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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2016/2017**

COURSE NAME : CONTRACT AND ESTIMATION
COURSE CODE : BFC31602
PROGRAMME CODE : BFF
EXAMINATION DATE : JUNE 2017
DURATION : 2 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

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THIS QUESTION PAPER CONSISTS OF SIX (6) PAGES

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- Q1** (a) Identify and explain **FOUR (4)** construction characteristics that are mostly considered in construction planning phase. (10 marks)
- (b) Briefly discuss your understanding of the scope of contract management in construction management. (5 marks)
- (c) Explain the following items in tender and contract documents. (10 marks)
- (i) Condition of Contract
 - (ii) Specification
 - (iii) Schedule of rate
 - (iv) Bill of Quantities
- Q2** (a) With the aid of diagrams, explain the types of estimate that will change according to project stages. (12 marks)
- (b) Define the Elemental Cost Analysis (ECA) and point out its importance for estimating the project cost. (8 marks)
- (c) Summarize the taking off work in quantity measurement of building works. (5 marks)
- Q3** (a) Based on information in **Table 1** and the pad footing detailing as shown in **Figures Q3(a)** and **Q3(b)**, calculate the price rate for 1 metre cubic excavation work that is carried out manually (using hand). (10 marks)
- (b) Based on **Figure Q3(a)** and **Figure Q3(b)**, perform taking off to determine the quantity of the following items:
- (i) Reinforcement bars in pad footing, column stump and ground beam. (9 marks)
 - (ii) Links in column stump and stirrups in ground beam. (6 marks)

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Q4 Contract law is a basic law that governs and relates to most aspects of human life.

- (a) Briefly explain the characteristics which form the basis for establishing the law. (5 marks)
- (b) Identify and discuss the elements of contract. (10 marks)
- (c) Differentiate the contract obligations between contractor and client in Articles of Agreements of Public Works Department (PWD) contracts. (10 marks)

– END OF QUESTIONS –

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TABLE 1

Item	Rate
Worker salary (8 hours working/day)	RM 32.00/day
Soil excavation not exceeding 1.50 m depth	1.60 hour/m ³
Soil excavation exceeding 1.50 but not exceeding 3.00 m depth	2.00 hour/m ³
Spreading up soil in making up level (surface to receive pad foundation)	0.12 hour/m ²
Filling in and ramming soil	0.60 hour/m ³
Carting away remainder load	1.20 hour/m ³
Typical soil expansion	25%
Profit	20%

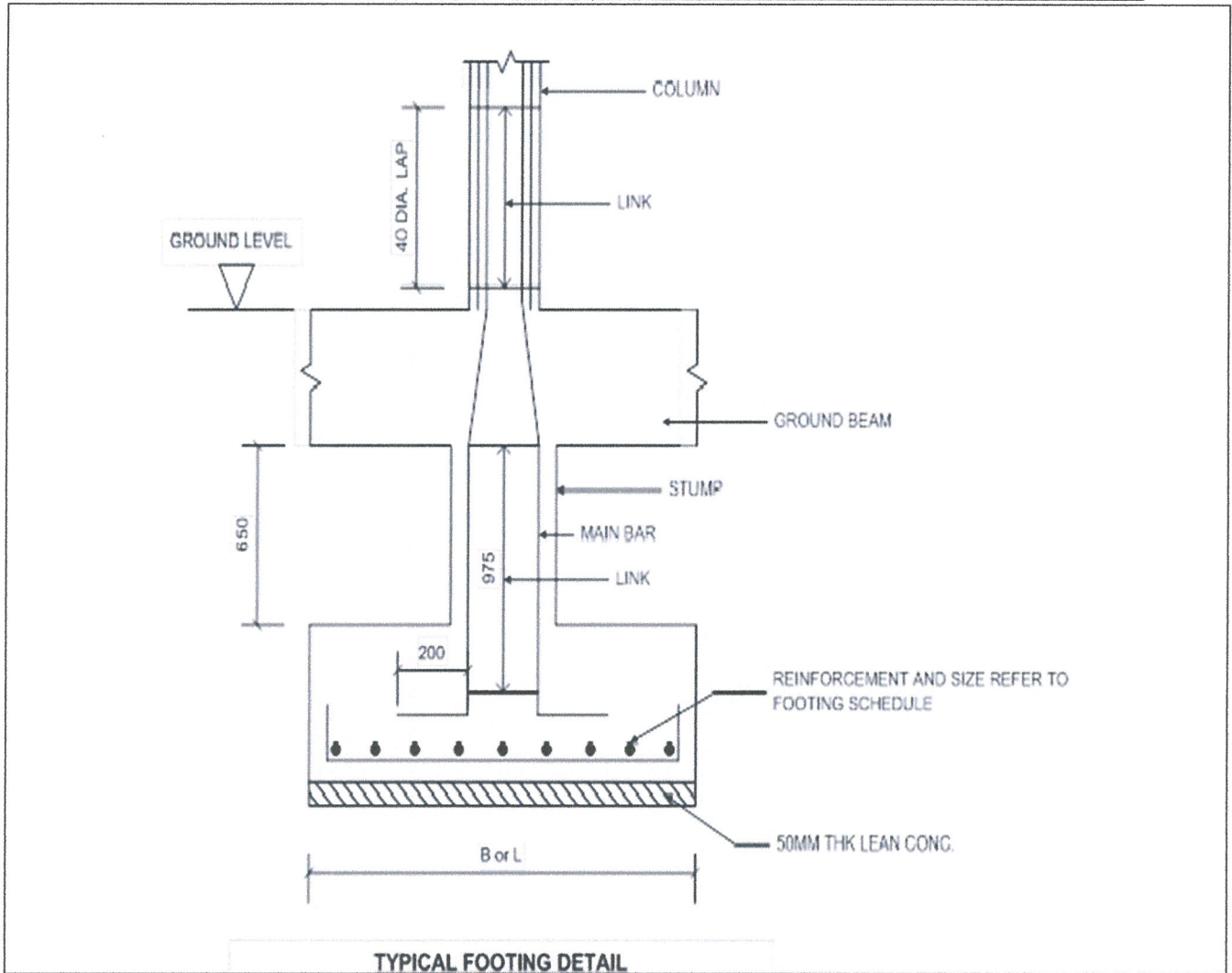
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Type	Length x Width x Thick	Main Rebar
F1	1000 x 1000 x 650	7Y16@150 (b/w)



