



NATIONAL OPEN UNIVERSITY OF NIGERIA
Plot 91, Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja
FACULTY OF SCIENCES
DEPARTMENT OF ENVIRONMENTAL SCIENCE
POP EXAMINATION 2022_2

COURSE CODE: ESM444

TIME: ALLOWED: 2HRS

CREDIT UNIT: 2

COURSE TITLE: INDUSTRIAL WASTE AND INDUSTRIAL WASTEWATER TREATMENT

Instruction: Attempt question number ONE (1) and any other TWO (2) questions. Question number one (1) carries 30 marks, while the other questions carry (20) marks each.

- 1a. Write on the various methods of solid waste disposal 12 marks
- 1b. Explain the method used in managing organic wastes. 10 marks
- 1c. What can be done to resolve issues related to the use of boiler water systems? 8 marks

- 2a. List the advantages of the most commonly used recirculation system (10marks)
- 2b. Can industrial wastewater be treated by biochemical processes? Discuss (10marks)
- 3a. How can wastes be minimized. 4marks
- 3b. What is waste management 6marks
- 3c. In what ways can toxic materials from industrial wastewater be treated/removed 7marks
- 3d. What is Waste Recycling 3marks
- 4a. Outline and explain two Usefulness of Recycling 4marks
- 4b. List three (3) category of wastes that are recyclable 6marks
- 4c. Write short notes on Close re-circulating water system 10marks

- 5a. What are the major problems associated with the use of boiler system. 6marks
- 5b. How can solids, oils and grease be removed from industrial wastewater 6marks
- 5c. What do the two types of water-cooling systems involve 4marks
- 5d. Discuss briefly the main impact of industrial waste on the environment 4marks