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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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

COURSE NAME : PROJECT PLANNING AND SCHEDULING
COURSE CODE : BPD 33903
PROGRAMME CODE : BPC
EXAMINATION DATE : DECEMBER 2018/ JANUARY 2019
DURATION : 3 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

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THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

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- Q1** A developer proposed to develop a small commercial project. **Table Q1** shows the description of the project.

Table Q1: Activity List of a Small Commercial Project

Activity	Description	Duration (days)	Cost (RM)
1	Foundation and slab utilities	6	12,500
2	Structure steel	4	23,000
3	Roof deck	4	10,000
4	Floor slab	2	5,500
5	Siding	6	19,000
6	Windows and doors	2	4,700
7	Mechanical	14	16,800
8	Electrical	14	15,700
9	Insulation	4	8,800
10	Finishes	5	7,000

- (a) Illustrate a summary bar chart for activities. (5 marks)
- (b) Calculate the costs proportionately to the duration for each day activity. (5 marks)
- (c) Calculate the total cost for each day. (5 marks)
- (d) Develop the cost-versus-time curve for the project. (10 marks)

Q2 A small infrastructure project consists of twelve activities. **Table Q2** shows the duration of each of activities, while interrelationships amongst various activities are as follows:

- Activity A is starting activity and proceeds activities B, C and D.
- Activity E depends on activities B and C
- Activity F follows activities C and D.
- Activities G and H can start as soon as activity D is completed.
- Activity I succeeds activities G, E and F.
- Activities J and K can start only when activities H and I are completed.
- Activity L is the last activity and it succeeds activities J and K.

Table Q2: Duration of each of Activity

Activity	Time (Week)
A	1
B	3
C	4
D	6
E	8
F	3
G	2
H	1
I	7
J	10
K	5
L	4

(a) Calculate total duration to complete the project.

(20 marks)

(b) Demonstrate the critical path on the network.

(5 marks)

Q3 Table Q3 shows Resources-Constrained Schedule for housing project.

Table Q3: Resources-Constrained Schedule

Activity	Precedence	Resource	Duration (Days)	ES	LF	TS
1	-	2R	2	0	2	0
2	1	2R	6	2	10	2
3	1	2R	4	2	6	0
4	1	1R	2	2	10	6
5	3	1R	2	6	10	2
6	3	1R	4	6	10	0
7	2,4,5,6	1R	2	10	12	0

- (a) Prepare a resource profile with:
- (i) Gantt Chart (5 marks)
 - (ii) Resource Requirement Graph (10 marks)
- (b) Explain **FIVE (5)** procedures for leveling resource. (10 marks)

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- Q4** Cost analysis will help to reduce guesswork in measuring performance and forecasting the project. **Table Q4** shows the budgeted costs for renovation project.

Table Q4: Budgeted Costs for Renovation Project

Activities	Duration (weeks)								
	5	10	15	20	25	30	35	40	45
Architectural Design	4	4	2						
Structural Design	3	6	12	8					
Installation			4	12	24	6			
Testing					2	6	6	4	2

- (a) Calculate:
- (i) Monthly budget for the project. (5 marks)
 - (ii) Monthly cumulative budgets for the project. (5 marks)
- (b) Develop the project S-curve to identify the relationship between the project budget baseline and project schedule. (15 marks)

-END OF QUESTIONS-

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