



UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2021/2022**

- COURSE NAME : PROJECT PLANNING AND SCHEDULING
- COURSE CODE : BPD 33903
- PROGRAMME CODE : BPC
- EXAMINATION DATE : JULY 2022
- DURATION : 3 HOURS
- INSTRUCTION : 1. ANSWER **ALL** QUESTIONS.
2. THIS FINAL EXAMINATION IS CONDUCTED VIA **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 **THREE (3)** PAGES

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Q1 Figure Q1 shows the node network for the double storey house project.

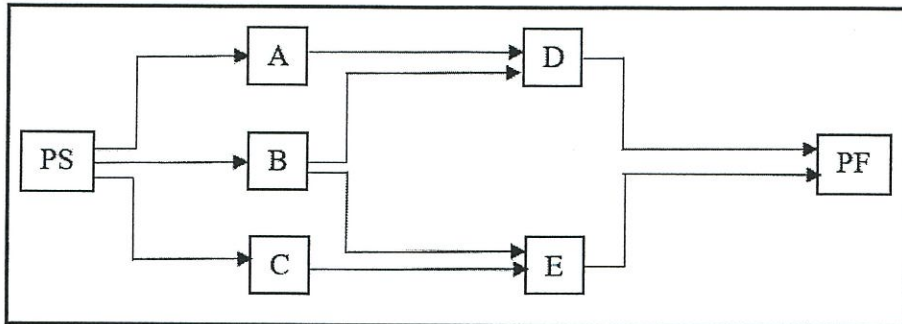


Figure Q1: Node Network

- (a) Prepare the precedence table based on **Figure Q1** (5 marks)
- (b) **Table Q1** shows the project activity, predecessor and durations.

Table Q1: Activity, Predecessor and Durations Project

Activity	Predecessor	Durations (Days)	ES	EF	LS	LF	TF
A	-	3					
B	A	4					
C	A	2					
D	B	5					
E	C	1					
F	C	2					
G	D,E	4					
H	F,G	3					

- (i) Calculate the total project durations and complete the **Table Q1**. (10 marks)
- (ii) Illustrate precedence network diagram. (5 marks)
- (iii) Calculate the Critical Path Method (CPM) and mark the critical path. (5 marks)

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- Q2** (a) The weaknesses in designing cost management strategies can reduce profit margins and cause losses to contractors.

Discuss this statement based on the strategies to reduce losses in construction planning and scheduling.

(10 marks)

- (b) Discuss the comparison Cost Performance Index (CPI) and Schedule Performance Index (SPI) with examples.

(15 marks)

- Q3** Table Q3 shows the network activity for building works.

Table Q3: Network Activity Project

Activity	Duration (Days)	IPA	Laborers
A	6	-	2
B	2	-	3
C	8	A	3
D	5	A, B	5
E	3	B	4
F	6	D, E	3
G	5	C, D	2
H	2	F, G	3

- (a) Analyse the required resources based on the data in **Table Q3**.

(10 marks)

- (b) Solve the maximum resource need to be less than eight laborers per day based on answer in Q3 (a).

(15 marks)

- Q4** (a) Much of the world is experiencing a building boom, as pandemic-related restrictions recede. The construction sector picks up pace to meet demand for new housing. However, the availability of labour is struggling to return to pre COVID-19 levels as many countries find the workers. Demand for new building projects is high, as the market is back in full swing after a turbulent year.

Discuss the challenges in managing labour on construction sites.

(10 marks)

- (b) Explain the planning of construction material management for high-rise building to control the cost in construction phase.

(15 marks)

-END OF QUESTIONS -