JUNE 2013 EXAMINATION

DATE: 14 JUNE 2013

TIME: 09H00 – 11H00       TOTAL: 100 MARKS
DURATION: 2 HOURS         PASS MARK: 40%

(OX-98)

PROJECT MANAGEMENT TECHNIQUES

THIS EXAMINATION PAPER CONSISTS OF 3 SECTIONS:

SECTION A: CONSISTS OF:
(i) 10 MULTIPLE-CHOICE QUESTIONS (10 MARKS)
(ii) 10 TRUE OR FALSE QUESTIONS (20 MARKS)
ANSWER ALL THE QUESTIONS

SECTION B: CONSISTS OF 4 SHORT QUESTIONS
ANSWER ANY TWO OF THE QUESTIONS (20 MARKS)

SECTION C: CONSISTS OF 2 LONG ANSWER QUESTIONS
ANSWER BOTH QUESTIONS (50 MARKS)

INSTRUCTIONS:

1. Read the following instructions carefully before answering the paper, as failure to act upon them will result in a loss of marks.
2. Write your answers in your answer book, which is provided in the exam.
3. Ensure that your name and student number are clearly indicated on your answer book.
4. Write your answers in either blue or black ink in your answer book.
5. Read each question very carefully before you answer it and number your answers exactly as the questions are numbered.
6. Begin with the question for which you think you will get the best marks.
7. Note the mark allocations for each question – give enough facts to earn the marks allocated. Don't waste time by giving more information than required.
8. You are welcome to use diagrams to illustrate your answers.
9. Please write neatly – we cannot mark illegible handwriting.
10. Any student caught cheating will have his or her examination paper and notes confiscated. The College will take disciplinary measures to protect the integrity of these examinations.
11. If there is something wrong with or missing from your exam paper or your answer book, please inform your invigilator immediately. If you do not inform your invigilator about a problem, the College will not be able to rectify it afterwards, and your marks cannot be adjusted to allow for the problem.
12. This paper may be removed from the examination hall after the examination has taken place.
SECTION A (30 MARKS)

ANSWER ALL THE QUESTIONS

(i) MULTIPLE-CHOICE QUESTIONS

Choose the correct option for each of the following. Write only the question number and your chosen answer. For instance, if you think that the correct answer for number 1 is (a), then write it as 1. (a).

1. A critical element of project management is:
   (a) leading.
   (b) time.
   (c) controlling.
   (d) planning.

2. Project management techniques were applied:
   (a) just before the second world war.
   (b) during the building of the pyramids of Egypt.
   (c) in the first world war when Henry Gantt made diagrams of projects.
   (d) during the building of the great wall of China.

3. The organisational structure for project management is similar to:
   (a) a functional structure.
   (b) a matrix structure.
   (c) a line structure.
   (d) a pure project structure.

4. Which one of the following is a disadvantage of a project management structure?
   (a) lines of communication are short
   (b) motivation to do the task is high
   (c) a project can be approached holistically
   (d) there is no guarantee of work

5. Which one of the following is one of the main phases of a project?
   (a) the design phase
   (b) the commissioning phase
   (c) the evaluation phase
   (d) the planning phase

6. The third practical step in project management is:
   (a) to define the project.
   (b) to plan the project.
   (c) to choose the project team.
   (d) to appoint the project manager.
7. The span of control under the chair of the project manager according to theory should be:
   (a) between five and seven.
   (b) not more than seven.
   (c) between five and ten.
   (d) dependent on the size of the project.

8. The method used to assign activities to the responsible people is called:
   (a) a Gantt chart.
   (b) a network diagram.
   (c) a work breakdown structure.
   (d) a baseline plan.

9. Which one of the following is a useful monitoring tool for project managers?
   (a) a work breakdown structure
   (b) a PERT chart
   (c) a resource plan
   (d) a scheduling chart

10. The stage of the project management life cycle in which scheduling is done is known as:
    (a) the initiation stage.
    (b) the planning stage.
    (c) the implementation stage.
    (d) the close-out stage.

(ii) **TRUE OR FALSE QUESTIONS**

Indicate whether the following statements are true or false. Motivate all your answers.

1. The network diagram path with the longest duration is the critical path.

2. The law of project management is when a project team detests progress reporting because it so vividly manifests the progress made.

3. The 8 / 80 rule states that if a task is shorter than eight hours or longer than 80 hours, it should be adjusted.

4. A resource plan is a useful tool that the project team can use to convert project plans into monetary or resource terms.

5. A lead is a relationship that allows the successor task to start before the predecessor task has finished.

6. Benchmarking is used to identify best practices.

7. PERT refers to the technique used to work out contingency plans.
8. In a partnership or joint venture, the contractor takes sole ownership of the risks and benefits of the project.

