**

**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**FACULTY OF SCIENCES**

**DEPARTMENT OF ENVIRONMENTAL SCIENCE**

**Plot 91, Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja**

**JULY 2018 EXAMINATIONS**

COURSE CODE: ESM 322 CREDIT UNIT: 2

COURSE TITLE: WATER AND WASTEWATER MANAGEMENT**TIME: 2 HOURS**

INSTRUCTION:Attempt question number ONE (1) and any other THREE (3) questions. Question number one (1) is compulsory and carries 25 marks, while the other questions carry equal marks (15) each

1. (a) Define wastewaters *5mks*

 (b) Justify the concept of water and waste management. *10mks*

 (c) Outline and discuss five types of wastewater, based on their sources and characteristics.*10mks*

1. (a) Outline and discuss five pollutants of water and their sources. *7mks*

(b) Discuss with appropriate examples, four effects of contaminated water on mankind*4mks*

(c) Differentiate between sources of freshwater and saline water *4mks*

1. Write succinct notes on the following:
2. Eutrophication *5mks*
3. Salinisation *5mks*
4. Thermal pollution *5mks*
5. (a) Describe three ways by which wastewater can be reused. *3mks*

(b) Elucidate four motivating factors for wastewater reclamation and reuse. *9mks*

(c) Highlight three issues in wastewater Reuse *3mks*

1. (a) Enumerate seven (7) classes of water pollutants.. *5mks*

(b) Explain with appropriate examples, the point and non-point sources of water pollutants. *10mks*