FACULTY OF COMPUTING

SECD2613 SYSTEM ANALYSIS AND DESIGN

SEMESTER II 2024/2025

LECTURER'S NAME

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ASSIGNMENT 1

| NAME	MATRIC NO.
NUR FARRAH HA BINTI M WALED	SX241905ECJHF01
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Question 1

a)

CBA - Costs				
Cost	**Year 0 (RM)**	**Year 1 (RM)**	**Year 2 (RM)**	**Year 3 (RM)**
Development Cost				
Hardware	50,000			
Software	15,000			
Training	30,000			
Consulting	80,000			
Data Conversion	40,000			
Total	215,000			
Production Cost				
Supplies		15,000	15,000	15,000
IS Salaries		75,000	82,500	90,750
Upgrades		10,000	10,000	10,000
Annual Prod. Cost		100,000	107,500	115,750
(Present Value)		74,074	58,985	47,046
Accumulated Cost (PV)		289,074	348,059	395,105
CBA - Benefits				
Benefits				
Customer Service		150,000	180,000	216,000
Productivity		150,000	187,500	234,375
Annual Benefit Cost		300,000	367,500	450,375
(Present Value)		222,222	201,646	183,051
Accumulated Benefits (PV)		222,222	423,868	606,920
Gain or Loss		(66,852)	75,809	211,815
Profitability Index	0.99			

b) The Profitability Index (PI) is 0.99 which is less than 1, showing that it is not a good investment. Thus, should not proceed.

Question 2

a)
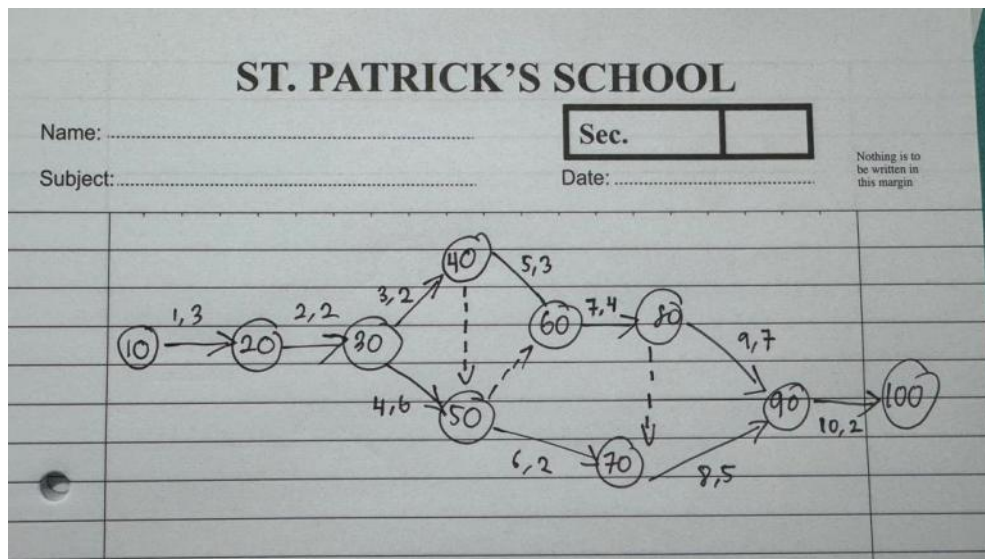
b)
1. 1 → 2 → 3 → 5 → 7 → 8 → 10
2. 1 → 2 → 4 → 7 → 8 → 10
3. 1 → 2 → 3 → 6 → 8 → 10
4. 1 → 2 → 4 → 6 → 8 → 10
5. 1 → 2 → 3 → 5 → 7 → 9 → 10
6. 1 → 2 → 4 → 7 → 9 → 10

