Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2022/2023

COURSE NAME	:	CONTRACT AND ESTIMATION
COURSE CODE	:	BFC 31602
PROGRAMME CODE	:	BFF
EXAMINATION DATE	:	JULY/ AUGUST 2023
DURATION	:	2 HOURS 30 MINUTES
INSTRUCTION	:	1. ANSWER **ALL** QUESTIONS. 2. THE 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 SEVEN (7) PAGES

Q1 (a) Stages of construction project can be classified into two contract phases, which are pre-contract award phase and post-contract award phase. Explain in detail the activities involve for each **THREE (3)** stages under pre-contract award phase.

(12 marks)

(b) Briefly explain all elements of contract which are important in creating a legally contractual agreement.

(7 marks)

(c) Determine the possible remedies for breach of contract that can be claimed if a contract is terminated by the innocent party.

(6 marks)

Q2 On behalf of the contractor company, you are required to estimate the price for 1 m^3 of reinforced in-situ concrete Grade 25. By referring the data given in **Table Q2**,

(a) Calculate the rate for 1 m^3 in RM including its profit and overhead.

(12 marks)

(b) Describe the meaning of tender document.

(1 marks)

(c) Discuss the element of contract based on Bills of Quantity (BQ) and Lump Sum based contract.

(4 marks)

(d) Describe **TWO (2)** obligations for each contractor and employer after the tender is awarded.

(8 marks)

Q3 (a) An infrastructure project involving roads and bridges construction along 75km of Jalan Batu Pahat – Muar will be carried out under the 13th Malaysia Plan. Underlying this road area is of soft clay deposit with high ground water table. Therefore, it is critical that this project to be handled by an organisation that can provide creative engineering and construction solutions and can be completed within a reasonably short period.

(i) Recommend a suitable procurement method for this project. Discuss all factors that are considered for selecting the procurement method.

(10 marks)

(ii) Explain the process of main contractor appointment up to design stage in the project delivered using the recommended procurement method in Q3(a)(i).

(10 marks)

(b) In view of the COVID-19, the Malaysian government implemented the Movement Control Order ("MCO") effective throughout Malaysia from 18 March 2020 to 31 March 2020. The initial MCO period was further extended to 28 April 2020. Following the announcement of the MCO, all construction works shall cease or be suspended, except for certain critical works. As a result of the MCO, issues of delay, extension of time (EOT) to complete the works arise between the employer and the contractor. Discuss example of reasons due to the MCO that can be used by a contractor as a basis to claim for extension of time (EOT).

(5 marks)

Q4 **Figure Q4(a), (b), (c)** and **(d)** show the plan layout and cross section detail for UTHM guard's house. As a site engineer for the project, you are assigned to do a quantity measurement for work below lowest floor finish (WBLFF) element of the building. Based on **Figure Q4(a) - (d)** and **Table Q4**, perform a quantity measurement of the following items:

(a) Volume of soil need to be excavated up to reduce level (in m^3). Assume the 100 mm of top soil from original ground level (OGL) has been removed.

(4 mark)

(b) Volume of lean concrete needed for concreting works of ground beam and pad footing (in m^3).

(6 marks)

(c) Reinforcement bars in pad footing and ground beam (in kg).

(15 marks)

–END OF QUESTIONS–

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Table Q2

Item	Rate
Concrete grade	25
Concrete mix design	1:1 ½ :3
Cement cost	RM10.50/bag (50kg)
Fine aggregate	RM28/m^3
Coarse aggregate	RM35/m^3
Depreciation/miscellaneous material cost for 5.5 m^3	50%
General worker cost	RM50
Profit and overhead	15%

