NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF BUILT ENVIRONMENT

BACHELOR OF QUANTITY SURVEYING (HONOURS) DEGREE

PART IV FIRST SEMESTER EXAMINATIONS APRIL 2009

CONSTRUCTION EQUIPMENT AND METHODS AQS4108

TIME: 3 Hours   **TOTAL MARKS:** 100

Instructions

Answer all) questions only. All question carry equal marks.

Question 1

  a)   Generally, maintenance can be done in two ways. Describe the two ways in which
         maintenance can be done.   (8 marks)

  b)   What are the main functions and advantages of preventive maintenance?   (12 marks)

Question 2

  a)   Explain the terms "depreciation" and "obsolescence" and state how they relate to
         each other.   (8 marks)

  b)   List the various factors that should be considered when purchasing equipment for
         construction.   (12 marks)

Question 3

  a)   Modern project planning involves use of bar chart and / or critical path scheduling.
         Compare the two methods of planning and discuss their advantages and
         disadvantages.   (8 marks)

  b) The data regarding the activities of a project are given below:

Activity	Immediate predecessor	Duration (weeks)
A	-	1
B	A	4
C	A	3
D	A	7
E	B	6
F	C,D	2
G	E,F	7
H	D	9
I	G,H	4

        i)   Draw the project network.   (8 marks)

        ii)   Determine the critical path and project duration.   (4 marks)

Question 4

      a)   Assume you are employed as a quantity surveyor by a contractor, list the factors you would consider when pricing for the use of machinery owned by the Contractor on a project.   (8 marks)

      b)   Distinguish between direct costs, and indirect costs on a project.

                                                                           (12 marks)

Question 5

a) What do you understand by the term "Economic life of an equipment or plant?"

(8 marks)

b) There are several types of equipment or plant that are very essential for use in construction. List at least 3 items of equipment or plant that could be used during the construction of each one of the following projects and also explain the different function of such equipment.

i) Earth dam (4 marks)

ii) Surfaced (tarred) road (4 marks)

iii) High rise concrete building (4 marks)

END OF EXAMINATION