c)
1: 1 → 2 → 3 → 5 → 7 → 8 → 10
Durations: 3 + 2 + 2 + 3 + 4 + 5 + 2 = 21 weeks

2: 1 → 2 → 4 → 7 → 8 → 10
Durations: 3 + 2 + 6 + 4 + 5 + 2 = 22 weeks

3: 1 → 2 → 3 → 6 → 8 → 10
Durations: 3 + 2 + 2 + 2 + 5 + 2 = 16 weeks

4: 1 → 2 → 4 → 6 → 8 → 10
Durations: 3 + 2 + 6 + 2 + 5 + 2 = 20 weeks

5: 1 → 2 → 3 → 5 → 7 → 9 → 10
Durations: 3 + 2 + 2 + 3 + 4 + 7 + 2 = 23 weeks

6: 1 → 2 → 4 → 7 → 9 → 10
Durations: 3 + 2 + 6 + 4 + 7 + 2 = **24 weeks (Critical path)**

d)

Gantt Chart for Project Activities

Question 3

a)
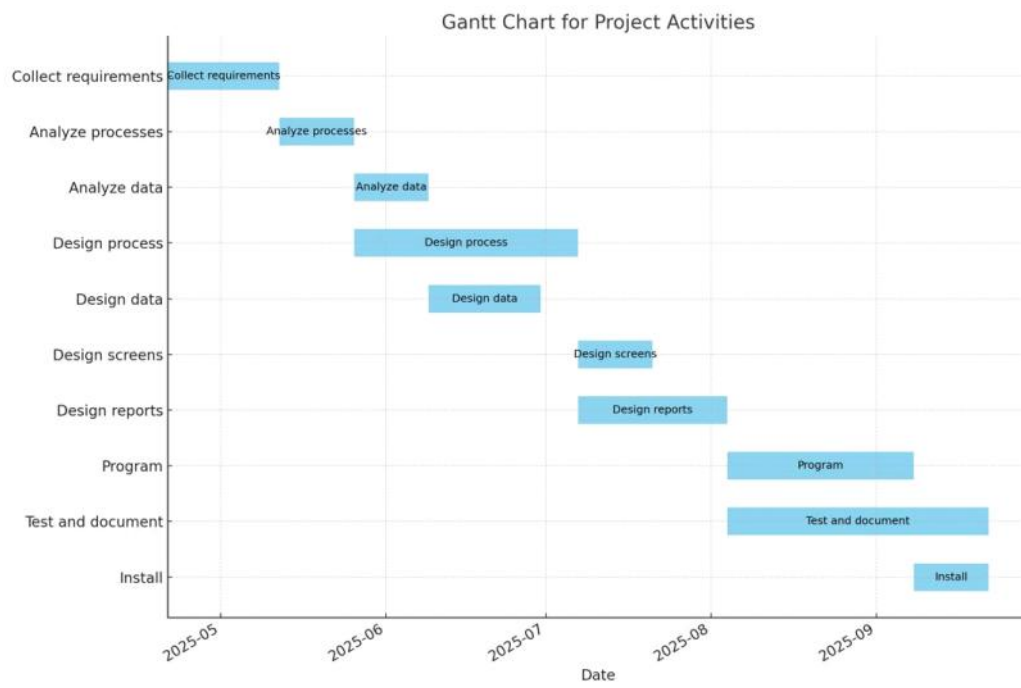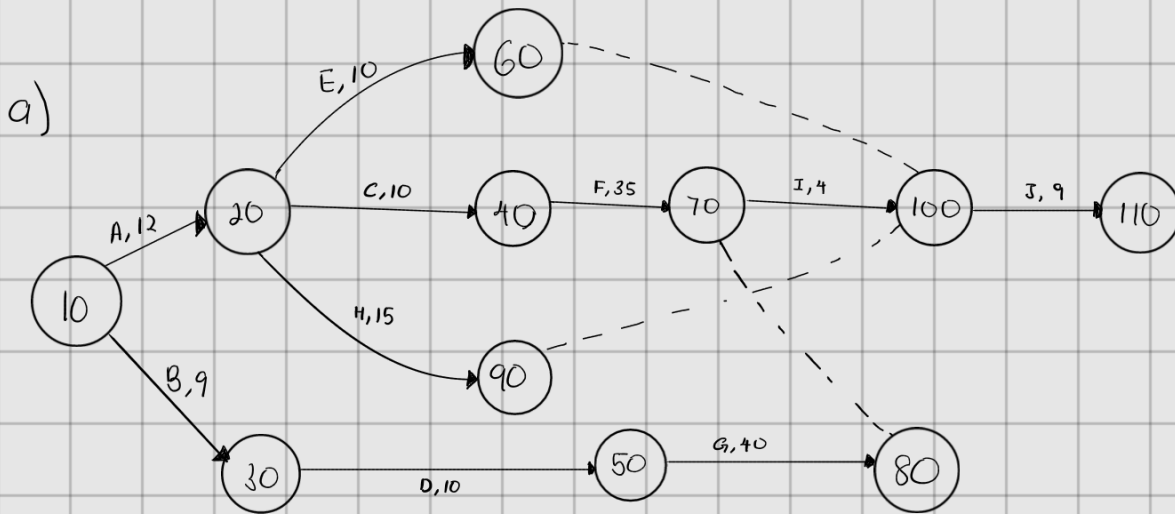
b) List of path

