PART 1

Case: E-Commerce Platform Migration

BlingUdabs (BU), a rapidly growing online clothing retailer, has moved its e-commerce platform to a more robust and scalable solution to accommodate its expanding customer base and product line. You have been appointed as the project manager to oversee this critical transition. The project involves selecting a new e-commerce platform, migrating data, integrating it with existing systems, and ensuring minimal disruption to ongoing business operations.

The project plan unfolds as follows:

A - 4

The project starts with a four-week phase of gathering and analysing business requirements (Task A). This involves interviewing stakeholders from various departments to understand their needs and challenges with the current system.

B - 8
A

The team then allocates eight weeks to research and evaluate different e-commerce platforms (Task B). This task aims to identify a platform that best meets the company's current needs and future growth projections.

C - 3
B

Once they select a platform, they will dedicate the next three weeks to defining the system architecture and infrastructure requirements (Task C). This task is crucial for ensuring the new platform will integrate smoothly with existing systems and can handle the expected load.

D - 4
C

Based on the architecture specifications, the next step is to set up the development and testing environments, which is estimated to take four weeks (Task D). This task begins only once the system architecture is defined (Task C).

E - 3
B

While setting up the environment, the team concurrently develops a three-week data migration strategy (Task E). This task can begin right after the platform selection (Task B) and will outline how customer data, product information, and historical orders will be transferred to the new system.

F - 6
D
E

The actual data migration process will last six weeks (Task F) and it can only start once we ensure that both the development environment is ready (Task D) and the migration strategy is in place (Task E).

G - 10
D

While data migration is ongoing, the team will spend ten weeks customising and configuring the new e-commerce platform (Task G). This task depends on the development environment being set up (Task D) and will involve tailoring the platform to BU's specific needs.

H - 5
G

As the platform is being customised, a five-week phase is allocated for designing and implementing integrations with existing systems such as inventory management and CRM (Task H). This task can start once the system customisation begins (Task G) but doesn't need to wait for completion.

I - 3
G

The team develops a comprehensive training program over three weeks (Task I) to ensure a smooth transition for employees. This can begin once the system customisation is underway (Task G).

J - 4
G

The actual staff training is scheduled for four weeks (Task J) and can only start after the system customisation is complete (Task G).

K - 4
F
I

A crucial four-week phase of thorough system testing (Task K) is planned to start after the data migration (Task F and the team develops a comprehensive training program (TASK I) are complete.

L - 2
J
H

After successful testing, a two-week user acceptance testing (UAT) phase (Task L) is scheduled. This phase begins only after design and implement system integrations (Task H), and staff training (Task J) are completed.

M - 3
L
K

The final phase involves the actual system launch and go-live activities, estimated to take three weeks (Task M). This critical phase can only start after completing system testing, and completing UAT (Task L).

Questions

Part 1

1. Summarize the tasks from this narrative in a table, identifying the task letter, a brief description, and the duration in weeks. The first and last tasks are completed for you as an example. [$6^{1/2}$ marks]
2. Create a work breakdown structure (WBS) diagram for the project, showing all the planned tasks. This WBS should contain at least two levels. [10 Marks]
3. Identify all the task dependencies and complete a dependency table showing each activity and its dependency. [$6^{1/2}$ marks]
4. If the project deadline is tight and you need to reduce the overall duration, which three tasks would you consider shortening or running partially in parallel? Justify your choices based on their potential impact on the project timeline and feasibility of compression. [3 marks]

Student Number	4	2	3	5	2	3	1

Part 2

1. Construct an Activity on Node (AON) diagram for the project. Using your diagram, calculate the earliest start (ES), earliest finish (EF), latest start (LS), latest finish (LF), and total float for each activity. [26 marks]
2. Identify the critical path(s) in of the project plan and their respective durations [3 marks]
3. Due to unforeseen complexities, the Gathering and Analysing Business Requirements (Task A) now requires 8 weeks, and the Customising and Configuring the New Platform (Task G) extends to 14 weeks.
   a. Redraw an Activity on Node (AON) diagram for the project. Using your diagram, calculate the earliest start (ES), earliest finish (EF), latest start (LS), latest finish (LF), and total float for each activity [13 marks]
   b. Identify the critical path(s) in the updated project plan and their respective durations. [3 marks]
   c. List the non-critical activities in the revised schedule. [1 mark]
   d. Identify any burst and merge activities after the adjustments. [1 mark]
   e. Calculate the revised total and free floats for the non-critical activities present them in a table. [3 marks]
4. Given the extended timeline for the Gathering and Analysing Business Requirements (Task A), propose two strategies the project manager could employ to reduce the overall project duration. Justify your recommendations. [4 marks]

