

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2016/2017**

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR THE DIPLOMA IN CIVIL ENGINEERING

**ECV 2201: CONCRETE TECHNOLOGY I**

**DATE: DECEMBER, 2016 TIME: 11/2 HOURS**

**INSTRUCTIONS: -** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Define the term ‘cement’ (2 Marks)
2. State any three raw materials that are used in the manufacture of cement. (3 Marks)
3. Using a schematic diagram, define the manufacture of cement, using the wet method of manufacturing. (10 Marks)
4. Name any five types of cement, explaining where each type is used in the construction industry. (15 Marks)

**QUESTION TWO (15 MARKS)**

1. Discuss the methods by which each of the following materials is stored in a building site;
2. Cement (3 Marks)
3. Fine aggregate (3 Marks)
4. Coarse aggregate (3 Marks)

b) (i) What do you understand by the term deleterious substances in aggregate?(2 Marks)

(ii) Discuss any two of the substances named above. (4 Marks)

**QUESTION THREE (15 MARKS)**

1. Give detailed definition of the following terms as used in fresh concrete , paying more attention to the causes of each;
2. Popout (3 Marks)
3. Honey comb (3 Marks)
4. Cold joints (3 Marks)
5. Explain the following terminologies as used in concrete technology;
6. Hydration (2 Marks)
7. Setting (2 Marks)
8. Curing (2 Marks)

**QUESTION FOUR (15 MARKS)**

1. State and describe any five impurities in water that cause adverse effects on hardened concrete. (9 Marks)
2. Discuss the role of aggregate in a concrete mix.
3. Fine aggregate’s role (3 Marks)
4. Coarse aggregate’s role (3 Marks)