THE OPEN UNIVERSITY OF SRI LANKA

Faculty of Engineering Technology
Department of Electrical & Computer Engineering
Bachelor of Software Engineering

00056

FINAL EXAMINATION – (2014/2015)

ECI6260 – Software Project Management

CLOSED BOOK EXAM

Time Allowed: **3 hours**

Date: 6 September 2015 **Time: 0930 – 1230 hours**

INSTRUCTIONS TO CANDIDATES

1. This question paper contains ten (10) questions in **PART A** and six (06) questions in **PART B.**
2. Total no of pages of this question paper is eight (08).
3. Answer **ALL** questions in **PART A** using the attached MCQ answer sheet.
4. Attach this MCQ answer sheet with your *PART B* answer scripts.
5. Answer **any FOUR** (04) questions from **PART B**.
6. Clearly state all your assumptions (if any).

Continued...

PART A:

Answer ALL questions

1. An investment involves an initial outlay of Rs. 100,000 and cash flows of Rs. 40,000 in each of the following 5 years. The rate of return required is 15 per cent per annum. What is the net present value of the project?
   a. Rs. 34,086
   b. Rs. 134,080
   c. Rs. 210,150
   d. Rs. 100,000

2. The customer wants to make a major change in the project scope when project is mostly complete. The project manager should,
   a. Make the change
   b. Inform the customer of the impact of the change
   c. Refuse the change
   d. Complain to management

3. What does having a project charter implies for the project managers?
   a. Describes the details of what needs to be done
   b. Describes the names of all team members
   c. Gives the project manager authority
   d. Describes the project's history

4. You are asked to take over a project with lot of pending scope change requests. The most useful document that can help assess the change impact is
   a. Scope statement
   b. WBS
   c. Project Plan
   d. Scope Management Plan

5. Team members are arguing about the location of specification limits on a control chart. The discussion is becoming heated when the project manager walks in and says, "It seems that the real problem here is that we do not have enough information about the customer's specifications". This is an example of:
   a. asserting the project manager's authority
   b. problem solving
   c. compromising.
   d. withdrawal.

6. Which motivational theory says that working conditions, salary and relationships at work do not improve motivation?
   a. Maslow
   b. Deming
   c. McGregor
   d. Herzberg

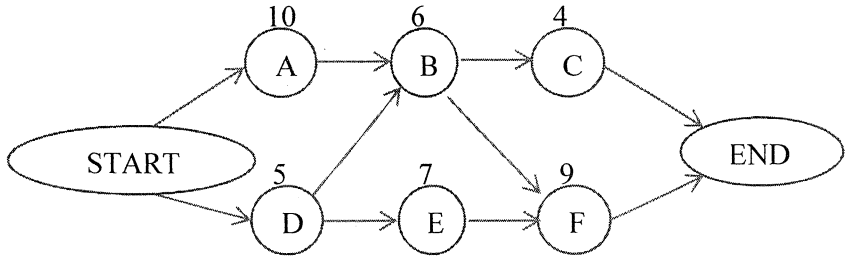
7. During communication the use of _____ is a means of giving feedback to the speaker by rephrasing the speaker's word to ensure that there is a good understanding of the message being sent.

a. active listening
b. filtering
c. graphics
d. visual ,audio ,and tactile

8. Which of the following statement is true?

a. PERT does not show the critical path but CPM does.
b. Both PERT and CPM are duration estimates.
c. PERT allows for probabilistic sequencing that CPM can't provide.
d. CPM provides more accurate duration estimate than PERT.

9. You are the project manager for a project with the following network diagram. According to the diagram, which path is the critical path?



a. D-B-C
b. D-E-F
c. A-B-C
d. A-B-F

10. Which of the following activities does not have a float?

a. A
b. D
c. E
d. C

[2 x 10 = 20 Marks]

PART B:

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Answer any FOUR (04) questions.