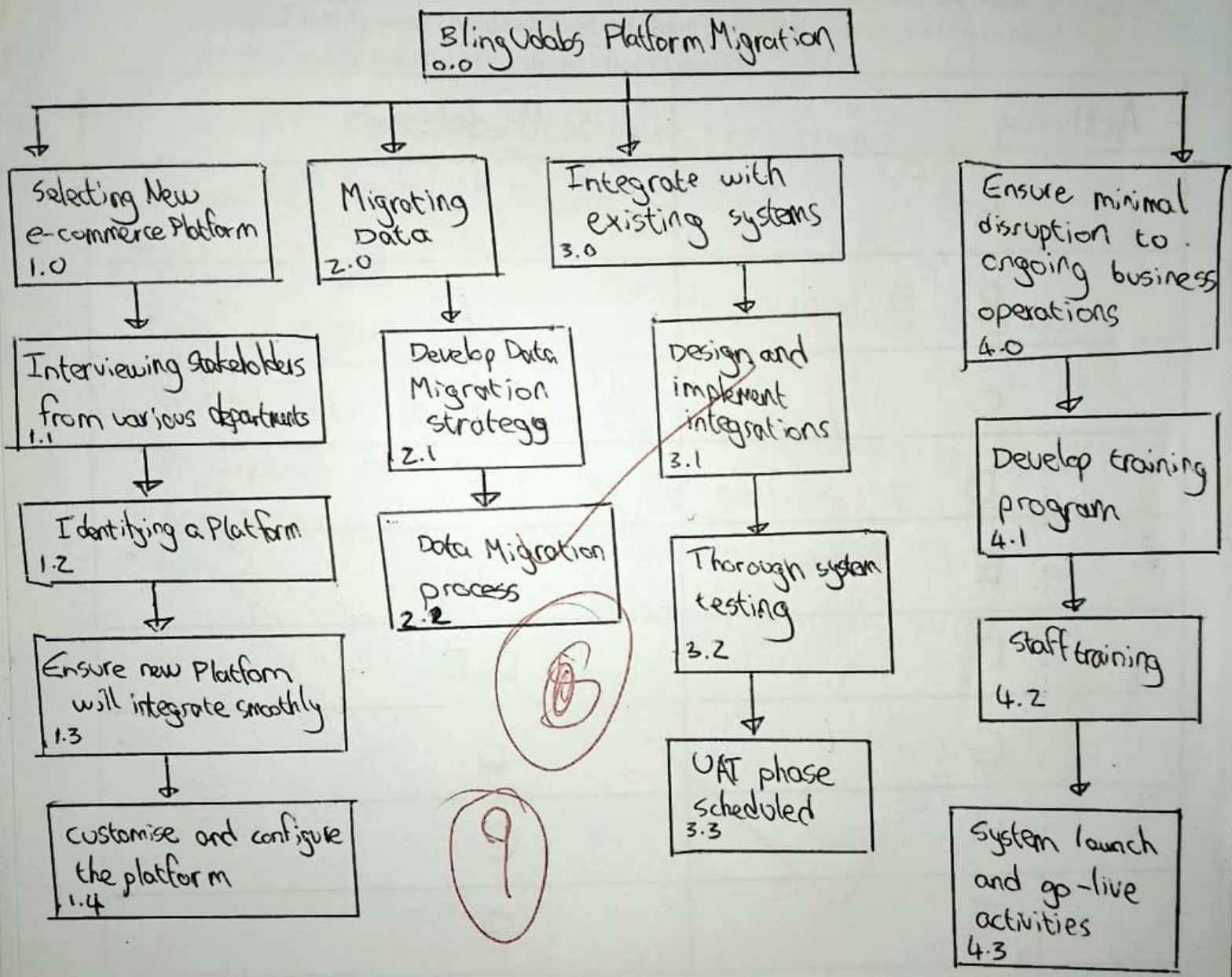
Part 1

1. Summarize the tasks from this narrative in a table, identifying the task letter, a brief description, and the duration in weeks. The first and last tasks are completed for you as an example. [6½ marks]

