Roll NO:- 14L-5861 NAME: AHMAD HASSAN.

Question #1: (a)

no # user inputs → Password and Panic Button (2)

no # user outputs → (Message, sensor status) (2)

no # user inquiries → Zone inquiry, sensor inquiry (2)

no # files → System configuration File (1).

no # external interfaces → test sensor, zone setting, active/deactivate, alarm alert (4).

Assigning Complexities:

⇒ inputs → 3 (Simple)
⇒ outputs → 5 (Average)
⇒ inquiries → 6 (Complex)
⇒ files → 7 (Simple)
⇒ external interfaces → 10 (complex.

(2).

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Calculating UFP's:

$$\Rightarrow \quad UFP = \sum_{i=1}^{5} \sum_{j=1}^{3} Zij \; wij$$

$$UFP = (3 \times 3) + (2 \times 5) + (2 \times 6) + (1 \times 7) + (4 \times 10)$$

$$= 9 + 10 + 12 + 7 + 40$$

$$UFP = 78$$

Question # 1

(b).

Calculating Final Functional Point:

First Calculating:

$$TCF = 0.65 + 0.01 \times \sum Fi$$

Taking / considering Fourteen TCF Factors complexity value = Average = 3 per factor

Therefore:

$$TCF = 0.65 + 0.01 \times (14 \times 3)$$

$$TCF = 1.07$$

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Now calculating FP's.

FP = UFP x TCF
FP = 78 x 1.07
FP = 83.46.

Now finding size.

Size = 50 SLOC per FP = 50 x 83 = 4150.
Size = 4150 SLOC.

$sf = 0.91 + 0.01(3+4+3+1+3) = 1.05$

$Pm = A \times size^{sf} \times em_1 \times em_2 \times em_n$

$Pm = 2.94 \times 4150^{1.05} \times 1.3 \times 1 \times 1 \times 1 \times 1.1 \times 1 \times 1.2$

Pm = 31755.541

Pm = 31756

Ans.

Question # 2 Values

Activity ID	Activity Description	Precedents	Optimistic Duration (Weeks) a	Most Likely Duration (Weeks) m	Pessimistic Duration (Weeks) b
1	Specify overall system		2	4	6
2	Specify module A	1	4	6	8
3	Specify module B	1	5	7	9
4	Specify module C	1	3	5	7
5	Specify module D	1	5	7	9
6	Check specification	2,3,4,5	9	11	13
7	Design module A	6	10	12	14
8	Design module B	6	6	8	10
9	Design module C	6	11	13	15
10	Design module D	6	7	9	11
11	Code/test module A	7	3	5	7
12	Code/test module B	8	5	7	9
13	Code/test module C	9	8	10	12
14	Code/test module D	10	4	6	8
15	System integration	11,12,13,14	3	5	7

