UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2012/2013

COURSE NAME	:	CONSTRUCTION EQUIPMENT MANAGEMENT
COURSE CODE	:	BFP 40203/BFP 4023
PROGRAMME	:	4 BFF
EXAMINATION DATE	:	JUNE 2013
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** THE QUESTIONS

THIS PAPER CONSIST OF **FOUR (4)** PAGES

Q1 (a) Trafficability generally can be defined as soil's ability to withstand loads generated by vehicles in recurring situations, particularly during the construction process.

i. Describe **three (3)** actions to be taken if trafficability condition is poor.

(3 marks)

ii. Explain the relationship between the trafficability against soil bearing capacity.

(2 marks)

(b) There are three principles states of volume for soil moving at site may exist. The principles are natural states, loose states and compaction states. If the original volume of soil is $20m^3$ and its expansion factor for all three conditions was 1.0, 1.25 and 0.9 respectively, calculate the percentage of swell and shrinkage for the soil mentioned.

(5 marks)

(c) Ready-mixed concrete is supplied to sites in specially designed truck mixers, which are basically a mobile mixing drum mounted on a lorry chassis. Discuss **three (3)** ways that truck mixers can be employed.

(6 marks)

(d) In obtaining maximum advantage from the facilities offered by ready-mixed concrete suppliers, building contractors must place a clear order of the exact requirements. List **five (5)** supply instructions that should contain in this instruction.

(5 marks)

(e) A concrete pump is a tool used for moving large volumes of concrete by using a pump and pipeline. Explain clearly **four (4)** limitation of concrete pump usage.

(4 marks)

Q2 (a) Bulldozers is basically designed to provide tractive power for pushing work especially during the construction site clearance. With the aid of sketches, explain the features and usage of **four (4)** types of dozers blade.

(12 marks)

(b) Describe **five (5)** methods to increase the efficiency of scraper in order to maximize the output.

(5 marks)

(c) Explain **eight (8)** safety checklists in hoist handling and usage

(8 marks)

Q3 (a) The company you work for has been appointed to design the pile system for a project. A characteristic of the soil in the area is comprised of land containing large boulders. As a design engineer, you are required to propose appropriate piling system for the project.

With the aid of sketches, explain the piling process at construction site based on pile machine that you propose and state **four (4)** advantages of that machine compare to others.

(10 marks)

(b) Sketch and discuss the seismic refraction test technology in rock investigation.

(6 marks)

(c) With appropriate diagram, explain briefly **three (3)** types of tractor mounted ripper in breaking up the hard soils.

(9 marks)

Q4 (a) Estimate the annual depreciation and book value at the end of each year for two numbers of Bulldozer by using the Sum-Of-The-Years'-Digits Method. The Sum-Of-The-Years'-Digits Information for one number of Bulldozer are given in below.

Initial Cost	:	RM 458,499.00
Salvage Value	:	RM 39,999.00
Expected Life	:	9 years

(10 marks)

(b) It has been found that one of most serious construction accidents involve by construction equipment operations. As an engineer on construction site you are required to develop safety precautions regarding equipment operation for safety guideline in your construction site.

(15 marks)

-END OF QUESTION-