



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION
SCIENCE WITH IT
2ND YEAR 1ST SEMESTER 2016/2017 ACADEMIC YEAR
MAIN CAMPUS

COURSE CODE: PWE 3311

COURSE TITLE: WATER AND ENVIROMENTAL QUALITY

EXAM VENUE:

STREAM: (BED Sc.)

DATE: 27/04/16

EXAM SESSION: 9.00 – 11.00 am

TIME: 2 HOURS

Instructions:

- 1. Answer question 1 (compulsory) and ANY other 2 questions.**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A: ATTEMPT ALL QUESTION (30 MARKS)

QUESTION 1

- (a) Discuss the six main processes involved in removal of pollutants from wastewater. 8 Marks
- (b) Show by using an equation how the conversion of organic matter during aerobic oxidation can be carried out by mixed bacterial cultures. 8 Marks
- (c) Describe Chemical Oxygen Demand as a water pollution indicator 7 Marks
- (d) Give three water borne diseases and their causative pathogen 7 Marks

SECTION B: ATTEMPT ANY TWO QUESTIONS (40 MARKS)

QUESTION 2

- (a) Discuss how can the anaerobic treatment of waste waters be achieved?. 8 Marks
- (b) Describe the following filters and show how better performance can be attained to increase filtration of wastewaters.
- (i) Trickling or percolating filters
- (ii) Rotating biological contractors 12 Marks

QUESTION 3

- (a) Calculate 10 Marks
- (b) Discuss the prevention and control of marine and lake pollution 10 Marks

QUESTION 4

- (a) Biochemical Oxygen Demand is an important chemical water pollution indicator, explain its significance and describe giving an example the procedures involved.
- (b) Why are microorganisms used as the indicators of the water quality tests? 10 Marks.