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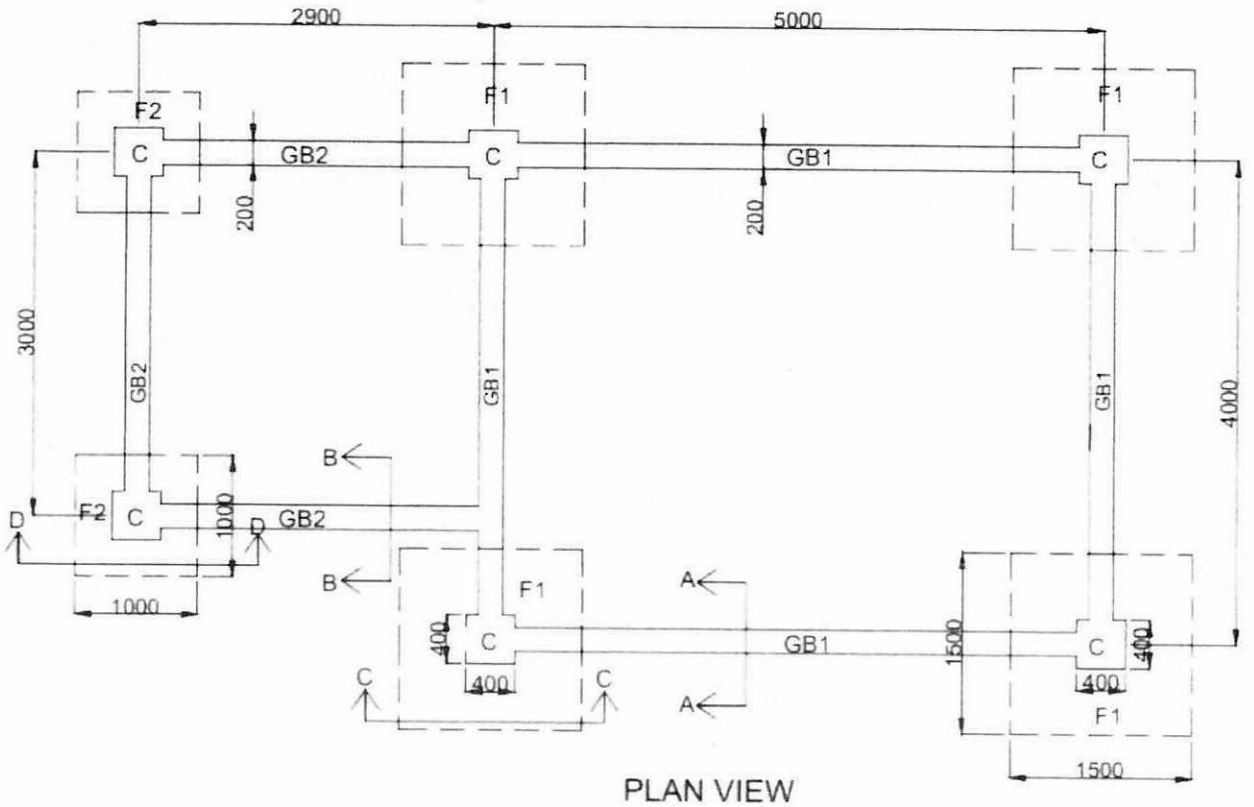

Figure Q4 (a)

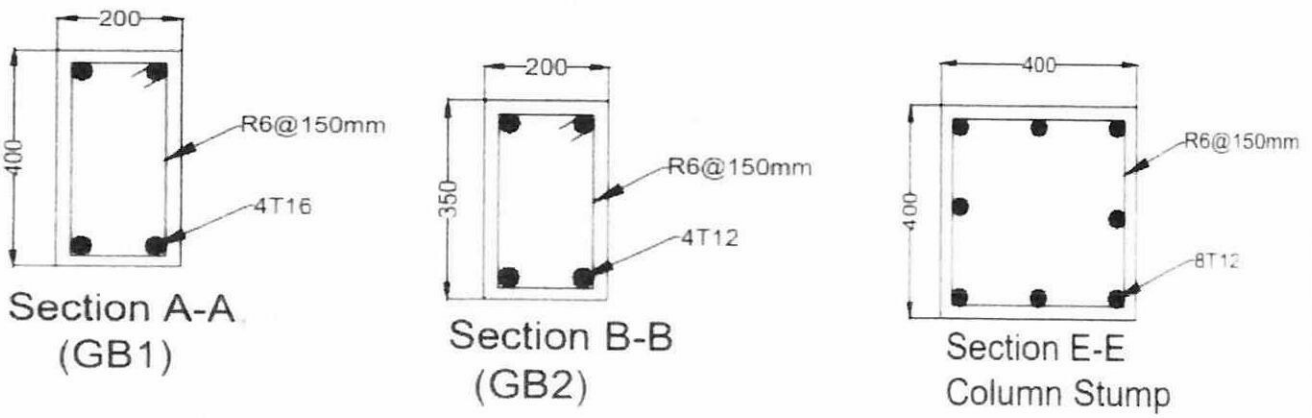

Figure Q4 (b)

