Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2023/2024

COURSE NAME	:	SOFTWARE PROJECT MANAGEMENT
COURSE CODE	:	BIE 30503
PROGRAMME CODE	:	BIP
EXAMINATION DATE	:	JULY 2024
DURATION	:	3 HOURS
INSTRUCTIONS	:	1. ANSWER ALL QUESTIONS 2. THIS FINAL EXAMINATION IS CONDUCTED VIA ☐ Open book ☒ Closed book 3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

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

Q1 Draw and explain the Maslow's Hierarchy.

(10 marks)

Q2 Answer **Q2(a)** and **Q2(b)** based on **Figure Q2.1**

Cerberus Berhad is a company that has been involved in many projects. Currently, one project for Cerberus Berhad requires cost about RM1000 to buy each machinery. However, the company also has extra capacity that can be used to produce the same. The annual fixed cost of the unused capacity is RM2,000,000. If Cerberus Berhad decided to make the product it would incur material cost of RM400 per unit, labour cost of RM250 per unit and variable overhead cost of RM200 per unit. The future demand is estimated as 5000 units.

Figure Q2.1

(a) Calculate the profit for the Cerberus Berhad using Make and Buy concept.

(6 marks)

(b) Based on answer in **Q2(a),** determine which decision is more profitable.

(2 marks)

Q3 Answer **Q3(a)** to **Q3(b)** are based on the scenario given in **Figure Q3.1**.

Cost Categories	Renting Costs (RM)	Leasing Costs (RM)
Annual maintenance	0.00	3000.00
Daily operation	0.00	70.00
Daily rental	100.00	0.00

Figure Q3.1

(a) Calculate the number of days the lease cost will be the same as the renting cost for the equipment.

(4 marks)

(b) Assume a company would only use the equipment for 10 months (1st January 2023 – 31st October 2023). Propose a plan to the company whether the company should rent or lease it.

(5 marks)

Q4 Based on **Table Q4.1**, answer the following questions.

Table Q4.1 List of task in development of verification system

Task	Predecessor	Optimistic Estimates (Days)	Most Likely Estimates (Days)	Pessimistic Estimates (Days)	No. of Staff	Cost per day (RM)
A1	None	4	5	8	2	2000
B1	A1	6	6	10	4	6000
C1	A1	5	8	10	2	6000
D1	B1,C1	4	5	8	8	4000
E1	B1,D1	3	4	6	2	2000
F1	D1,E1	5	6	10	4	4000
G1	C1	5	5	8	6	4000
H1	F1,G1	4	5	6	8	2000
I1	F1,H1	6	2	10	4	2000
J1	I1	3	5	8	4	6000

(a) Determine expected duration in day for each activity using Program Evaluation and Review Technique (PERT).

(10 marks)

(b) Develop a network diagram using Activity on the Node (AON) technique based on the answer in **Q4(a).**

(4 marks)

(c) Determine the critical path based on the answer in **Q4(b).**

(2 marks)

(d) Define the shortest possible time needed to complete this project.

(2 marks)

(e) Answer **Q4(e)(i)** to **Q4(e)(iv)** based on the answer in **Q4(b)** and **Figure APPENDIX A.1**. Assume the start date of the project is 19 May 2024 and every Sunday is off days. Determine the early start date, late start date, early finish date, late finish date, slack/float for each of the following tasks.

(i) Task B1

(5 marks)

(ii) Task E1

(5 marks)

(iii) Task G1

(5 marks)

(iv) Task J1

(5 marks)

(f) Draw a histogram of resource loading for staff usage based on the information in **Table Q4.1** and the answer in **Q4(b).**

(5 marks)

(g) Based on the answer in **Q4(f),** draw a histogram of resource levelling for staff usage.

(5 marks)

(h) Based on the answer in **Q4(g)**, determine the number of resources required through the project.

(5 marks)

- END OF QUESTIONS -

APPENDIX A

January

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

February

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29		

March

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

April

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

May

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

June

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

July

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

August

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

September

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

October

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

November

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

December

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Figure APPENDIX A.1