



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2015/2016**

COURSE NAME : PROJECT MANAGEMENT
COURSE CODE : BPA 31803
PROGRAMME : 2 BPB
EXAMINATION DATE : JUNE / JULY 2016
DURATION : 3 HOURS
INSTRUCTION : ANSWER ALL THE QUESTIONS

THIS QUESTION PAPER CONSISTS OF **FIVE (5)** PAGES

- Q1**
- (a) Explain the importance of time and cost estimation to project management. (5 marks)

 - (b) Provide **FIVE (5)** guidelines for work package estimation. (5 marks)

 - (c) Tele-Malaysian Incorporation has a contract to produce eight satellites to support a worldwide telephone system (for Telecom Bhd.) that allows individuals to use a single, portable telephone in any location on earth to call in and out. Tele-Malaysian Inc. will develop and produce the eight units. Tele-Malaysian Inc. has estimated that the R&D costs will be RM12,000,000. Material costs are expected to be RM6,000,000. They have estimated the design and production of the first satellite will require 100,000 labor hours and an 80 percent improvement curve is expected. Skilled labor cost is RM30 per hour. Desired profit for all projects is 25 percent of total costs.
 - i) Calculate the labor hours needed for the eighth satellite. (3 marks)

 - ii) Calculate the labor hours for all the eight satellites. (3 marks)

 - iii) Determine the price would you ask for the project. Give reasons for your answer. (3 marks)

 - iv) Midway throughout the project your design and production people realize that a 75 percent improvement curve is more appropriate. Determine the improvement impact on the project. (3 marks)

 - v) Near the end of the project, Telecom Bhd. has requested a cost estimation for four satellites identical to those you have already produced. Determine and justify the price you will quote them. (3 marks)

- Q2** (a) Explain the importance of slack to the project manager. (3 marks)
- (b) State the difference between free slack and total slack. (2 marks)
- (c) The information of custom made to order project of an Air Conditioner Manufacturer is tabulated in **Table Q2**.

Table Q2

ID	Activity	Predecessor	Time (days)
A	Order review	None	5
B	Order standard parts	A	20
C	Manufacture standard parts	A	30
D	Design standard parts	A	5
E	Software development	B,C, D	80
F	Manufacture custom hardware	E	15
G	Assemble	E	30
H	Commissioning	E	25
I	Testing	E	20
J	Packaging	F,G,H,I	10

- (i) Draw a project network for this project. (4 marks)
- (ii) Calculate the early activity time. (4 marks)
- (iii) Calculate the late activity time. (4 marks)
- (iv) Calculate the slack time. (4 marks)
- (v) Identify the critical path. (4 marks)

Q3 You are one of three machinists assigned to complete a short manufacturing project as shown in **Figure Q3**. Right before the start of the project, one of your fellow machinists was hospitalized and will not be available to work on the project.

Develop a resource-constrained schedule in the loading chart in **Table Q3** that follows to see how long the project duration will take only two machinists. Be sure to record the order in which you schedule the activities using the scheduling heuristics. Activities A, B, C, D, E, G and H require two machinists to complete. Activity F requires only one machinist. No splitting of activities is possible.

(25 marks)

Q4 Use the information contained below to compress one time unit per move using the least cost method. Reduce the schedule until you reach the crash point of the network is tabulated in **Table Q4**.

Table Q4

Activity	Predecessor	Crash Cost (Slope)	Maximum Crash Time	Normal Time	Normal Cost
A	None	0	0	3	150
B	A	100	1	4	200
C	A	60	1	3	250
D	B,C	40	1	4	200
E	C	0	0	2	250
F	B	30	2	3	200
G	F	20	1	2	250
H	D,E	60	2	4	300
I	G,H	200	1	2	200

(a) Identify what activity(s) was crashed for each move (2 marks)

(b) Compute the adjusted total cost (3 marks)

(c) If the indirect cost for each duration are:

- RM1,500 for 17 weeks
- RM1,450 for 16 weeks
- RM1,400 for 15 weeks
- RM1,350 for 14 weeks
- RM1,300 for 13 weeks
- RM1,250 for 12 weeks
- RM1,200 for 11 weeks
- RM1,150 for 10 weeks

Determine the optimum cost-time schedule for the project. (20 marks)

- END OF QUESTIONS -

FINAL EXAMINATION

SEMESTER / SESSION : SEM II / 2015/2016
 COURSE NAME : PROJECT MANAGEMENT

PROGRAMME : 2 BPA/BPB
 COURSE CODE : BPA 31803

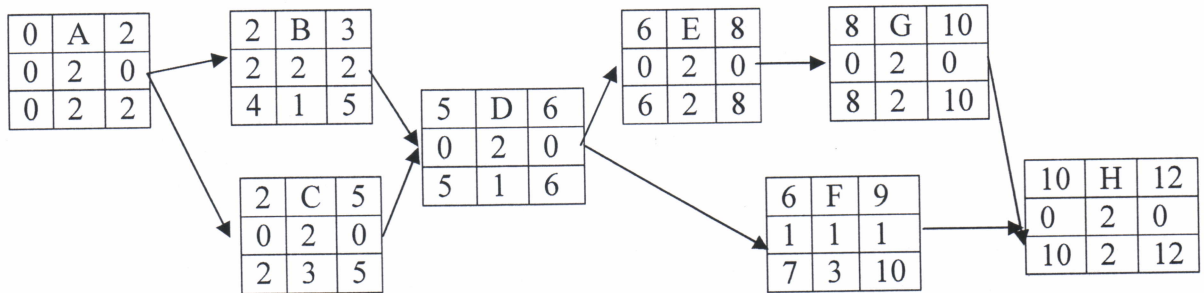


Figure Q3

Table Q3

ID	RES	DUR	ES	LF	SL	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A	2					■	■																	
B	2							■	■	■														
C	2								■	■														
D	2											■												
E	2												■	■										
F	1													■	■	■								
G	2															■	■							
H	2																	■	■					
Resources scheduled																								
Resources available						2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2