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

PAPER ID : 0670　Roll No.

B. Tech.

(SEM. VIII) THEORY EXAMINATION 2010-11

SOFTWARE PROJECT MANAGEMENT

Time : 3 Hours　　　　　　　　　　　　*Total Marks : 100*

Note :— Attempt **ALL** questions as per directions given thereof. All questions carry equal marks. Be precise in your answer. No second answer booklet will be provided.

1. Attempt any **two** of the followings :—　　(10×2=20)

   (A) It is very important for software developers to build **exactly** the software called for in the system requirements and specifications. Explain why this principle is so important for successful software development.

   (B) The large software project, that you are managing, is doing very well. Your latest estimates predict that your team will finish the project at the end of June 2003, three months ahead of schedule and 15% under budget. You now have to make a choice about what to do in this situation. You have thought of three options :

   　(i)　Finish early in June; release the project team to work on other projects. Give the unused budget back to your boss.

(ii) Use the 3 months and the budget to do more testing on the project to try and find any residual errors.

(iii) Use the 3 months and the budget to improve the internal and external documentation for the project.

Which alternative would you choose ? Justify your answer.

(C) Discuss the advantages and disadvantages of letting people rotate between projects from different application domains as opposed to letting them become true experts in one particular application domain.

2. Attempt any two of the followings :— (10×2=20)

(A) Assume that you are managing a large software project. You thought that the project was making good progress until a simulation appeared to show that the system you were developing would not meet its performance (speed and memory) objectives. Your programming team proposes a *quick fix* to this problem that will significantly *increase* the *coupling* between modules in the system. An alternative solution is to delay completion of the project by six months while your team does a complete redesign of the key data structures. How would you respond to this situation and to your team quick fix proposal ? Justify your answer.

(B) A company is about to release their *major* software product to their *most important* client. You have been

asked to perform the last minute checks that should be done before the product is actually shipped. You have the authority to delay the delivery if you believe the product is "not ready for prime time". What checks would you perform and why ?

(C) Why is *version control* an important issue in the development of large software systems ?

3. Attempt any two of the followings :—   (10×2=20)

(A) Describe some of the factors that make the development of *large software* more difficult that the development of *small software*.

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

(C) Pick a non-developer role (e.g., senior management, customer, support, end-user, sales), and identify from that role's perspective atleast three of the most important attributes of *good* software. Justify your choice of those attributes and explain their importance to your chosen role.

4. Attempt any two of the followings :—   (10×2=20)

(A) Two different project teams are competing for a contract. Team A, which consists of six people, completes the first phase in five months, whereas the four persons team B take six months. Which team would you initially choose for the next phase ? Why would you choose that team ? Why were they able to achieve the presumably superior result ? What additional factors should you consider before making your final choice ?

(B) Describe the benefits of inspections and reviews in a software development cycle. Discuss contributors to effective and ineffective reviews.

(C) List the five CMM levels and describe what aspects of process maturity each level is intended to capture. List some key activities that occur in a software development shop at the various maturity levels.

5. Attempt any two of the followings :— (10×2=20)

(A) Is it useful to incorporate a software metrics program into the development process ? List three advantages, three disadvantages, and defend your position.

(B) Assume that you are managing a large software project. You have 3 sub-managers and 35 developers working for you. Your team has been working on this project for 2 years. You expect that it will take another 2·5 years to finish the project. Another large project has just finished and 2 more sub-managers and 25 more skilled software developers are being transferred to your project. What are the major management issues that you will have to deal with in handling this influx of new people ? How do you think this change will affect progress in your project over the next year ? Explain your answers.

(C) One of the hardest issues in software project management is getting an accurate picture of the *true state* of the project. Assuming that the information you receive from the software developers may not be accurate (i.e. they might lie), what other ways are there to get accurate information on project progress ?