Task	Description	Duration (weeks)
A	Gathering and analysing business requirements	4 ½
B	Research and evaluate different e-commerce platforms	8 ½
C	Defining the system architecture and infostructure requirements	3 ½
D	Set up the development and testing environments	4 ½
E	Develop data migration strategy	3 ½
F	Implement data migration process	6 ½
G	Customising and configuring the new e-commerce platform.	10 ½
H	Designing and implementing integrations with existing systems	5 ½
I	Develop a comprehensive training program	3 ½
J	staff training	4 ½
K	Thorough system testing	4 ½
L	User acceptance testing (UAT) phase is scheduled	2 ½
M	System launch and go-live activities	3 ½

Student Number	4	2	3	5	2	3	7

2. Create a work breakdown structure (WBS) diagram for the project, showing all the planned tasks. This WBS should contain at least two levels. [10 Marks]



Student Number | 4 | 2 | 3 | 5 | 2 | 3 | 1 |

3. Identify all the task dependencies and complete a dependency table showing each activity and its dependency [$6^{1/2}$ Marks]

Activity	Predecessor
A	–
B	A
C	B
D	C
E	B
F	D, E
G	D
H	G
I	G
J	G
K	F, I
L	H, J
M	K, L

6 1/2

Student Number	4	2	3	5	2	3	7

4. If the project deadline is tight and you need to reduce the overall duration, which three tasks would you consider shortening or running partially in parallel? Justify your choices based on their potential impact on the project timeline and feasibility of compression. [3 marks]

I would consider shortening or running partially in parallel tasks, A, B, and G.

Tasks A and B can run in parrallel. B does not need to depend on A.

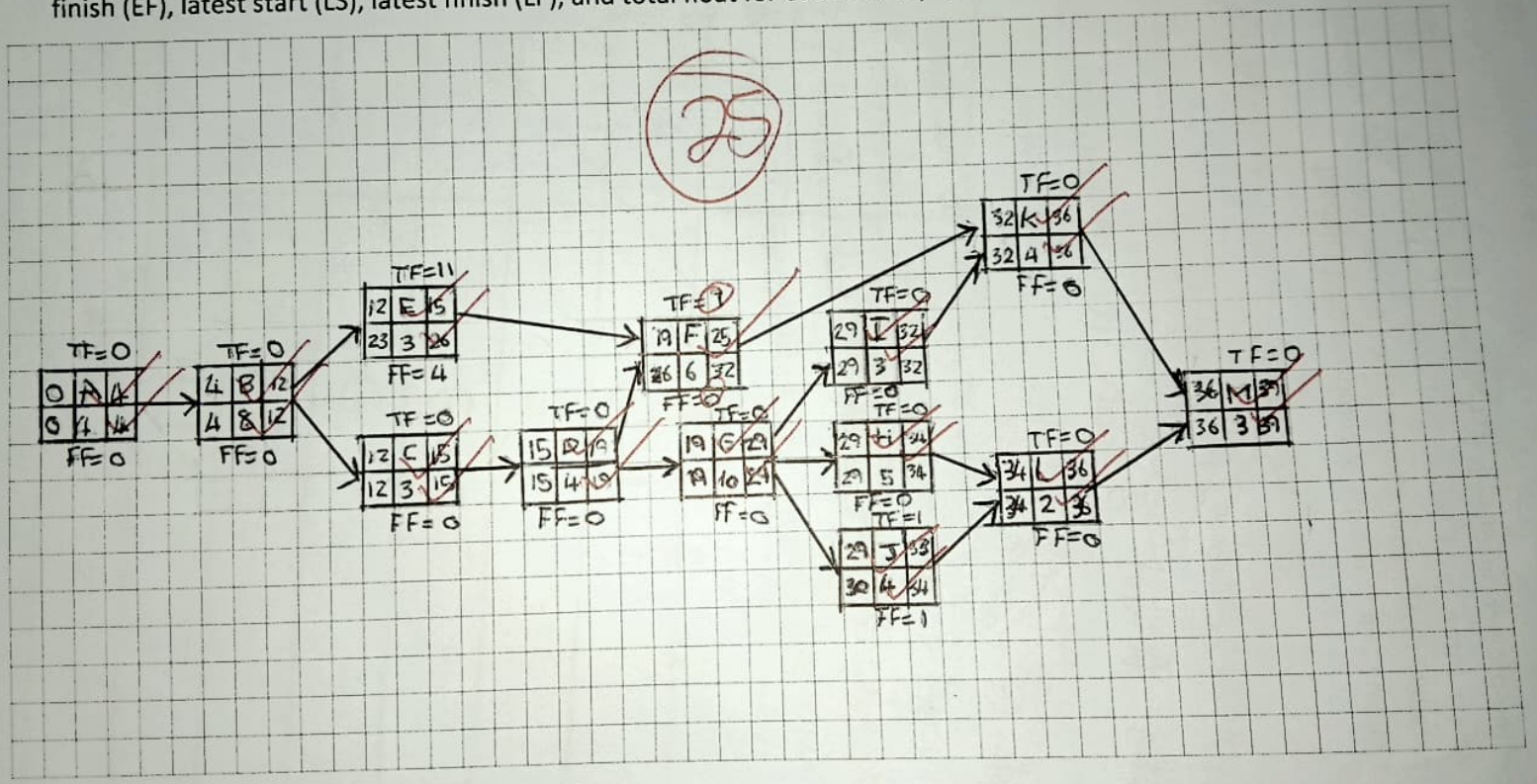
Task G can be shorten. They do not need to spend 10 weeks on customising the platform. Task G also has 3 successors, which is tasks H, I, and J. If G can be completed faster, its 3 successors can get started earlier.

