TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering & Technology

Department of Building & Civil Engineering

UNIVERSITY EXAMINATION FOR DIPLOMA IN:

DIPLOMA IN CIVIL ENGINEERING

DBCE/JANUARY 2014 (DBCE 14J)

ECV 2303: CIVIL ENGINEERING CONSTRUCTION III

END OF SEMESTER EXAMINATION

SERIES: MAY 2016

TIME ALLOWED: 2 HOURS

Instruction To Candidates;

You should have the following for this examination;

- *Answer booklet*
- *Pocket calculator*

*This paper consists of FIVE questions. Answer **ANY THREE** questions.*
Maximum marks for each part of a question are as shown

Question 1

a) Describe the following types of water supply:

I. Surface water supply
II. Ground water supply (4 marks)

(b) Briefly explain Rain water harvesting and state **FOUR** advantages and **FOUR** disadvantages. (6 marks)

(c) State **FIVE** factors to be considered when selecting location of water Intake (10 marks)

Question 2

(a) Describe the following terms as used in water treatment plant.

I. Coagulation
II. Sedimentation
III. Filtration
IV. Disinfection
V. Intake
(10 marks)

(b) Explain the following:

I. Springs
II. Wells
III. Watershed
IV. Potable water
V. Rock harvesting (10 marks)

Question 3

Q3. (a) Describe the following terms as in waste water treatment:

I. Aerobic digestion
II. Composting
III. Incineration
(6marks)

(b) Describe the following below ground drainage system giving **ONE** advantage and **ONE** disadvantage of each.

I. Combine system
II. Totally separate system
III. Partially separate (14 marks)

Question 4

(a) Explain briefly the following types of dams:

i. Concrete arch dam
ii. Concrete gravity dam
iii. Rock fill dam
iv. Earth fill dam (10 marks)

(b) Describe the Biogas digester and state **FOUR** advantages and **FOUR** disadvantages (10 marks)

Question 5

(a) Briefly describe the **THREE** stages generally involved in sewage treatment. (9 marks)

(b) Define the following terms as used in sewage treatment:

(i) Aerobic treatment

(ii) Anaerobic

(iii) Chemical Oxygen Demand (COD)

(iv) Biochemical Oxygen Demand (BOD)

(8 marks)

(c) Differentiate between water treatment and wastewater treatment (3 marks)