UNIVERSITI UTARA MALAYSIA

FINAL EXAM
SECOND SEMESTER SESSION 2010/2011

**INSTRUCTION:**

1. This exam paper contains TWELVE (12) questions in Section A and FOUR (4) questions in Section B in THIRTEEN (13) printed pages excluding the cover page.

2. Answer ALL QUESTIONS in the space provided.

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DO NOT OPEN THIS EXAMINATION PAPER UNTIL INSTRUCTED
SECTION A: STRUCTURED QUESTIONS (56 MARKS)

1. Explain briefly the project life cycle and the phases involved with the help of an example.  

   (5 marks)

2. Explain with the help of a diagram the concept of triple constraints and its effect on project.  

   (4 marks)
3. Explain briefly the **FOUR (4)** roles of a project manager. (4 marks)

4. Name and briefly describe the **FIVE (5)** steps for estimating the cost of a particular activity or task that has an estimated duration. (5 marks)
5. Name and briefly describe FIVE (5) characteristics of a good project metric. 

(5 marks)

6. List the steps involved in developing a business case. 

(4 marks)
7. Explain briefly the FIVE(5) knowledge areas of project management. 

(5 marks)

8. Explain briefly the FOUR(4) cash flow model that are used to analyze alternatives in a project.

(4 marks)
9. List what should be included in a project charter document.  

(6 marks)

10. Explain briefly the steps involved in the project planning framework  

(6 marks)
11. Explain briefly the **THREE(3)** types of project organizational structures.  

(3 marks)

12. Briefly explain the **FIVE(5)** questions that should be addressed in a risk management plan.  

(5 marks)
SECTION B: (44 MARKS)

PROBLEM 1

Assuming a discount rate of EIGHT(8) percent. The development of a Student Attendance System is expected to cost RM200,000 and will be completed in the current year (year 0). In addition, over the following years the project’s benefits will provide inflow of cash, while the cost to build, maintain, and support this application will require outflows of cash. The expected cash flows for the next five years are as shown in the table below:

<table>
<thead>
<tr>
<th></th>
<th>Year 0(RM)</th>
<th>Year 1(RM)</th>
<th>Year 2(RM)</th>
<th>Year 3(RM)</th>
<th>Year 4(RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cash Inflows</td>
<td>0</td>
<td>150,000</td>
<td>200,000</td>
<td>250,000</td>
<td>300,000</td>
</tr>
<tr>
<td>Total Cash Outflows</td>
<td>200,000</td>
<td>85,000</td>
<td>125,000</td>
<td>150,000</td>
<td>200,000</td>
</tr>
<tr>
<td>Net Cash Flow</td>
<td>(200,000)</td>
<td>65,000</td>
<td>75,000</td>
<td>100,000</td>
<td>100,000</td>
</tr>
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</table>

Calculate the NPV of the project. What would you conclude from the result?

(8 marks)
PROBLEM 2

Suppose that you had a project that was targeted to finish in 12 months at a cost of RM60,000. After 3 months, the EV statistics is as shown below:

<table>
<thead>
<tr>
<th>Month</th>
<th>Planned Value(PV)</th>
<th>Actual Cost(AC)</th>
<th>Earned Value(EV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>RM5,000</td>
<td>RM5,000</td>
<td>RM3,000</td>
</tr>
<tr>
<td>February</td>
<td>RM15,000</td>
<td>RM10,000</td>
<td>RM12,000</td>
</tr>
<tr>
<td>March</td>
<td>RM40,000</td>
<td>RM30,000</td>
<td>RM25,000</td>
</tr>
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</table>

a) Compute the Cost Variance (CV).  

b) Compute the Schedule Variance (SV).  

c) Compute the Cost Performance Index (CPI).  

d) Compute Schedule Performance Index (SPI).  

e) Calculate Estimate at Completion (EAC).
f) Calculate Estimated Time to Complete. (1 mark)

g) Using cost information from the above questions, draw a graph to represent EV, PV, and AC. Explain what control actions are necessary to manage the project's performance based on your analysis of the data. (6 marks)
PROBLEM 3

The specification of a Student Attendance System is estimated as likely to take two weeks to complete. When this activity has been completed, work can start on three software modules A, B, and C. Design and coding of the modules will need 5, 10, and 10 respectively. Module A and B can only be unit-tested together as their functionality is closely associated. This joint testing should take two weeks. Module C will need eight days of unit testing. When all unit testing has been completed, integrated system testing will be needed, taking a further three weeks. This testing will be based on the functionality described in the specification and will need ten days of planning.

a) Draw the activity network for the above scenario. (5 marks)
b) For each activity, derive the earliest and latest start dates, and the earliest and latest finish dates.

(5 marks)
c) What is the duration of the project? (2 marks)

d) If only two software developers were available for the design and coding modules, what effect would this have on the project duration? (2 marks)
PROBLEM 4

Suppose your college is considering a new project that would involve developing an information system that would allow all employees and students/customers to access and maintain their own human resources-related information, such as address, marital status, tax information, and so on. The main benefits to the system would be a reduction in human resources personnel and more accurate information. For example, if an employee, student, or customer had a new telephone number or email address, he or she would be responsible for entering the new data in the new system. The new system would also allow employees to change their tax or association fees contributions. Identify five potential risks for this project, being sure to list some negative and positive risks. Provide a detailed description of each risk and propose strategies for addressing each risk.

(10 marks)

END OF QUESTION