



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2019/2020**

COURSE NAME	:	CONSTRUCTION ENGINEERING TECHNOLOGY AND MANAGEMENT
COURSE CODE	:	BNP 21103
PROGRAMME	:	BNA/BNB/BNC
EXAMINATION DATE	:	DECEMBER 2019/JANUARY 2020
DURATION	:	2 HOURS 30 MINUTES
INSTRUCTION	:	ANSWER ALL QUESTIONS ONLY.

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THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

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- Q1**
- (a) State **TWO (2)** common test for soil investigation. (2 marks)
 - (b) Explain **THREE (3)** factors involved in site layout (6 marks)
 - (c) Discuss the difference between the pilecap and the pad footing. (2 marks)
 - (d) Using a sketch discuss the method for taking a 'set' for the end bearing pile. (5 marks)
 - (e) Mr Hilmi plans to build a banglo house in Lot. 1352, Kg. Parit Rasipan, Parit Raja. Generally the area has high water level and the soil is peat type. Mr. Hilmi has met you and asked your advice for a suitable foundation that would be appropriated for his house. Justify your recommendation. (10 marks)
- Q2**
- (a) Briefly explain the difference between stiffener and column. (2 marks)
 - (b) Sketch and name the layer of non-suspended floor. (5 marks)
 - (c) As a technologist at a construction site, you are required to do an inspection before concrete work for ground floor slab. Discuss these **FIVE (5)** inspections. (5 marks)
 - (d) Ir. Hairi as an engineer at Sime Darby has directed grouting work for the upper floors of the Pagoh Education Hub. Discuss the cause of the instruction and the method of execution of the grouting work. (8 marks)

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(e) Name the elements i, ii, iii, iv and v in **Rajah Q2(e)**.

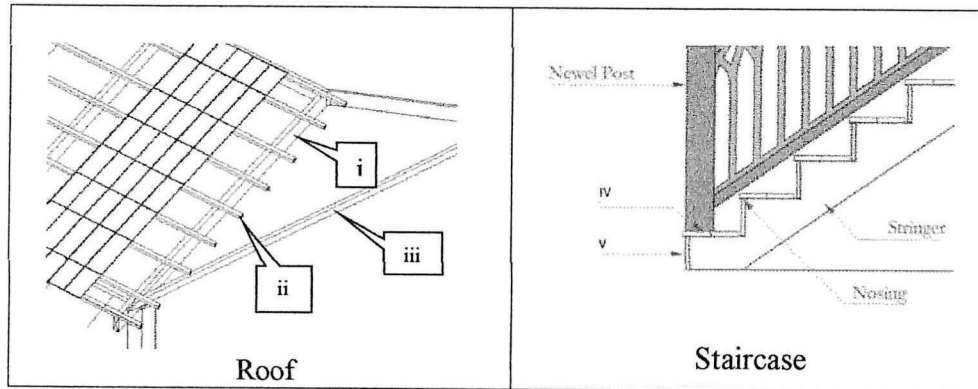


Figure Q2(e) Roof and staircase

(5 marks)

- Q3** (a) Trust Company has obtained construction projects worth RM10 million comprising blocks of flats, terrace houses and bungalows. As a technologist in the company you are asked to propose an organizational chart, appropriate to the project. Give your suggestions in the form of a chart with justifications for the choice of the chart. (6 marks)
- (b) Discuss in detail the process of construction material management. (8 marks)
- (c) State **FIVE (5)** benefits of renting plant/machinery compared to purchasing them. (5 marks)
- (d) Briefly explain the goal of project management. (6 marks)

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- Q4** (a) A list of activities that are required to complete a project is shown in **Table Q4**. Based on the table:

Table Q4

Item	Activity	Duration (day)	Predecessor
1	A	2	-
2	B	3	A
3	C	4	A
4	D	2	A
5	E	3	B
6	F	2	C
7	G	3	D
8	H	4	C,E
9	I	2	F,G
10	J	3	G
11	K	1	H,I,J

- (i) Develop an arrow diagram for the project complete with their Early Start (ES) and Early Finish (EF) for each activity. (8 marks)
- (ii) Evaluate the total float for activity G and J. (2 marks)
- (b) Explain in detail how to control time and cost during construction. (12 marks)
- (c) State **THREE (3)** major responsibilities of a technologist in a construction project. (3 marks)

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- END OF QUESTION -

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