



National Open University of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science...
2021_1 EXAMINATION

COURSE CODE: EMT304

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) Describe the preparation for sampling hazardous substance (5 marks)
 - 1b) Outline the two methods for drum sampling hazardous substance (2 marks)
 - 1c) Succinctly explain the general sampling procedure of hazardous substance in the physical state (5 marks)
 - 1d) In a tabular form, state the listing of hazardous characteristics that has been provided by the United Nations (5 marks)
 - 1e) List any five healthcare wastes that is capable of producing injury or disease including many sorts of hazardous wastes (5 marks)
 - 1f) Describe two general sampling techniques for defining waste and waste stream characteristics (3 marks)
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- 2a) What are the five rules guiding the construction of surface impoundment? (5 marks)
 - 2b) Explain how treated waste can be used in land treatment (5 marks)
 - 2c) Discuss the disposal of treated waste into water bodies (5 marks)
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- 3a) Write short note on waste minimization (5 marks)
 - 3b) In accordance to IAEA definition, explain how radioactive waste is to be disposed (5 marks)
 - 3c) Discuss the environmental and geological factors affecting disposal sites (5 marks)
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- 4a) What are environmental factors to be considered in the choice of disposal site? (5 marks)
 - 4b) Discuss the problems of hazardous substance and management (5 marks)
 - 4c) Outline the serious accident that occurred with the release of hazardous substances in December 3, 1984 in Bhopal India (5 marks)
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- 5a) Explain any two modifications undergone by activated sludge (5 marks)
 - 5b) Discuss the procedures of solid waste sampling (5 marks)
 - 5c) Write short note in the following: Multiplehearth incineration and Passabant ash process (5 marks)