

The Open University of Sri Lanka
Department of Electrical and Computer Engineering

ECI6260 – Software project management

Final Examination – 2010/2011

(Closed Book Test)

Date: 20th March 2011

Time: 9.30 – 12.30 hrs

The question paper is in two parts. The first part (**Part A**) consists of multiple choice questions and carries **60** marks. The second part (**Part B**) is a case study and carries **40** marks.

Part A : Answer all questions. Each answer is given 1 mark. (Total marks 60)

Use the given MCQ answer sheet to answer Part A. Cross the correct answer.

1 The highest point of Maslow's hierarchy of needs is:

- A. physiological satisfaction.
- B. attainment of survival.
- C. need for association.
- D. esteem.

2 Who is ultimately responsible for quality management on the project?

- A. Project engineer
- B. Project manager
- C. Quality manager
- D. Team member

3 A project manager has just been assigned to a new project and has been given the preliminary project scope statement and the project charter. The first thing the project manager must do is:

- A. create a project scope statement.
- B. confirm that all the stakeholders have had input into the scope.
- C. analyze project risk.
- D. begin work on a project management plan.

4 You are taking over a project during the planning process group and discover that six individuals have signed the project charter. Which of the following should most concern you?

- A. Who will be a member of the change control board
- B. Spending more time on configuration management
- C. Getting a single project sponsor
- D. Determining the reporting structure

5 The project manager is making sure that the product of the project has been completed according to the project management plan. What part of the project management process is he in?

- A. Planning
- B. Executing
- C. Monitoring and controlling
- D. Closing

6 All of the following are characteristics of a project EXCEPT:

- A. Temporary
- B. Definite beginning and end
- C. Interrelated activities
- D. Repeats itself every month

7 The project management process groups are:

- A. Initiating, planning, expediting, and control.
- B. Plan, organize, develop, and control.
- C. Plan, do, observe, commit.
- D. Initiating, planning, executing, controlling, and closeout.

8 Which of the following conflict resolution techniques will generate the MOST lasting solution?

- A. Forcing
- B. Smoothing
- C. Compromise
- D. Problem solving

9 Quality is:

- A. meeting and exceeding the customer's expectations.
- B. adding extras to make the customer happy.
- C. the degree to which the project meets requirements.
- D. conformance to management's objectives.

10 A temporary endeavor undertaken to create a new product or service is called a:

- A. New product development.
- B. Project.
- C. Program.
- D. Enterprise.

11 What conflict resolution technique is a project manager using when he says, "I cannot deal with this issue now!"

- A. Problem solving
- B. Forcing
- C. Withdrawal
- D. Compromising

12 The WBS for the project represents:

- A. All the tangible items that must be delivered to the client.
- B. All the work that must be completed for the project.
- C. The work that must be performed by the project team.
- D. All the activities of the project.

13 A project manager is faced with making a decision about a risk that the team has identified. The risk involves the design of a bicycle. It has been found that the neck of the bicycle, where the steering bearing is located and the two supporting bars of the frame come together, will corrode in a high salt environment. If this takes place the neck may fail and injure the rider. The project team decides that the design of the bicycle should be modified by using corrosion resistant materials in the design of the neck. This will eliminate the risk from consideration. This technique is called:

- A. Risk avoidance.
- B. Risk acceptance.
- C. Risk rejection.
- D. Risk deflection.

14 Which phase of the project is likely to have (usually) the greatest amount of its funding spent?

- A. Initiating
- B. Executing
- C. Planning
- D. Closeout

15 A project team has completed and the customer has accepted the completed project scope. However, the lessons learned required by the project management office have not been completed. What is the status of the project?

- A. The project is incomplete because the project needs to be re-planned.
- B. The project is incomplete until all project and product deliverables are complete and accepted.
- C. The project is complete because the customer has accepted the deliverables.
- D. The project is complete because the project has reached the due date.

16 A system development project is nearing project closing when a previously unidentified risk is discovered. This could potentially affect the project's overall ability to deliver. What should be done next?

- A. Alert the project sponsor of potential impacts to cost, scope or schedule.
- B. Qualify the risk.
- C. Mitigate this risk by developing a risk response plan.
- D. Develop a workaround.

17 Extensive use of ---- communication is most likely to aid in solving complex problems.

- A. verbal
- B. written
- C. formal
- D. nonverbal

18 When checking the calendar of a team member to schedule a meeting, you see she has scheduled a meeting with a key stakeholder that you were not informed of. The best approach would be to:

- A. avoid mentioning it to the team member but continue to watch her activities.
- B. notify your boss about the problem.
- C. address the concern with the team member's boss.
- D. address the concern with the team member.

19 A project manager has a problem with a team member's performance. What is best form of communication for addressing this problem?

