



**MURANG'A UNIVERSITY COLLEGE**  
(A constituent college of Jomo Kenyatta University of Agriculture and Technology)  
**SCHOOL OF ENGINEERING**

**DEPARTMENT OF BUILDING AND CIVIL**

**COURSE CODE: SEB 1328**

**UNIT: TRANSPORTATION ENGINEERING I**

**CLASS: 14 D JAN**

**END OF SEMESTER I EXAMINATION**

**DATE: 11<sup>TH</sup> DECEMBER 2015**

**TIME: 2HOURS**

***Instructions:-***

- Question ONE is compulsory Attempt any other TWO questions.
- Marks for each question are allocated at the end of each.

1. a. State **five** types of Road systems in Kenya (5mrks)
- b. Highlight the purpose of motorway road systems (4mrks)
- c. Explain the reasons for planning a motor way system during planning (6mrks)
- d. Highlight **four** types of roads (4mrks)
- e. Describe construction of earth roads (6mrks)
- f. Differentiate between low cost roads and stabilized roads (5mrks)
2. a. Highlight **three** types of low cost roads (3mrks)
- b. Explain **three** stabilizers used to increase the strength and durability of a road. (6mrks)
- c. Describe the procedure of constructing a flexible road (6mrks)
- d. State the reasons for compacting the road (5mrks)
3. a. Describe **three** types of surveys used during transportation planning (6mrks)

(4mrks)

(8mrks)

- b. State *four* informations that are obtained during survey
  - c. Discuss the stages involved during transportation planning
  - d. State *four* factors that govern the thickness of the road metal (2mrks)
- 4.
- a. Using appropriate sketches show four types of track junctions (4mrks)
  - b. Highlight the following types of track maintenance (4mrks)
    - i. Daily maintenance
    - ii. Periodic maintenance
  - c. Highlight the advantages and disadvantages of the following types of rails (6mrks)
    - i. Double headed
    - ii. Bull headed
    - iii. Flat footed
  - d. Using appropriate sketches highlight the following types of rail joint (6mrks)
    - i. Supported
    - ii. Suspended
    - iii. Welded
- 5.
- a. State *three* functions of water in rigid pavements (3mrks)
  - b. Using appropriate sketches describe a flexible road (5mrks)
  - c. Explain three classification of road sign that are used sating one example under each (6mrks)
  - d. Explain classes of road markings and give their functions (6mrks)