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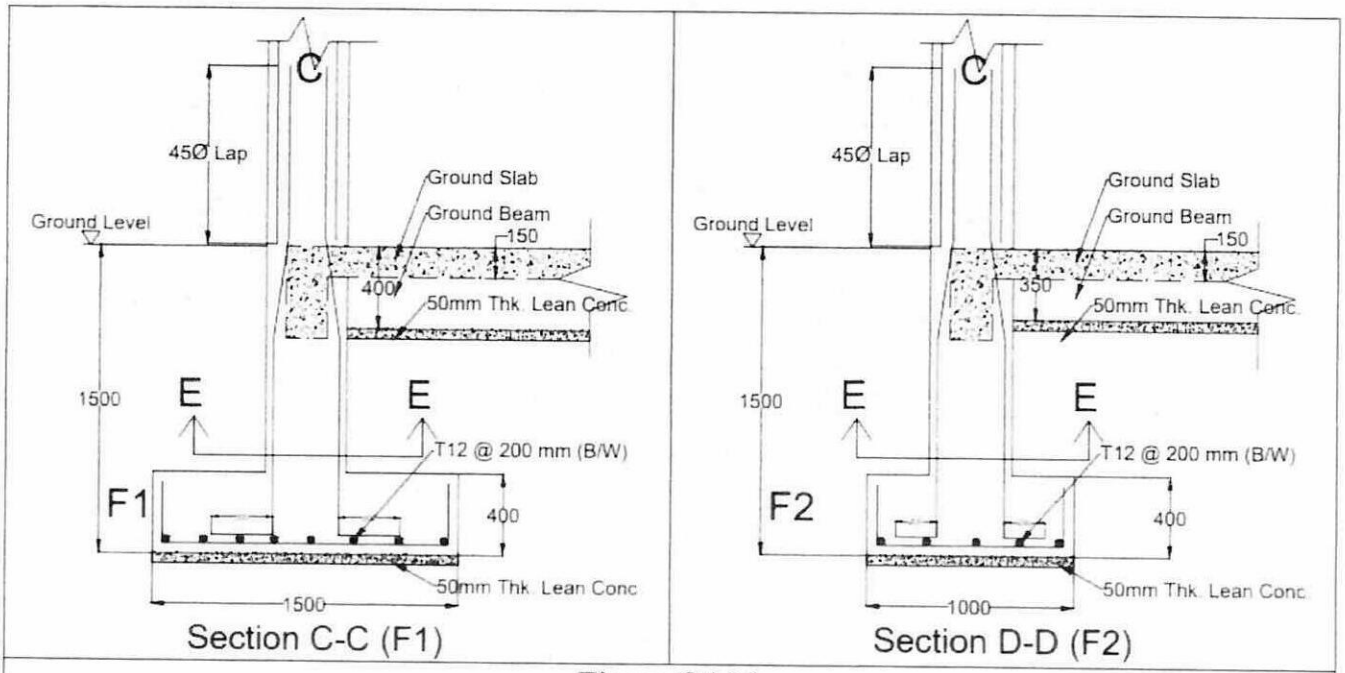

Figure Q4 (c)

NOTES :

1. ALL DRAWINGS ARE NOT TO SCALE
2. ALL DIMENSIONS ARE IN MILIMETRE (MM) UNLESS OTHERWISE NOTED.
3. ALL CONCRETE COVERS SHALL BE 40 MM THICK.
4. LEAN CONCRETE SHALL BE OF GRADE 7 CONCRETE
5. PAD FOOTING, COLUMN STUMP AND GROUND BEAM SHALL BE OF GRADE 25 CONCRETE

Figure Q4 (d)

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Table Q4 - Conversion Table for Round Bar

SIZE (MM)	MASS PER UNIT LENGTH (KG/M)
06	0.222
08	0.395
10	0.616
12	0.888
16	1.579
20	2.466
25	3.854
32	6.313

BFC31602 – TAKING OFF SHEET

NAME:_____ **MATRIC NUM.:**_____

DIMENSION			UNIT	DESCRIPTION