- A. Formal written communication
- B. Formal verbal communication
- C. Informal written communication
- D. Informal verbal communication

20 Your employee is three days late with a report. Five minutes before the meeting where the topic of the report is to be discussed, she hands you the report. You notice some serious errors in it. What should you do?

- A. Cancel the meeting and reschedule when the report is fixed.
- B. Go to the meeting and tell the other attendees there are errors in the report.
- C. Force the employee to do the presentation and remain silent as the other attendees find the errors.
- D. Cancel the meeting and rewrite the report yourself.

21 You are the project manager for a large project that is completed on time and on budget. The customer and all of the stakeholders are pleased with the results. As a direct result of the successful completion of the project, your manager approves a bonus of \$25,000 to you. There are fifteen members of the project team. One of the people on the project team has been a very low contributor to the project; the other fourteen have all been above standard. What should you do with the money?

- A. Keep the money yourself; you deserve it, and the manager gave it to you.
- B. Divide the money equally among all the team members.
- C. Ask the team members how they would divide the money.
- D. Divide the money equally among the team members except for the substandard team member.

22 Your cost forecast shows that you will have a cost overrun at the end of the project. Which of the following should you do?

- A. Eliminate risks in estimates and re-estimate.
- B. Meet with the sponsor to find out what work can be done sooner.
- C. Cut quality.
- D. Decrease scope.

23 A particular stakeholder has a reputation for making many changes on projects. What is the best approach a project manager can take at the beginning of the project to manage this situation?

- A. Say "No" to the stakeholder a few times to dissuade him from submitting more changes.
- B. Get the stakeholder involved in the project as early as possible.
- C. Talk to the stakeholder's boss to find ways to direct the stakeholder's activities to another project.
- D. Ask that the stakeholder not be included in the stakeholder listing.

24 A major negotiation with a potential subcontractor is scheduled for tomorrow when you discover there is a good chance the project will be cancelled. What should you do?

- A. Do not spend too much time preparing for the negotiations.
- B. Cut the negotiations short.
- C. Only negotiate major items.
- D. Postpone the negotiations.

25 A project manager is preparing the budget for the project. There are several inputs to the budgeting process that the project manager will use. One of the things that the project manager will not use is the:

- A. Cost estimates.
- B. Project schedule.
- C. Cost baseline.
- D. Work breakdown structure.

26 The project status report is an example of which form of communication?

- A. Formal written communication
- B. Formal verbal communication
- C. Informal written communication
- D. Informal verbal communication

27 During what part of the project management process is the project scope statement created?

- A. Initiating
- B. Planning
- C. Executing
- D. Monitoring and controlling

28 You have always been asked by your management to cut your project estimate by ten percent after you have given it to them. The scope of your new project is unclear and there are over 30 stakeholders. Management expects a 25 percent reduction in downtime as a result of the project. Which of the following is the BEST course of action in this situation?

- A. Re-plan to achieve a 35 percent improvement in downtime.
- B. Reduce the estimates and note the changes in the risk response plan.
- C. Provide an accurate estimate of the actual costs and be able to support it.
- D. Meet with the team to identify where you can find 10 percent savings.

29 The project sponsor has just provided the preliminary project scope statement. What is the NEXT thing to do?

- A. Begin to complete work packages
- B. Complete scope verification
- C. Start integrated change control
- D. Start to create management plans

30 Two people are arguing about what needs to be done to complete a work package. If the project manager wants to know what is going on, he/she should pay MOST attention to:

- A. what is being said and when.
- B. what is being said, who is saying it, and the time of day.
- C. physical mannerisms and what is being said.
- D. the pitch and tone of the voices, and physical mannerisms.

31 The skill of listening involves more than just hearing the sounds. One of the characteristics of a good listener is that he or she:

- A. Finishes the speaker's sentences.
- B. Takes good notes.
- C. Repeats some of the things said.
- D. Agrees with the speaker.

32 The project is not completed until:

- A. the project scope is completed, administrative closure is completed and payment is received.
- B. formal acceptance is received, and any other requirements for project closure as stated in the contract are met.
- C. the customer is satisfied and final payment is received.
- D. lessons learned are completed.

33 All of the following are the responsibility of a project manager EXCEPT?

- A. Maintain the confidentiality of customer confidential information.
- B. Determine the legality of company procedures.
- C. Ensure that a conflict of interest does not compromise the legitimate interest of the customer.
- D. Provide accurate and truthful representations in cost estimates.

34 One of the mandatory things that a project manager must have in order to have good team building is:

- A. Commitment from top level management.
- B. Co-location of team members.
- C. Establishment of clear negotiated goals.
- D. Open discussion of poor individual performance.

35 During project executing, a team member comes to the project manager because he is not sure of what work he needs to accomplish on the project. Which of the following documents contain detailed descriptions of work packages?