Read the following description about the failure in President Barak Obama's Healthcare plan and answer the questions given below:

5 lessons IT leaders can learn from Obamacare rollout mistakes

There's still plenty of disagreement about the ideology, efficacy and even legality of the Affordable Care Act (i.e. Obamacare), but there's broad consensus that the launch of HealthCare.gov website was a dismal failure. And like so many tech rollout disasters, this one should serve as a teachable moment that helps other organizations avoid making similar mistakes.

HealthCare.gov is the federal government's health insurance marketplace portal, designed to serve millions of uninsured people in 36 states. The site was built by CGI Federal, a Canadian company that is a federal IT contractor. The site crashed soon after its October 1 launch and has been plagued by technical problems. It has been unable to keep up with demand, and most users cannot complete enrollment.

According to CBS News, "The White House contended that this was a sign that demand was high: 'These bugs were functions of volume,' said U.S. Chief Technology Officer Todd Park. 'Take away the volume and it works.'"

As of November 14, CBS News said the White House reported that the site could process 17,000 registrations an hour. With 30 million Americans potentially needing to use the site, it would take two and a half months to enroll everyone with the site operating 24/7. In the first month, only 106,000 people enrolled.

When asked about the problems with the site, Rachel Maisier, spokeswoman for the Centers for Medicare and Medicaid Services (CMS), which oversees the site, declined to answer specific questions and instead referred to press releases with directions for using the site. Maisier said, "The total obligation is $630 million for the IT system and we have spent $174 million of that total obligation. "

Tech Pro Research turned to IT experts to glean wisdom from the failures of the HealthCare.gov rollout. The consensus is that the five key things that other companies can learn from this site's failure include the following:

- *If you're going to launch a new website, decide whether to use in-house talent or outsource. If you opt to outsource, hire a good contractor.*
- *Follow the right steps to hire the best vendor for the project, and properly manage the relationship.*
- *Have one person in charge of the project with absolute veto power.*
- *Do not gloss over any problems along the way. Be open and honest about the progress of the project. And test the site.*
- *Be ready for success or failure. Hope for the best but prepare for the worst and have guidelines to manage any potential failure.*

The project, overall, was mismanaged. That has been obvious from the news reports. Paula Tompkins, founder and CEO of Dearborn, Mich.-based ChannelNet, said, "Management always seems to underestimate the complexity of getting systems to interact in a consistent and usable fashion. I have been involved in many large scale

(enterprise) technology based projects that have been mis-managed. I always recommend that a company doesn't bite off more than it can chew. You need to be realistic about what can be accomplished in the time and for the budget available."

[Source: http://www.techproresearch.com/article/5-lessons-it-leaders-can-learn-from-obamacare-rollout-mistakes/]

Question 1

(a) Propose how the effective use of an appropriate project management tool could have helped CGI Federal manage the HealthCare.gov project, in each stage of the project life cycle.

[4 Marks]

(b) If you were the project manager for the project, explain how you would have approached the construction of HealthCare.gov portal in order to avoid the failure. Explain different documents that you would have produced along the way to facilitate the process.

[8 Marks]

(c) As a project management professional, what would you recommend as the best Software Development Methodology to implement HealthCare.gov portal? Justify why you have selected this methodology over other similar methodologies.

[8 Marks]

Question 2

(a) IT Experts who analysed HealthCare.gov's failure have identified five key things that other companies can learn from. Identify the items where the cause of the failure could have been related to a problem in Communication? Justify your answer.

[8 Marks]

(b) Describe different types of networks for communication that the Company may have used to avoid the problems identified in part (a). Your answer should relate to the case of HealthCaregov. [8 Marks]

(c) Are there communication network type(s) that could have negatively affected the teams during the development of the portal site? Elaborate your answer.

[4 Marks]

Question 3

(a) Why do conflicts happen in project teams?

[3 Marks]

(b) What are the major consequences of conflicts in a project team?

[3 Marks]

(c) Briefly describe 4 different techniques that can be used to deal with conflicts.

