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UNIVERSITI SAINS MALAYSIA

First Semester Examination  
Academic Session 2010/2011

November 2010

**EPE 431/3 – Project Management**  
***Pengurusan Projek***

Duration : 3 hours  
*Masa : 3 jam*

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**INSTRUCTIONS TO CANDIDATE:**  
**ARAHAN KEPADA CALON:**

Please check that this paper contains **FIVE (5)** printed pages and **FIVE (5)** questions before you begin the examination.

*Sila pastikan bahawa kertas soalan ini mengandungi **LIMA (5)** mukasurat bercetak dan **LIMA (5)** soalan sebelum anda memulakan peperiksaan.*

Answer **ALL** questions.  
*Jawab **SEMUA** soalan.*

You may answer all questions in **English** OR **Bahasa Malaysia** OR a combination of both.  
*Calon boleh menjawab semua soalan dalam **Bahasa Malaysia** ATAU **Bahasa Inggeris** ATAU kombinasi kedua-duanya.*

Answer to each question must begin from a new page.  
*Jawapan untuk setiap soalan mestilah dimulakan pada mukasurat yang baru.*

In the event of any discrepancy found in examination question, the English version shall be used.

*Sekiranya terdapat sebarang percanggahan pada soalan peperiksaan, versi Bahasa Inggeris hendaklah diguna pakai.*

- Q1. [a] Describe the essential components of corporate strategy and the role of projects in it.**

*Huraikan komponen-komponen yang penting bagi strategi korporat dan peranan projek-projek di dalamnya.*

**(30 marks/markah)**

- [b] Explain how organizational culture impacts project management.**

*Terangkan bagaimana budaya organisasi memberi kesan kepada pengurusan projek.*

**(30 marks/markah)**

- [c] Compare two forms of a matrix organization and indicate the advantages of each for project management.**

*Bandingkan dua bentuk organisasi matriks dan tunjukkan kelebihan-kelebihan setiap satunya dalam pengurusan projek.*

**(40 marks/markah)**

- Q2. [a] USM is considering two projects to increase postgraduate student enrollment: offering evening classes daily from 6 pm to 9 pm or offering visit by the lecturer to student's home to provide instruction. Use a simple scoring model with at least three criteria to evaluate these two projects.**

*USM mempertimbangkan dua projek untuk meningkatkan pendaftaran pelajar prasiswazah: menawarkan kelas petang harian dari pukul 6 pm hingga 9 pm atau menawarkan lawatan oleh pensyarah ke rumah pelajar untuk memberi arahan. Gunakan satu model catatan mata yang mudah dengan sekurang-kurangnya tiga kriteria untuk menilai dua projek tersebut.*

**(30 marks/markah)**

- [b] Describe the use of a profile model. Construct an example and clearly label every component and label the best alternative in the example.**

*Huraikan kegunaan model profil. Binakan satu contoh dan tandakan semua komponen dengan jelas dan tandakan alternatif yang terbaik dalam contoh berkenaan.*

**(40 marks/markah)**

- [c] The information of two investment projects is shown in Table Q2[c]. From the two projects, choose one based on Net Present Value. The rate of return is set to be 15% and inflation rate remains at 4%.**

*Maklumat bagi dua projek perlaburan adalah ditunjuk di Jadual S2[c]. Dari dua projek ini, pilih satu berdasarkan nilai bersih masakini. Kadar pulangan adalah ditetapkan pada 15% dan kadar inflasi adalah tetap pada 4%.*

**Table Q2[c]**  
*Jadual S2[c]*

<i>Year</i>	<i>Project A (RM)</i>	<i>Project B (RM)</i>
<b>0</b>	<b>-10,000</b>	<b>-10,000</b>
<b>1</b>	<b>2,000</b>	<b>1,000</b>
<b>2</b>	<b>3,000</b>	<b>1,000</b>
<b>3</b>	<b>5,000</b>	<b>3,000</b>
<b>4</b>	<b>5,000</b>	<b>8,000</b>
<b>5</b>	<b>4,000</b>	<b>8,000</b>

(30 marks/markah)

**Q3. [a]** Twelve activities are presented in Table Q3[a]. These activity durations have been estimated with 90% of likelihood. With the precedence requirements, create

- (i) Traditional schedule based on early start times.
- (ii) Critical chain schedule with buffers.

