



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
SCIENCE AND TECHNOLOGY DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL DIPLOMA

IN

CIVIL ENGINEERING DISCIPLINE COURSES

SUBJECT: Project Management

PAPER NO: 578/15/S11

DURATION: 3 hours

OCTOBER/NOVEMBER 2015 EXAMINATION

REQUIREMENTS

INSTRUCTIONS TO CANDIDATE

Answer any FOUR (4) questions.

This paper consists of 3 printed pages.

QUESTION 1

- a) Define procurement. (2 marks)
- b) In the procurement of materials you often encounter the word 'lead time'. Explain the meaning of this term. (3 marks)
- c) Compare centralised and decentralised purchasing and state the advantages of each. (6 marks)
- d) Discuss the advantages of dual sourcing of materials as compared to multiple sourcing. (4 marks)
- e) Explain the following in relation to Human Resource procurement. (10 marks)
- i) Job evaluation
 - ii) Performance appraisal
 - iii) Job classification
 - iv) Recruiting
 - v) Job ranking

QUESTION 2

- a) Calculate the effective hourly cost of owning and operating a one cubic metre ($1m^3$) dumper on site when the purchase price is \$ 3000.

Assume:

- The dumper has a useful life of 4 years before it is scrapped.
 - Allow for standing time holidays lying idle, say number of working hours reduced to 1500 per year.
 - Scrape value \$150.00
 - Interest on capital 10%.
 - Repairs and renewals allow 15%.
 - Fuel and oil allow $1 \frac{1}{2}$ litres per hour @ \$0.35 per litre.
 - Insurance allow \$75.00 per annum.
 - Driver (assuming an adult rate \$4.20 per hour).
 - Allow $\frac{1}{2}$ hour per day maintenance labour cost.
 - Working hours per day 8 hours
- (10 marks)

- b) Critically analyse three methods of tendering used in the construction industry. (15 marks)

QUESTION 3

The following refers to a Critical Path Method (CPM).

- a) Draw the network.
- b) Determine the earliest and latest starting time/and finish times for each activity.
- c) Show the critical path. (25 marks)

Activity	Duration	Precedence
A	3	-
B	12	-
C	14	-
D	10	A
E	20	B
F	5	B
G	12	C
H	2	D, E
I	10	G
J	3	H, F

QUESTION 4

- a) Explain the essential elements necessary to form a binding contract. (10 marks)
- b) Discuss the duties of a safety and health officer on a construction site. (5 marks)
- c) Explain the following terms used in Project Management.
- i) Risk management (3 marks)
 - ii) Post tender estimates (3 marks)
 - iii) Conceptual cost planning (4 marks)

QUESTION 5

Discuss the factors affecting span of control or span management. (25 marks)

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