



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS**  
**SEPTEMBER/OCTOBER 2015 EXAMINATION**

**SCHOOL OF SCIENCE AND TECHNOLOGY**

**COURSE CODE:** ESM 322  
**COURSE TITLE:** WATER AND WASTE WATER MANAGEMENT

**DURATION: 2 HOURS**

**INSTRUCTION: ANSWER ANY FOUR QUESTIONS**

1. (a) In simple clear terms, what does secondary treatment of wastewater involve? (2 ½ mks)  
(b) Discuss the efficient options in the secondary treatment. (15 mks)
2. (a) In a tabular form, identify the various levels of water treatment and their objectives. (12 ½ mks)  
(b) Mention the types of Latrine systems. (5 mks)
3. In a tabular form, write on human activities that have potential impact on the freshwater ecosystem and the function at risk. 17 ½ mks
4. (a) Highlight five fresh water pollutants and their sources. 12 ½ mks  
(b) List five reasons that justifies water and waste management. 5mks
5. (a) Identify five water borne diseases and their causing organisms. 5 mks  
(b) What are the symptoms and the vehicle of transmission of the diseases and mentioned in 5(a). 12 ½ mks
6. (a) What is Primary treatment with respect to On-site Sewage Disposal system? 11½ mks  
(b) What do you understand by COD and BOD? 6mks