SIZE (MM)	MASS PER UNIT LENGTH (KG/M)
06	0.222
10	0.616
12	0.888
16	1.579

FIGURE Q3(a): Footing Detail & Rebar Conversion

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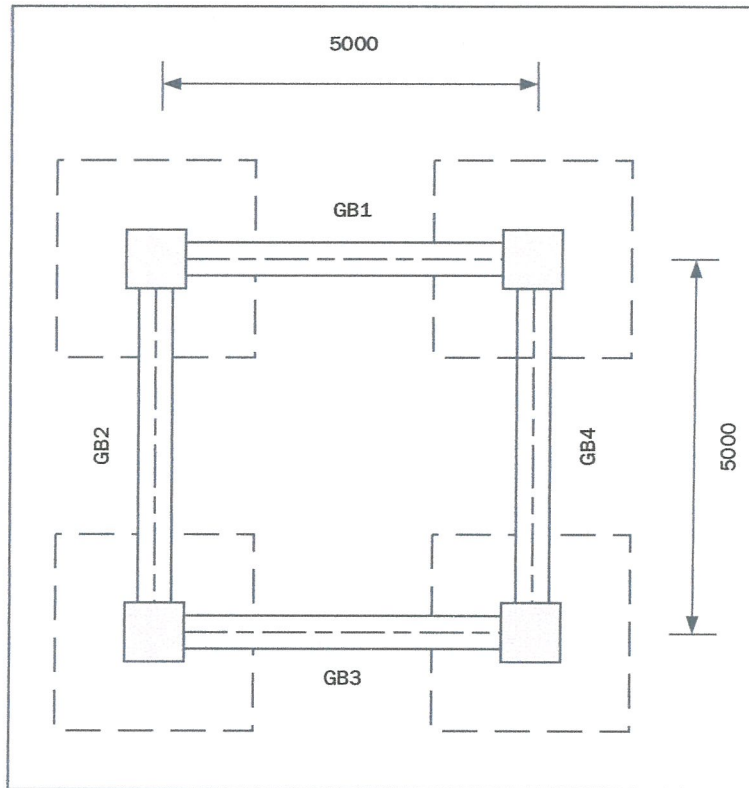


FIGURE Q3(b): Ground Floor Plan

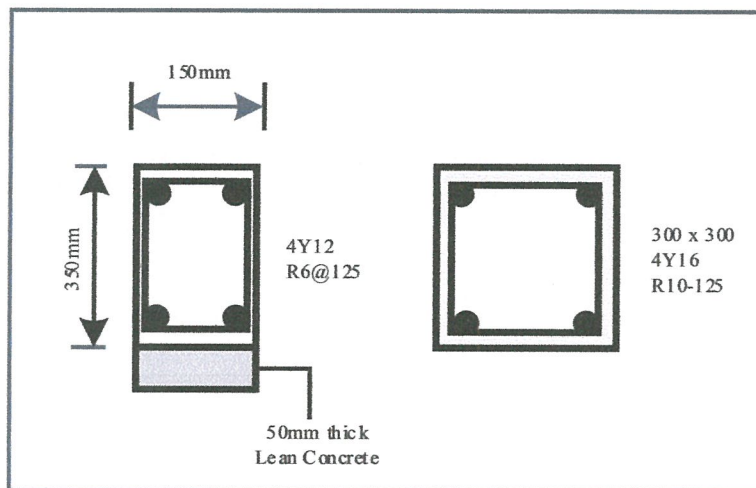


FIGURE Q3(c): GB1, GB2, GB3 & GB4 – Size 150 x 350 (similar rebar)

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