[6 Marks]

(d) Which conflict resolution technique would you use in the following situation? Explain why.

The project status meeting should have ended several minutes ago but as usual, two primary stakeholders are in a heated battle. You realize the only way to end the conflict of the day is to emphasize their areas of agreement. Solutions proposed by both of them will work and now it is important to maintain harmony and create goodwill between the parties.

[8 Marks]

Question 4

(a) Identify and briefly describe which motivational theory best explains each of the following statements:

i. People cannot ascend to the next level of needs until the levels below have been fulfilled

ii. A project manager believes all employees are inherently lazy persons.

iii. Employees believe that success is achievable, they will be rewarded and the reward is something they want.

[4 x 3 = 12 Marks]

(b) Jathika Surakum is an insurance company and has a staff turn over of 24% compared to its competitor which has a staff turnover of 6%. The pay levels of the two companies are similar. The new manager of Jathika Surakum wants to reduce the staff turn over by finding ways to motivate the staff. He has requested your services to formulate a plan. Write a memo that outlines different actions the manager can take to improve the situation. Justify why you believe these actions will solve the problem. Your memo should not exceed one page.

[8 Marks]

Question 5

Read the following description to answer the questions (a) – (d).

The owner of a shoe shop is planning another branch and has to decide between two new locations that involve large capital investments – the business cannot afford both of them. He has forecast the following annual net cash flows for these two locations. These forecasts are based on market research and cost estimated. The cash flow are as follows.

Year	Option 1 (in SLR)	Option 2 (in SLR)
0	-1,200,000	-1,200,000
1	300,000	600,000
2	400,000	500,000
3	500,000	300,000
4	600,000	200,000
5	500,000	500,000

(a) Briefly explain the following terms:
   (i) Discount rate in Net Present Value method of project evaluation
   (ii) Net Present Value
   (iii) Payback Period

[2 x 3 = 6 Marks]

(b) Calculate the simple payback period for both projects. Comment on your results.

[5 Marks]

(c) Calculate the net present value of both locations at a discount rate of 10%. Comment on your results.

[5 Marks]

(d) Using your calculations, recommend a suitable investment option. Justify your answer.

[4 Marks]

Question 6

(a) What are the main steps involved in using the Critical Path Method (CPM) for project planning? [4 Marks]

"Pinthura Photos" is a medium sized photograph processing firm. It operates on two sites in Sri Lanka. After considerable consultation with employees, it is planning to close one of these sites, at Kandy and to concentrate film processing at its Colombo branch. The managers of the company want to make sure that the closure is carefully planned to reduce the adverse effect on production and customer delivery times. A project team has been drawn from all levels of the company to carry out this plan. The team has been offered a bonus, if it can complete the task in 15 working days.

Closing the factory involved a number of activities are given in table 1.Use this information, to answer questions (b) to (e). Assume all tasks will start as soon as possible:

Task	Description	Duration (days)	Predecessor/s
A	End processing in Kandy, run down stocks of material	2	
B	Dismantle machinery	4	
C	Knock out doorway to allow machinery to be moved	2	A
D	Pack office equipment	2	A
E	Transportation	3	A
F	Suspend processing at Colombo site	8	C
G	Assemble machinery transported from Kandy	3	D
H	REorganise production facilities at Colombo site	2	B,E
I	Test new integrated processing system	2	H

Table 1: Activities involved in a project to develop and market a product

(b) Draw a network diagram to represent the project based on following information. **[6 Marks]**

- A is the start of the project
- B,C and D cannot start until A is complete
- E follows B,C, and D
- F has no proceeding activity
- F must be completed before I can complete
- G and H follow E
- I follows G and H

(c) Identify the critical path. **[3 Marks]**

(d) Calculate the total duration of the project. **[2 Marks]**

(d) Explain why the critical path must be supervised carefully **[2 Marks]**

(e) Calculate all free and total floats for the non-critical activities **[3 Marks]**

--- The End ---