



KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

THIRD YEAR EXAMINATION FOR THE AWARD OF THE DEGREE
OF BACHELOR OF SCIENCE IN APPLIED AQUATIC SCIENCES

FIRST SEMESTER 2022/2023
(SEPTEMBER - DECEMBER, 2022)

FIAQ 364: WATER QUALITY AND POLLUTION CONTROL

STREAM: Y3 S1

TIME: 2 HOURS

DAY: TUESDAY , 12:00 P.M -2:00 P.M

DATE: 06/12/2022

INSTRUCTIONS:

- 1. Do not write anything on this question paper.***
- 2. Answer ALL Questions in Section A (Compulsory) and any other TWO Questions in section B.***

SECTION A (40 MARKS)

1. Define the following terms: (3 Marks)
 - i. Water quality
 - ii. Water quality assessment
 - iii. Water quality monitoring
2. State any five objectives of water quality monitoring (5 Marks)
3. Briefly explain the effects of any three organoleptic parameters of water quality (3 Marks)
4. Distinguish between:
 - (i) Total Suspended Solids (TSS) and Total Dissolved Solids (TDS)
 - (ii) Alkalinity and Acidity
 - (iii) Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) (6 Marks)

5. Outline any six characteristics of an ideal bio-indicator used for aquatic ecosystem monitoring (3 Marks)
6. State four advantages of using macroinvertebrates as biological indicators of water quality. (4 Marks)
7. With the help of specific examples, discuss the nature and types of water pollutants. (6 Marks)
8. Briefly explain three types treatment of municipal wastewater (3 Marks)
9. Briefly explain four impacts of global climatic changes on water quality (4 Marks)
10. Mention any six measures which can be implemented to control the impacts of non-point sources of pollution (3 Marks)

SECTION B

11. (i) Describe three types of bio-indicators used for aquatic ecosystem monitoring (6 Marks)
(ii) Discuss common approaches used for biomonitoring of river ecosystems (9 Marks)
12. Discuss the causes and negative impacts of eutrophication in aquatic ecosystems (15 Marks)
13. Discuss in detail the physical, chemical and biological effects of water abstraction in an aquatic environment. (15 Marks)