



MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

FOURTH YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR IN ENVIRONMENTAL SCIENCES

ENS 454: MINING AND SUSTAINABLE DEVELOPMENT

DATE: 22/7/2019

TIME: 8.30-10.30 AM

INSTRUCTIONS;

Answer question ONE and any other TWO questions

QUESTION ONE (30 MARKS)

- a) Discuss the roles that mining plays in realizing any one sustainable development goal
(10 marks)
- b) Briefly discuss any **FIVE** strategies to protect water resources from the adverse impacts of mining activities and operations
(10 marks)
- c) Highlight **FIVE** ways in which a community can participate in the planning of mined areas
(10 marks)

QUESTION TWO (20 MARKS)

Using named mining project, discuss any **FOUR** adverse environmental impacts of Acid Rock Drainage and indicate how to manage the impacts

QUESTION THREE (20 MARKS)

Discuss the need for and the steps you will follow to develop an effective monitoring programme for various mining activities in an area

QUESTION FOUR (20 MARKS)

Suppose you have been appointed to oversee the development a strategy to manage various adverse impacts of mining in your County, discuss how to undertake the assignment and highlight any likely challenges you will face

QUESTION FIVE (20 MARKS)

Discuss the steps you will follow in establishing a mechanism to deal with health and safety issues associated with mining activities and operations in Kenya