9. The sponsor's primary contribution to a project is authority.

10. Scope management is the key tool used to subdivide the scope of work into manageable work packages. [10 × 2 = 20]
SECTION B: SHORT QUESTIONS (20 MARKS)

ANSWER ANY TWO OF THE QUESTIONS

QUESTION 1
(a) Name the main components of the risk management model. (4)
(b) What is a limiting factor of brainstorming workshops? (1)
(c) Identify the purpose of project progress meetings. (5) [10]

AND / OR

QUESTION 2
(a) Briefly explain what is meant by an s-curve. (2)
(b) Give two reasons why you would schedule a project workshop. (2)
(c) List the four leadership styles you can apply in decision-making. (4)
(d) Identify what will determine the frequency of project meetings. (2) [10]

AND / OR

QUESTION 3
Discuss the use of money as a reward and an incentive. [10]

AND / OR

QUESTION 4
Explain how a supervisor can control direct labour costs. [10]
QUESTION 1

ABC Enterprises is a major developer who has secured a development project. They are currently developing the project plan and have now finalised the preferred logical relationships in respect of the key activities as well as the planned duration of each activity.

<table>
<thead>
<tr>
<th>Preceding activity</th>
<th>Succeeding activity</th>
<th>Activity duration (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>start</td>
<td>task 1</td>
<td>2</td>
</tr>
<tr>
<td>task 1</td>
<td>task 2</td>
<td>1</td>
</tr>
<tr>
<td>task 1</td>
<td>task 3</td>
<td>2</td>
</tr>
<tr>
<td>task 1</td>
<td>task 4</td>
<td>1</td>
</tr>
<tr>
<td>task 2</td>
<td>task 5</td>
<td>2</td>
</tr>
<tr>
<td>task 3</td>
<td>task 6</td>
<td>4</td>
</tr>
<tr>
<td>task 4</td>
<td>task 7</td>
<td>2</td>
</tr>
<tr>
<td>task 5</td>
<td>task 8</td>
<td>2</td>
</tr>
<tr>
<td>task 6</td>
<td>task 8</td>
<td></td>
</tr>
<tr>
<td>task 7</td>
<td>task 8</td>
<td></td>
</tr>
</tbody>
</table>

The managing director wishes to be informed what the shortest possible time would be in which the project can be completed.

**You are required to do the following:**

Draw the network diagram indicating the critical path for the completion of the project in the shortest possible time. You need to establish the early start, late start, early finish and late finish for each activity.

**Note:**
- You do not need to draw a bar chart or resource histogram.
- Use the following activity box and calculations for the time management technique:

<table>
<thead>
<tr>
<th>ES</th>
<th>EF</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>Dur</td>
</tr>
<tr>
<td>LS</td>
<td>LF</td>
</tr>
</tbody>
</table>

EF = ES + Duration – 1
LS = LF – Duration + 1
F = LS – ES
QUESTION 2

You are the project manager XYZ Enterprises. This company's income is derived from the development and building of housing complexes in a secure environment.

Using the work breakdown structure, the company identified the following activities for the project:

<table>
<thead>
<tr>
<th>Activity number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>develop project proposal</td>
</tr>
<tr>
<td>300</td>
<td>develop detail schedules</td>
</tr>
<tr>
<td>400</td>
<td>award contracts</td>
</tr>
<tr>
<td>500</td>
<td>produce checklist for site inspections</td>
</tr>
<tr>
<td>600</td>
<td>perform a viability study</td>
</tr>
<tr>
<td>700</td>
<td>do a WBS</td>
</tr>
<tr>
<td>800</td>
<td>procure equipment and services</td>
</tr>
<tr>
<td>900</td>
<td>inspect and rectify problems</td>
</tr>
<tr>
<td>101</td>
<td>identify stakeholders</td>
</tr>
<tr>
<td>201</td>
<td>draw a network diagram</td>
</tr>
<tr>
<td>301</td>
<td>develop housing complex</td>
</tr>
<tr>
<td>401</td>
<td>hand over project to owner</td>
</tr>
</tbody>
</table>

(a) To increase the management and control of the project, XYZ Enterprises requires that you indicate the following in a table format:

(i) the phases in which these activities should be performed;
(ii) the required input of each phase;
(iii) the required output of each phase and;
(iv) where each activity fits into the process.

Use the following suggested format for the table:

<table>
<thead>
<tr>
<th>Phase</th>
<th>Phase</th>
<th>Phase</th>
<th>Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>Input</td>
<td>Input</td>
<td>Input</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Process</th>
<th>Process</th>
<th>Process</th>
<th>Process</th>
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</thead>
<tbody>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Output</th>
<th>Output</th>
<th>Output</th>
<th>Output</th>
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</thead>
<tbody>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>
(b) Advise XYZ Enterprises on the method they should apply to shorten the duration of the project (3)

(c) Give an example of the method identified above, using the information in the case study. (2) [25]

Section A: 30 marks
Section B: 20 marks
Section C: 50 marks
TOTAL: 100 MARKS