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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2018/2019**

COURSE NAME : PROJECT MANAGEMENT
COURSE CODE : BWA30102
PROGRAMME : BWA
EXAMINATION DATE : DECEMBER 2018/JANUARY 2019
DURATION : 2 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

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THIS QUESTION PAPERS CONSIST OF **FIVE (5)** PAGES

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- Q1**
- (a) Compare the difference between monitoring and evaluation. (9 marks)
 - (b) Describe the importance of indicators to the project management team. (6 marks)
 - (c) Analyze the necessary steps taken by a manager in conducting, monitoring and evaluation in project management. (10 marks)

Q2 Consider the network of a project in **Figure Q2**.

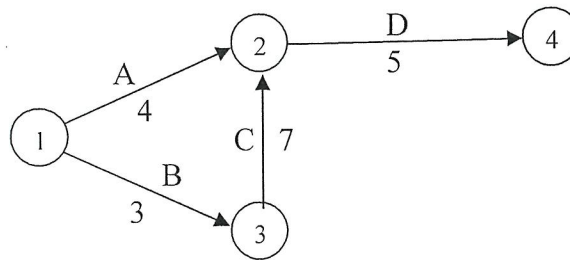


Figure Q2: Network of a project

(2 marks)

- (a) Determine the first activity to be crashed by the following priority rules:
 - (i) Shortest task first. (2 marks)
 - (ii) Minimum slack first. (2 marks)
 - (iii) Most critical followers. (2 marks)
 - (iii) Most successors. (2 marks)

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- (b) Using the network in **Figure Q2** and information from **Table Q2(b)**,
- (i) Find the crash cost (RM) per day. (10 marks)
 - (ii) Decide which activities should be crashed to meet a project deadline of 13 days at minimum cost. Assume partial crashing is allowed. (5 marks)

Table Q2(b): Normal and Crashed Times

Activity	Crash time (days)	Crashed cost (total)	Normal time (days)	Normal cost
A	4	400	5	200
B	2	375	4	450
C	4	840	8	400
D	1	720	5	610

- Q3** (a) The cost (RM) information about a showroom renovation is given in **Table Q3(a)**. Determine which activities are on time, which activities are early, and which activities are behind schedule. (10 marks)

Table Q3(a): Cost Information

Activity	Budgeted cost	Actual cost	Critical ratio
A: Plan changes	80	50	0.7
B: Solicit bids	30	50	1.2
C: Select contractor	70	50	1.3
D: Schedule date	50	60	1.5
E: Start renovation	70	50	1.3

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- (b) A company is constructing a 4-storey commercial building for the customer. The project has a planned daily cost of 400 and a planned daily earned value of 400. The earned values and costs for the first six days are given below:

Earned value	:	290, 288, 295, 201, 305, 206
Cost	:	292, 288, 293, 298, 285, 300

Calculate the critical ratio for each day.

(15 marks)

- Q4** (a) Find the schedule and cost variances for a project that has an actual cost at month 22 of RM540 000, a scheduled cost of RM523 000, and an earned value of RM535 000.
- (3 marks)
- (b) A software development project at day 80 exhibits an actual cost of RM 78 000 and a scheduled cost of RM84 000. The software manager estimates a value completed of RM81 000. Calculate cost variance, schedule variance and cost-schedule-index (CSI).
- (10 marks)
- (c) Given an activity in an advertising project whose planned cost was RM12 000 but actual cost to date is RM10 000 so far. The project completed is only 80 percent.
- (i) Calculate the cost and schedule variances.
- (6 marks)
- (ii) Give the response, either the client will be pleased or angry.
- (6 marks)

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- END OF QUESTIONS -

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Earliest finish time = earliest start time + duration

Latest start time = latest finish time – duration

Slack = latest start time – earliest start time

Expected time, $TE = \frac{(a + 4m + b)}{6}$ Variance, $\sigma^2 = \left(\frac{b-a}{6}\right)^2$

Uncertain completion time, $Z = \frac{(D - \mu)}{\sqrt{\sigma_\mu^2}}$

Cost per day of crashing a project, Slope = $\frac{\text{crash cost} - \text{normal cost}}{\text{crash time} - \text{normal time}}$

Cost variance (CV) = earned value (EV) – actual cost (AC)

Schedule variance (SV) = earned value (EV) – planned value (PV)

Time variance (TV) = time scheduled (ST) – actual time (AT)

Cost performance index CPI = EV / AC

Schedule performance index SPI = EV / PV

Time performance index TPI = ST / AT

Cost-schedule index CSI = (CPI)(SPI)

Critical ratio = (actual progress / scheduled progress) × (budgeted cost / actual cost)

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