UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2013/2014

COURSE NAME	:	CONSTRUCTION ENGINEERING
COURSE CODE	:	BFC 21002
PROGRAMME	:	2 BFF
EXAMINATION DATE	:	JUNE 2014
DURATION	:	2 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

THIS QUESTION PAPER CONSISTS OF **THREE (3)** PAGES

Q1. (a) Safe loading distribution is important in designing superstructure to ensure the building is safe to occupy. Explain and draw the load distribution from roof to foundation in a frame structure.

(8 marks)

(b) As an engineer you are required to build a shop lot building as per client requirements. The result from site investigation found that the land was classify as pit soil and has experienced consolidation.

(i) Propose appropriate slab design for the ground floor of the shop lot building

(1 Marks)

(ii) Clarify the reason you choose slab design in (i).

(2 marks)

(iii) Sketch and discuss the construction process for the ground floor of the shop lot building

(5 marks)

(c) Briefly discuss the advantages and disadvantages of using precast concrete and traditional method for upper floor.

(9 marks)

Q2. (a) Explain clearly **FIVE (5)** factors to be considered as successful function of formwork.

(10 marks)

(b) Compare the advantage and disadvantage of using timber formwork and Steel formwork.

(10 marks)

(c) As an engineer, safety is the first pirority in any construction activity. Evaluate the safety measure during the formwork installation and working at height level.

(5 marks)

Q3. As a site engineer you are required to arrange a ready-mixed concrete placing for level seven of a university building under construction.

(a) List **THREE (3)** types of potential hazards in the construction site.
(3 marks)

(a) Explain briefly site preparations required for concrete placing.
(10 marks)

(b) Propose and sketch method to ensure a good compaction job.
(8 marks)

(c) Compare the difference between these two methods of transporting concrete for multi-storey constructions.

i. Pumping

ii. By skip
(4 marks)

Q4. (a) List **TWO (2)** types of utilities in construction
(2 marks)

(b) Sketch and discuss procedures required for utilities construction and connection from start to end in construction phase.
(12 marks)

(c) Propose and sketch wiring arrangement for temporary electrical supply system for a 12-storeys building construction site.
(7 marks)

(d) Compare the different between the purpose of temporary drainage and sewerage in construction site.
(4 marks)

- END OF QUESTION -