed to create an authority which will act as an authenticator for all such degrees and certificates. The core of this approach implies electronic publication for all results of all Universities. The virtue of such a system would be that any potential organization, which needs authentication of a student's records from any university, could electronically submit the request and have queries responded in reasonable amount of time. With the above objectives in mind, carry out the following tasks :

(i) Enumerate the various mechanisms, which universities use conventionally to prevent forgery and illegal use of documents.

(ii) Obtain a rough estimate of the size of annual database if the decision to implement electronic publication of results

is to be made mandatory for all universities. State all your assumptions and explain plausibility of your numerical estimates.

(iii) Briefly describe the possible alternative modes of having such information available to the potential users e.g. distribution through CD-ROMS or a network created for this purpose or a mixture of both.

(iv) Projects the possible organizational response of universities, which would be required to implement electronic publication of result, as well as organizations that would be required to electronically verify the qualifications and certificates submitted by students or new recruits.

In order to cope with large number of students and need for greater automation of examination related procedures; the development of question banking is an approach, which is being increasingly adopted.

(b) Mark the following as either true or false. Justify your answer.

   (i) Size of a project, as used in COCOMO is the size of the final executable code in bytes.

   (ii) According to the COCOMO model, cost is the fundamental attribute of a software product, based on which size and effort are estimated.

   (iii) If we increase the size of a software product by two times then the time required to develop that software product would be double.

   (iv) The number of development personnel required for any software development project can be obtained by dividing the total (estimated) effort by the total (estimated) duration of the project.

   (v) For the development of the same product, the larger is the size of a software development team, the faster is the product development. (for simplicity, assume that all enginners are equally proficient and have exactly similar experience).

(vi) As a project manager it would be worthwhile on your part to reduce the project duration by half provided the customer agrees to pay for the increased manpower requirements.

(vii) PERT charts are a sophisticated form of activity chart.