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Question #2:-

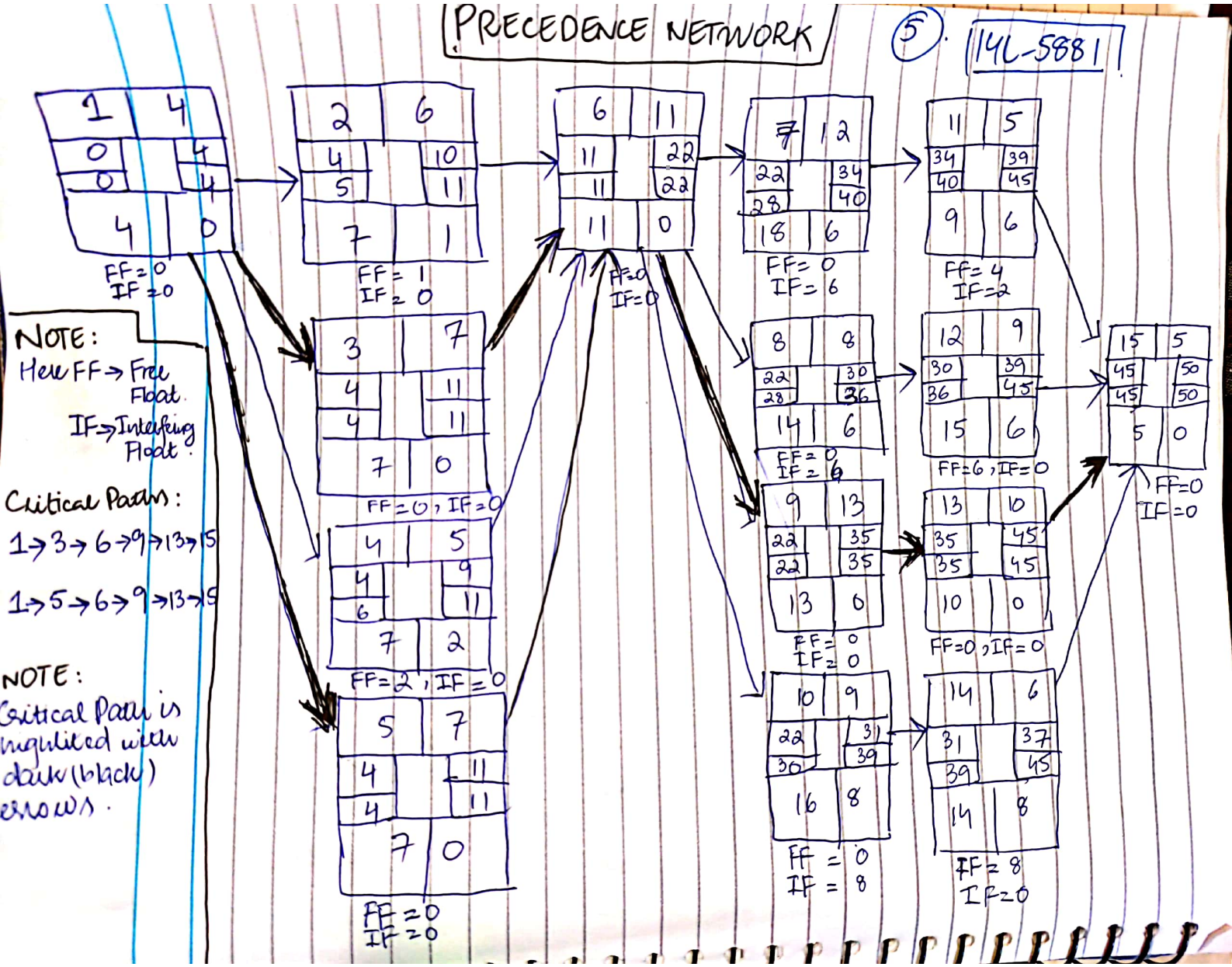
(b)

Calculating expected duration with the formula:

$$Te = \frac{a + 4(m) + b}{6}$$

Here a → Optimistic, b → Pessimistic, m → Most likely

Activity Id	Te (Expected duration)
1	4
2	6
3	7
4	5
5	7
6	11
7	12
8	8
9	13
10	9
11	5
12	9
13	10
14	6
15	5



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(6).

Question #3:

(a)

Calculating values.

No of people	Working Avg	Cost	1 day	Total After 50 days
10	5 hours/day.	5 dollars	250	12500.

Consider these we have:

ACWP = 10,000
BCWP = 10,000 (Considering Slipage).
BCWS = 12,500

$$CPI = \frac{BCWP}{ACWP} = 1$$

$$CV = 0 = BCWP - ACWP$$

$$SPI = \frac{BCWP}{BCWS} = 0.8$$

$$SV = BCWP - BCWS = 10,000 - 12,500$$
$$= -2500.$$

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Question #3
(b)

As now the project was slipped and lagging behind the schedules. Following points/options can be considered.

★ Swapping of Resources:

First identify the cause behind the slipping. One of it could be from resources that the skill set of the team or some individuals were not properly matched, now swapping those resources with resources from other team would rectify the problem.

★ Moving Fast:

Allign the activities that were first in sequence and find if there are not dependencies try to allign them with other activities i.e., doing those activities in parallel would increase the pace of the project.

★ Work Overtime:

It would not be liked by many team members but if not all than most of the member would have to work overtime to meet the deadline.

★ Improvement in the Process:

Finding the causes internally by feedback and other means through which it is found how communication or the project pace can be improved or maintained.

★ Reassure Project Scope:

Check if the work hasn't been altered from the actual scope of the project if so make proper rectifications.