

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF INDUSTRIAL TECHNOLOGY
DEPARTMENT OF CIVIL AND WATER ENGINEERING
BACHELOR OF ENGINEERING (HONOURS) DEGREE
PART III SECOND SEMESTER EXAMINATIONS- AUGUST 2009
CONSTRUCTION MANAGEMENT AND TECHNOLOGY – TCW 3206

INSTRUCTIONS

Answer any four (4) questions. Each question carries 25 marks. Time: 3 hours
Total marks : 100

QUESTION 1

- (a) Describe the major parties to a construction contract and specify their functions and responsibilities. (12 marks)
- (b) Describe the various stages of the construction process, state the key functions and players at each stage. (13 marks)

QUESTION 2

- (a) List the objectives and functions of preventive maintenance. (12 marks)
- (b) List any four (4) documents that form an essential part of Contract Document and explain their importance. (13 marks)

QUESTION 3

- (a) Describe any eight (8) factors that should be taken into account or used as the basis for Tender/ Contract award. (12 marks)
- (b) Describe the major differences between:
- (i) Standard form of contract and
- (ii) Negotiated contract. (13 marks)

QUESTION 4

- (a) Describe the factors that are considered when selecting construction equipment for procurement. (13 marks)
- (b) Explain why Cash Flow forecasting / planning is essential to both the client and contractor. (12 marks)

QUESTION 5

(a) Explain the Terms of payment according to the Zimbabwe General Conditions of Contract (ZGCC). (11 marks)

(b) Draw the network diagram for the project activities listed below:

Activity	Duration 0 (Weeks)	Preceding Activity
A – B	7	–
B – C	10	A – B
B – D	15	A – B
C – D	7	B – C
C – E	12	B - C
D – E	3	B – D, C - D
E – F	5	C – E, D – E

- (i) Find the critical path and duration of the project.
- (ii) How many paths are there from start to finish and what are their durations.
- (iii) What will be the effect on the critical path and project duration, if the duration of activity C – E is reduced by 50%. (14 marks)