



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

**COURSE CODE: EMT 304**

**COURSE TITLE: Hazardous Substances Management**

**CREDIT: 2 Units**

**TIME ALLOWED: 2 Hour**

**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.

- 1a. Mention sources of hazardous substances into the environment (**2marks**)
- 1b. What is acclimation in waste treatment? (**2marks**)
- 1c. Explain the rules guiding the construction of surface impoundment (**6marks**)
- 1d. Discuss the criteria used in classifying waste and hazardous substances? (**5marks**)
- 1e. Briefly describe sample types (**4marks**)
- 1f. Write out steps to be considered during each sampling operation or events (**6marks**)
  
- 2a. Itemize the problems of hazardous substance management (**7marks**)
- 2b. Explain the environmental and geological factors affecting disposal sites (**8marks**)
  
- 3a. Discuss the environmental factors and parameters to be considered in choice of disposal site (**7marks**)
- 3 b. Explain the acclimation procedure in waste management? (**8marks**)
  
- 4a. List all the parameters involved in waste water preparation and characterization (**10marks**)
- 4b. Mention the advantages of fluidized bed incineration (**5marks**)
  
- 5a. List the thermal treatments that can be given to hazardous wastes (**2marks**)
- 5b. Discuss the process of thermal treatment of hazardous waste (**13marks**)