MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIFTH YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (CIVIL ENGINEERING)

ECV 505: ENVIRONMENTAL ENGINEERING

DATE: 13/8/2021 **TIME: 8.30-10.30 AM**

INSTRUCTIONS

1. *This paper comprises of five questions. Answer **three** questions*
2. *Question one is **compulsory** and carry 30 marks*
3. *Answer any other **two** questions*
4. *Reasonable assumptions should be made where necessary*

QUESTION ONE(COMPULSORY) (30 MARKS)

a) Define the following:

i. Scoping (2 marks)

ii. Environment (2 marks)

iii. Environmental Engineering system (2 marks)

iv. Contaminant (2 marks)

v. Greenhouse gases (2 marks)

b) In Kenya Forest cover has been declining every year due to increase in population and demand for forest products such as timber and fibre. Describe six benefits that Kenyan citizens will enjoy from forest conservation strategies (20 marks)

QUESTION TWO (20 MARKS)

a) Wetland ecosystems act as natural sinks for water pollutants and nutrients. Enumerate Five points to validate this assertion. (10 marks)

b) Discuss Five most appropriate measures to be undertaken for climate change prevention, mitigation and adaptation in Kenya. (10 marks)

QUESTION THREE (20 MARKS)

a) Discuss impact identification step in EIA process. (10 marks)

b) Prevention and control measures is one of the three types of mitigation measures, discuss in depth how it works and provide four practical examples. (10 marks)

QUESTION FOUR (20 MARKS)

a) Define marine water contamination and discuss three sources of marine water contamination (10 marks)

b) Discuss Five natural hazards in Kenyan and give their impact on economic development of the country. (10 marks)

QUESTION FIVE (20 MARKS)

a) Define air pollution and identify its primary sources. What is the effect of pollution on human wellbeing support with examples? (10 marks)

b) Describe ground water pollution and highlight seven sources of groundwater contamination. (10 marks)