- A. Work breakdown structure (WBS) dictionary
- B. Activity list
- C. Preliminary project scope statement
- D. Project scope management plan

36 A project manager is in the middle of the executing process of a very large construction project when he discovers that the time needed to complete the project is longer than the time available. What is the BEST thing to do?

- A. Cut product scope.
- B. Meet with management and tell them that the required date cannot be met.
- C. Work overtime.
- D. Determine options for schedule compression and present management with your recommended option.

37 You are a new project manager who has never managed a project before. You have been asked to plan a new project. It would be BEST in this situation to rely on during planning in order to improve your chance of success.

- A. your intuition and training
- B. stakeholder analysis
- C. historical information
- D. configuration management

38 During the project life cycle, in which part of the life cycle will risk be the lowest?

- A. Initiation
- B. Planning
- C. Execution
- D. Closeout

39 A project manager managing any project should perform risk analysis at what stage of the project:

- A. Just before any major meeting with the client.
- B. On a regular basis throughout the project.
- C. Only when justified by the awareness of new risks becoming a possibility.
- D. When preparing the project plan.

40 Lessons learned are BEST completed by:

- A. Project manager
- B. Team
- C. Sponsor
- D. Stakeholders

41 The processes required to ensure that the project will satisfy the needs for which it was undertaken include all activities of the overall management function that determines the quality policy, objectives, and responsibilities and implements them by means such as quality planning, quality control, quality assurance, and quality improvement, within the quality system. This is called:

- A. Quality assurance.
- B. Quality control.
- C. Quality planning.
- D. Quality management.

42 Work results, quality checklists, operational definitions, and the management plan are:

- A. Inputs to quality control.
- B. Outputs from quality control.
- C. Inputs to quality assurance.
- D. Outputs from quality assurance.

43 The primary benefits of meeting quality requirements are:

- A. Cost are reduced, delays are reduced, customer satisfaction improves, and profits go up.
- B. Cost are reduced, delays are increased, market share increases, and profits go up.
- C. Cost are increased, delays are reduced, capital expenditures go down, and market share increases.
- D. Cost are reduced, delays are increased, customer satisfaction improves, and profits are maintained.

44 Project quality assurance:

- A. Includes policing the conformance of the project team to specs.
- B. Provides the project team and stakeholders with standards, by which the project performance is measured.
- C. Is a managerial process that defines the organization, design, resources, and objectives of quality management.
- D. Provides confidence that the project will satisfy relevant quality standards.

45 In which project management process group is the detailed project budget created?

- A. Initiating
- B. Before the project management process
- C. Planning
- D. Executing

46 The three principal interests in maintaining good document control are:

- A. Timely communication, collection of performance appraisal data, and assuring proper disposal of sensitive documents.
- B. Timely communication, maintaining proper approvals, and communication cost control.
- C. Effective communication, ability to reconstruct why decisions were made, and historical value.
- D. Security, change management, and procedural documentation.

47 In the communications model, communications between the sender and the receiver often are affected by communications barriers. These include all of the following except:

- A. Cultural differences.
- B. Differences in motivation.
- C. Educational differences.
- D. Lack of a communications device.

48 The project status meeting is not going well. Everyone is talking at the same time, there are people who are not participating and many topics are being discussed at random. Which of the following rules for effective meetings is not being adhered to?

- A. Demonstrate courtesy and consideration of each other, control who is allowed to speak.
- B. Schedule meetings in advance.
- C. Have a purpose for the meeting, with the right people in attendance.
- D. Create and publish an agenda and a set of rules for controlling the meeting.

49 A project manager has six people on a team. It is important that each of them communicates information to each of the others. How many lines of communication are there in this group of people?

- A. Fifteen
- B. Twenty-one
- C. Seven
- D. Six

50 You are the project manager for a high visibility project. The margin on this project is low, and it is extremely important that the cost estimates for the work on the project be accurate. While reviewing the cost estimates for this project you notice that one of the cost estimates for an element in the WBS is 10% higher than two previous projects for very similar work. What should you do?

- A. Accept the estimate because you trust all of the people on your project team, and they are responsible for estimates.
- B. Reduce the estimate and add the additional budget to the management reserve.
- C. Ask the person responsible for the estimate to explain the difference and bring supporting information to you.
- D. Reduce the estimate and add the additional budget to the contingency reserve.

51 A team member notifies the project manager that the activities comprising a work package are no longer appropriate. It would be BEST for the project manager to be in what part of the project management process?

- A. Corrective action
- B. Integrated change control
- C. Monitoring and controlling
- D. Project closing

52 A project is plagued by changes to the project charter. Who has the primary responsibility to decide if these changes are necessary?