Path 1: A - C - F - I - J

Path 2: A - E - I - J

Path 3: A - H - I - J

Path 4: B - D - G - I - J

c)

Path 1: A - C - F - I - J = 12 + 10 + 35 + 4 + 9 = 70

Path 2: A - E - I - J = 12 + 10 + 4 + 9 = 35

Path 3: A - H - I - J = 12 + 15 + 4 + 9 = 40

Path 4: B - D - G - I - J = 9 + 10 + 40 + 4 + 9 = 72

Critical Path is Path 4: B - D - G - I - J

Question 4 (10 marks)

Activity	Description	Predecessor	Day(s)
A	Confirm training facility	-	3
B	Send email to department managers	A	1
C	Develop training material	A	5
D	Print handout material	C	2
E	Develop PowerPoint slides	C	5
F	Conduct practice session	E	2
G	Conduct user training session	D, F	4

a) PERT Diagram (5 marks)
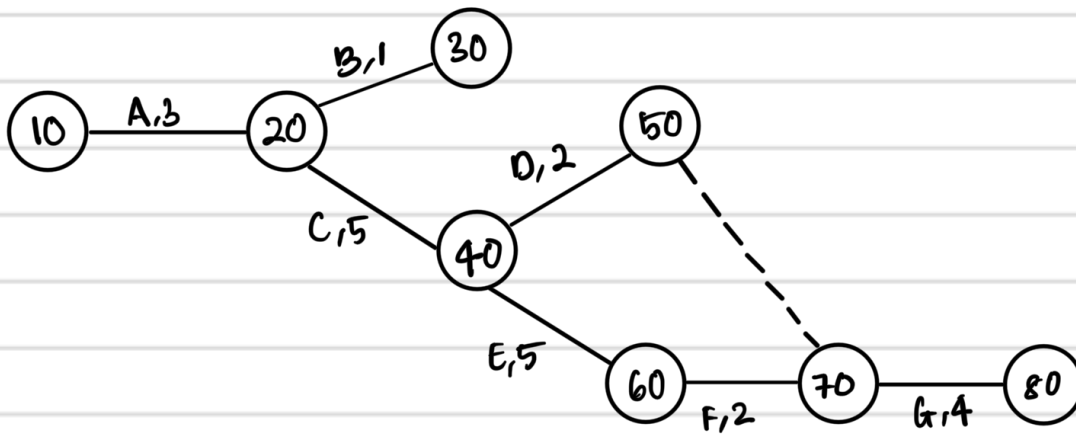
b) All path and its duration (4 marks)

i) A - C - D - G.

Duration: 3 + 5 + 2 + 4 = 14 days.

ii) A - C - E - F - G.

Duration: 3 + 5 + 5 + 2 + 4 = 19 days.

c) The critical path (1 mark)

A - C - E - F - G is the critical path with the duration of 19 days.