1

Student Number 4 2 3 5 2 3 7

Part 2

1. Construct an Activity on Node (AON) diagram for the project. Using your diagram, calculate the earliest start (ES), earliest finish (EF), latest start (LS), latest finish (LF), and total float for each activity. [26 marks]



TF = LS - ES

FF = ES - EF

Student Number	4	2	3	5	2	3	7

2. Identify the critical path(s) of the project plan and their respective durations [3 marks]

There are 2 critical paths.

1.) Critical path = A, B, C, D, G, H, L, M ½

Duration = 39 weeks ½

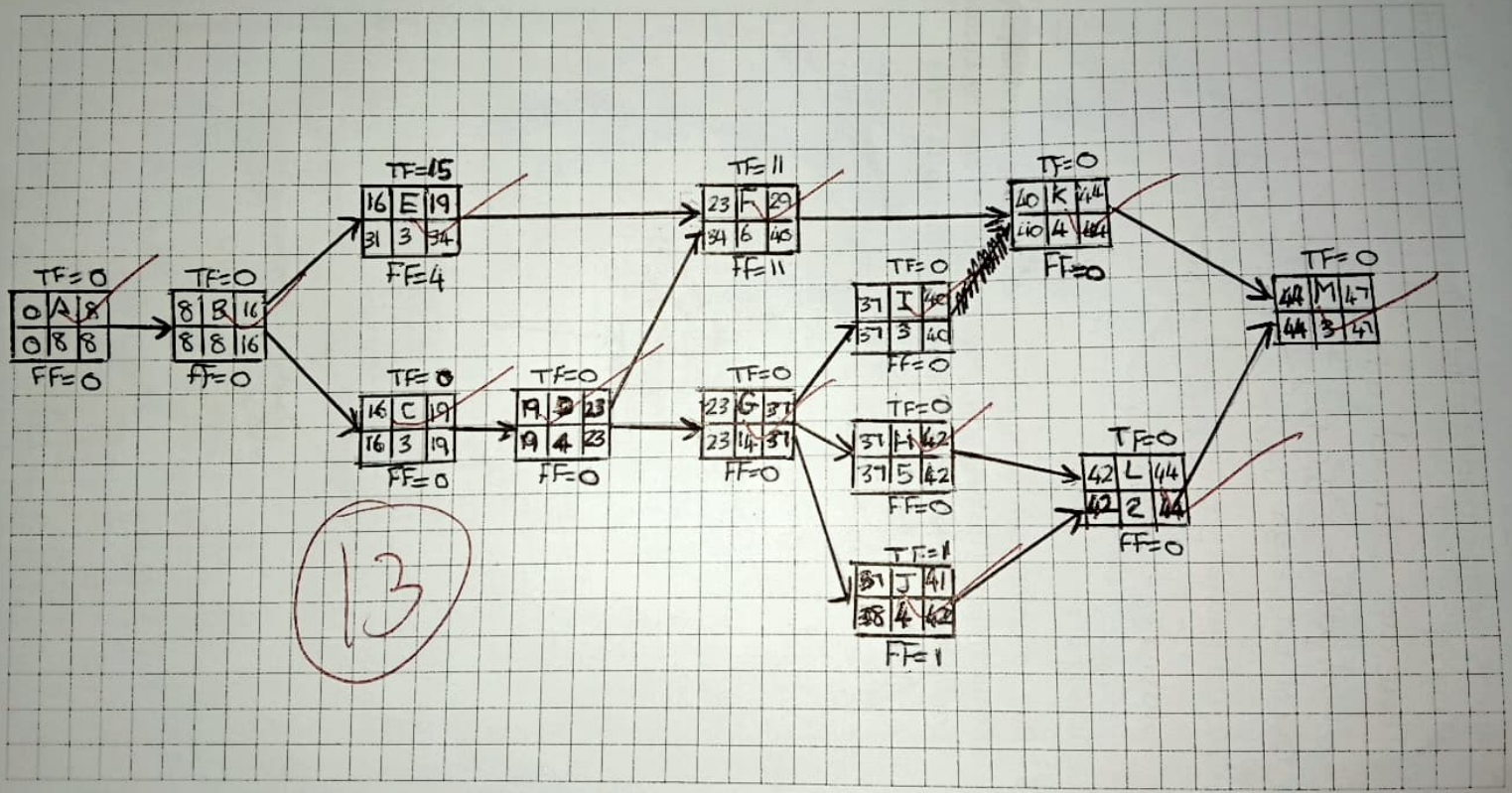
2.) Critical path = A, B, C, D, G, I, K, M ½

Duration = 39 weeks ½

3. Due to unforeseen complexities, the Gathering and Analysing Business Requirements (Task A) now requires 8 weeks, and the Customising and Configuring the New Platform (Task G) extends to 14 weeks.

Student Number 4 2 3 5 2 3 7

a. Redraw an Activity on Node (AON) diagram for the project. Using your diagram, calculate the earliest start (ES), earliest finish (EF), latest start (LS), latest finish (LF), and total float for each activity, and update the AON diagram accordingly. [13 marks]



Student Number	4	2	3	5	2	3	7

b. Identify the critical path(s) in the updated project plan and their respective durations. [3 marks]

There are two critical paths.

1) Critical path: A, B, C, D, G, H, L, M
Duration = 47 weeks

2) Critical path: A, B, C, D, G, I, K, M
Duration = 47 weeks

1½

c. List the non-critical activities in the revised schedule. [1 mark]

The non-critical activities are, E; F; J.

1

d. Identify any burst and merge activities after the adjustments. [1 mark]

B bursts into C and E.
E and D merges into F.
G bursts into I, H, and J.
F and I merges into K. H and J merges into L. K and L merges into M.

e. Calculate the revised total and free floats for the non-critical activities and present them in a table. [3 marks]

Activities	TF	FF
E	15	4
F	11	11
J	1	1
Total	27	16

3

4. Given the extended timeline for the Gathering and Analysing Business Requirements (Task A), propose two strategies the project manager could employ to reduce the overall project duration. Justify your recommendations. [4 marks]

The manager could employ the crashing and fast tracking methods.

Crashing: Involves adding more resources onto the critical activities to complete them faster. This leads to project cost increase, as more resources are being used.

Fast Tracking: Starting new tasks before the predecessor activity is completely finished. This leads to activities being completed faster.

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