## NATIONAL OPEN UNIVERSITY OF NIGERIA
## PLOT 91 CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESS WAY, JABI - ABUJA.

## FACULTY OF SCIENCE

### OCTOBER/ NOVEMBER 2016 EXAMINATION

**COURSE CODE: CHM 314**

**COURSE TITLE:  Environmental Chemistry**

**Time:          2 Hours**

**INSTRUCTION:    Answer any Four Questions**

## QUESTION ONE

In a tabular form, compare and contrast between the troposphere and stratosphere.

($17^1/_2$ Marks).

## QUESTION TWO

ai.) What are the criteria used to designate a chemical substance as a priority pollutant?                                        (4marks).

aii.) State and explain briefly the approaches of priority pollutant control.
($7^1/2$ marks).

b.)  Discuss briefly the sources and effects of sewage in an aquatic environment.
(6marks).

## QUESTION THREE

Enumerate on the sources and effects of $SO_2$ in the environment.

( 17$^1$/2 marks)

## QUESTION FOUR

State and describe the types of conventional waste water treatment.

(17$^1$/2 marks).

## QUESTION FIVE

ai.)   Write briefly on Composting as a solid waste disposal method.

(7  marks)

bi.)   Explain briefly Sanitary Landfill.                                    (4$^1$⁄2 marks)

bii.)   State three reasons why open dumping is not a good choice of solid waste disposal.                                                                (6 marks)

## QUESTION SIX

a.) 10 ml of a river sample was transferred to a 300ml BOD bottle and diluted to 300 ml with organic free, oxygen saturated water. The initial dissolved oxygen was determined and found to be 9.1 mg/L. The BOD bottled was tightly stoppered and placed in the incubator at $20^0$ C for five days after which the dissolved oxygen was again determined and found to be 4.4 mg/L. Calculate the BOD of this wastewater. If the WHO permissible limit of BOD in a sample of river water is 5 mg/L, what information can be derived from the BOD calculated?

(13 marks)

b.) State the application of BOD data

(4$^1$/2 marks)