

**BINDURA UNIVERSITY OF SCIENCE EDUCATION**  
**FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE**  
**DEPARTMENT: NATURAL RESOURCES**  
**PROGRAMME: BSc NATURAL RESOURCES MANAGEMENT**

**COURSE CODE: NRM220 (2): INTEGRATED WATER RESOURCES MANAGEMENT**

**DURATION: 2 HOURS**

**TOTAL MARKS: 70**

**INSTRUCTIONS TO CANDIDATES**

NOV 2023

Answer *Three* questions out of the following five questions. You must answer question *One* from Section A and any *Two* questions from Section B.

**SECTION A (COMPULSORY)**

1. (a) Define the following:

i. Virtual water trade,	[1 Mark]
ii. Water footprint.	[1 Mark]
iii. Water balance.	[1 Mark]
- (b) What is the role of legislation in Integrated Water Resources Management (IWRM)? [4Marks]
- (c) Outline the importance of water demand projections in water resources planning and development. [5 Marks]
- (d) Explain the importance of inter – sectorial stakeholder participation and cooperation in shared water resources use and management. [8 Marks]
- (e) Evaluate the influence of anthropogenic activities on the water balance of a named catchment. [10 Marks]

**SECTION B**

2. Discuss the legislation and institutional arrangements that are necessary in the implementation of IWRM of a named river basin. [20 Marks]
3. (a) Explain the causes of conflict over a shared water resource. [10 Marks]  
(b) Outline how the causes of conflict identified in 3(a) can be resolved. [10 Marks]
4. (a) Describe the hydrological processes that affect the quality of surface water bodies. [10 Marks]

- (b) Formulate a water balance equation of a named hydrological system. [10 Marks]
5. (a) Describe the practical options that can be used to increase water supply of a named community. [10 Marks]
- (b) Outline the major thrusts of the following conventions:
- i. Helsinki Convention, [5 Marks]
  - ii. United Nations water courses convention. [5 Marks]

**END OF PAPER**