



National Open University of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science
JUNE, 2020_1 EXAMINATION

COURSE CODE: ESM 444

COURSE TITLE: Industrial Waste and Industrial Water Treatment.

CREDIT: 2 Units

TIME ALLOWED: 2 Hours

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

- 1a) What is recycling? **(6mks)**
- (b) Explain in detail the recycling of wastes. **(14mks)**
- (c) Enumerate the wastes that are commonly recycled. **(5mks)**

- (2a) Explain the types of Recirculation Water System. **(9mks)**
- (b) Outline the applications of closed recirculation water system. **(6mks)**

- (3a) What is waste management? **(8mks)**
- (b) Explain the integrated waste management method. **(3mks)**
- (c) Explain the incineration method of waste management. **(4mks)**

- (4) Discuss the problems of boilers. **(15mks)**

- (5a) What is Industrial wastewaters? **(2mks)**
- (b) Enumerate the sources of industrial wastewaters. **(5mks)**
- (c) State the forms of contaminants in wastewaters. **(5mks)**
- (d) Enumerate the wastes produced in industries. **(3mks)**