MACHAKOS UNIVERSITY

University Examinations 2017/2018

SCHOOL OF ENGINEERING
DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

THIRD YEAR SECOND SEMESTER EXAMINATION FOR DIPLOMA IN CIVIL ENGINEERING

BCECD 317: MEASUREMENT, ESTIMATING AND COSTING

DATE: 20/12/2017 **TIME: 8.30-10.30 AM**

INSTRUCTIONS
Answer Question One and Any Other Two Questions

1 a) Define the following terminology.
   i. Architect s variation note
   ii. Civil Engineering Standard Method of Measurement (CESMM) (4 marks)

   b) Explain the following types of bills of quantities
   i. Elemental bill
   ii. Operational bill (6 marks)

   c) Take off all quantities shown on drawing no.01 up to and including the damp proof course (DPC) . (20 marks)

2 a) Explain any 4 roles of the quantity surveyor throughout the cycle of a construction project. (8 marks)

   b) Explain any 2 roles of a construction project manager (4 marks)

   c) Briefly outline 4 stages in the traditional preparation of bills of quantities. (8 marks)

3. a) Explain the following terms as used in Building and Civil Engineering contracts.
   i. Package deal
   ii. Damages clause

iii. Provisional Sum

iv. Defects Liability Period (10 marks)

b) Explain 4 conditions under which a contract period can be extended. (4 marks)

c) Describe two types of civil Engineering Contracts. (6 marks)

4 a) List 5 sources of cost information. (5 marks)

b) Explain 2 types of payment certificates prepared by the quantity surveyor. (9 marks)

c) Explain the following methods of tendering stating two advantages and disadvantages respectfully.

i. Open Tendering

ii. Selective Tendering (6 marks)

5 a) Explain the following methods of approximate estimating.

i. Unit method

ii. Storey enclosure method (8 marks)

b) Using a line diagram explain the components of a unit rate. (5 marks)

c) Using the data below, calculate a unit rate for, R. C (1.3.6) in ground floor slab (7 marks)

DATA.

- Cement density is 1420 kg per m^3 and priced at ksh.700 per bag.
- Density of sand is 1600 kg per m^3 and priced at ksh. 1500 per ton.
- Ballast density is 1780 kg per m^3 and priced at ksh. 3000 per ton.
- Skilled labour at ksh. 250 per hour.
- Unskilled labour at ksh. 150 per hour.
- Voids on compaction is 50%
- Waste : 5%
- Profit and overheads at 20%
- Hire rate for 200 liter mixer & vibrator at ksh. 1500 per hour.
- Mixer output per hour at 2.4 m^3.

NB

- Make reasonable assumptions where necessary.