*Dua belas aktiviti telah diberikan dalam Jadual S3[a]. Tempoh-tempoh aktiviti berkenaan telah dianggar pada kebarangkalian 90%. Berdasarkan syarat-syarat pendahuluan, wujudkan*

- (i) *Jadual tradisional berdasarkan masa mula awal*
- (ii) *Jadual berdasarkan rantai kritikal dengan penampan-penampan*

**Table Q3[a]**  
*Jadual S3[a]*

<b>Activity</b>	<b>Time</b>	<b>Predecessor</b>
<b>A</b>	<b>8</b>	
<b>B</b>	<b>15</b>	
<b>C</b>	<b>19</b>	<b>B</b>
<b>D</b>	<b>12</b>	<b>C</b>
<b>E</b>	<b>3</b>	<b>C</b>
<b>F</b>	<b>16</b>	<b>A</b>
<b>G</b>	<b>12</b>	<b>F</b>
<b>H</b>	<b>16</b>	<b>E</b>
<b>I</b>	<b>7</b>	<b>D</b>
<b>J</b>	<b>16</b>	<b>G, H</b>
<b>K</b>	<b>12</b>	<b>I</b>
<b>L</b>	<b>8</b>	<b>J, K</b>

(50 marks/markah)

- [b] Calculate activity durations and variances for project using the values in the Table Q3[b]. Find the critical path and assess how closely should the other path be watched.

*Kirakan tempoh-tempoh dan varian-varian aktiviti bagi projek yang ditunjukkan di Jadual S3[b]. Carikan laluan kritikal dan tentukan sejauh mana sepatutnya laluan yang lain perlu diperhati dengan teliti.*

**Table Q3[b]**  
*Jadual S3[b]*

Activity	Predecessor	Optimistic	Likely	Pessimistic
A	-	4	6	10
B	A	2	5	8
C	A	6	7	9
D	B	3	9	20
E	C	7	9	11
F	D, E	7	11	19

(50 marks/markah)

- Q4. [a] Explain what is a budget contingency and discuss its three uses.

*Jelaskan apa itu bajet luar jangkaan dan bincangkan tiga kegunaannya.*

(40 marks/markah)

- [b] Perform resource leveling on the project shown in Table Q4[b]. Activity times are calculated in 8 hours per day. The project has two full-time employees (each available for 8 hours of works per day) and one part time employee (available for 4 hours per day). All of the activities may be performed by any of the employees. Activity splitting is allowed.

*Jalankan perarasan sumber bagi projek yang ditunjukkan dalam Jadual S4[b]. Masa-masa aktiviti adalah dikira dalam 8 jam sehari. Projek ini mempunyai dua pekerja penuh masa (seorang boleh bekerja untuk 8 jam setiap hari) dan satu pekerja sambilan (boleh bekerja untuk 4 jam setiap hari). Kesemua aktiviti boleh dilaksanakan oleh mana-mana pekerja. Pemecahan aktiviti adalah dibenarkan.*

**Table Q4[b]**  
*Jadual S4[b]*

Activity	Time	Predecessor
A	8	--
B	5	A
C	9	A
D	11	A
E	7	B
F	5	E
G	3	C
H	4	D
I	9	G, H
J	3	F, I

(60 marks/markah)

- Q5. [a]** Sketch the project control cycle and discuss the activities that take place in each step.

*Lakarkan kitaran kawalan projek dan bincangkan aktiviti-aktiviti yang berlaku dalam setiap langkah.*

(50 marks/markah)

- [b]** Based on the earned value table (Table Q5[b]) at the end of month May, determine cost and schedule variances for this project and comment on the execution of this project.

*Berdasarkan jadual nilai yang diperolehi (Jadual S5[b]) pada hujung bulan Mei, tentukan varian-varian kos dan jadual untuk projek ini dan ulaskan pelaksanaan projek ini.*

**Table Q5[b]**  
*Jadual S5[b]*

Activity	Jan.	Feb.	Mar.	Apr.	May	June	July	Total	% Complete
A	RM2,000	RM2,000	RM3,000	RM3,000	RM3,000	RM1,000		RM14,000	80%
B		RM500	RM5,000	0	0	RM5,000		RM10,500	90%
C		RM500	0	RM1,000				RM1,500	100%
D			RM800					RM800	100%
E			RM400	RM800	RM800			RM2,000	100%
F		RM400			RM1,000			RM1,400	80%
G			RM5,000	RM200	RM2,000			RM7,200	90%
H					RM400		RM4,000	RM4,400	0%
I						RM1,000	RM2,000	RM3,000	20%
J			RM500	RM500	RM500	RM500	RM3,500	RM5,500	20%
K			RM1,000		RM1,000		RM6,000	RM8,000	30%
L					RM2,000		RM4,000	RM6,000	40%
Actual Expenditure	RM5,500	RM5,400	RM15,700	RM6,400	RM10,600	0	0		

(50 marks/markah)

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