- A. Project manager
- B. Project team
- C. Sponsor
- D. Stakeholders

53 During a project team meeting, a team member suggests an enhancement to the scope that is beyond the scope of the project charter. The project manager points out that the team needs to concentrate on completing all the work and only the work required. This is an example of:

- A. change management process.
- B. scope management.
- C. quality analysis.
- D. scope decomposition.

54 During activity definition, a team member identifies an activity that needs to be accomplished. However, another team member believes that the activity is not part of the project as he interprets the project scope statement. What is the thing for the project manager to do?

- A. Try to build a consensus of the team.
- B. Make the decision himself.
- C. Ask the sponsor for clarification.
- D. Ask senior management for clarification.

55 During project executing, a large number of changes are made to the project. The project manager should:

- A. wait until all changes are known and print out a new schedule.
- B. make approved changes as needed, but retain the schedule baseline.
- C. make only the changes approved by management.
- D. talk to management before any changes are made.

56 A major negotiation with a potential subcontractor is scheduled for tomorrow when you discover there is a good chance the project will be cancelled. What should you do?

- A. Do not spend too much time preparing for the negotiations.
- B. Cut the negotiations short.
- C. Only negotiate major items.
- D. Postpone the negotiations.

57 A project manager does not have much time to spend planning before the mandatory start date arrives. He therefore wants to move through planning as effectively as possible. Which of the following would you recommend?

- A. Make sure you have a completed preliminary project scope statement and then start the WBS.
- B. Create an activity list before creating a network diagram.
- C. Document all the known risks before you document the high-level assumptions.
- D. Finalize the quality management plan before you determine quality metrics.

58 Effective software project management focuses on four P's which are

- A. people, performance, payoff, product
- B. people, product, performance, process
- C. people, product, process, project
- D. people, process, payoff, product

59 One of the best ways to avoid frustration during the software development process is to

- A. give team members more control over process and technical decisions.
- B. give team members less control over process and technical decisions.
- C. hide bad news from the project team members until things improve.
- D. reward programmers based on their productivity.

60 How does a software project manager need to act to minimize the risk of software failure?

- A. double the project team size
- B. request a large budget
- C. request to double the time needed
- D. track progress

Part B : Total marks possible is 40.**Business Challenge**

In order to cut operating costs and increase profitability, Financial Research Inc. decided to optimize the business processes associated with storing and processing information about clients, their financial transactions, and investment portfolios.

Financial Research Inc. had previously used stand-alone VB-based desktop software with limited reporting capabilities. Although the system automated some operations, a lot of man-hours were still required for processing client data.

Financial Research Inc. required a comprehensive CRM solution to:

- A. Automate routine operations associated with processing client information, minimize duplication of information, and reduce data entry
- B. Decrease operational and support costs
- C. Enhance analysis, forecasting, and reporting capabilities
- D. Enable managers to access and manage client investment portfolios via the Internet

Software Solution

Axmor Java programmers ported the application from VB to Java to enable Web access and improve performance.

Portfolio managers can now manage client accounts from any Internet-connected PC using Web interface. The new CRM solution sharply decreased operational costs primarily by reducing data entry, duplication of information, and the reporting of production cycle time.

During the project, Axmor Java programmers performed the following tasks:

- A. Software redesign

All these components reside on different networks. To ensure secure data transfer Axmor Java EE programmers completely re-designed the system architecture. An open-source JBoss Application Server and MS SQL database were used as a development platform to deliver an effective, yet inexpensive CRM solution. To address Financial Research Inc.'s concern of decreasing the software support costs, only standard Java EE patterns were used. As a result, the number of system failures sharply dropped, while maintenance costs decreased.

- B. Complex financial calculations

The application uses complex financial formulas and dependencies to calculate the client's profits and percentages. Axmor Java programmers gained an understanding of the formulas and designed software algorithms that correctly implement this functionality.

- C. Integration of disparate systems

The application uses data from different sources. Axmor had to effectively integrate the developed solution with software of Financial Research Inc.'s business partners - in one case, an MS Access database. To integrate it seamlessly, no standard patterns were available. Axmor's Java programmers designed an advanced solution to solve this task.

- D. Integration with MS Excel

The reports are visualized using Excel templates. The user can customize their look and feel by using MS Excel functions. Axmor also powered the inherent Excel functions with advanced chart generation capabilities.

E. Advanced security and user management

The software system is secure, and accessible only by authorized users. Axmor's Java programmers implemented a flexible user administration to assign different access rights to a single user or group. Also, audit functions were added.

The developed CRM solution brought the company to a new level of customer relationship management. Ongoing cooperation between Axmor Software and Financial Research Inc. allows constant enhancement of the system's functionality and improvement of the reporting capabilities of the application.

Based on the above scenario answer following questions.

1. Identify the project scope
2. Identify the technology stack
3. Create a WBS and perform a high level estimate
4. Create a Gantt Chart using the WBS