

2015

(5th Semester)

ENVIRONMENTAL SCIENCE

SEVENTH PAPER (EVS-503)

(Environmental Chemistry and Geosciences)

Full Marks : 55

Time : 2½ hours

(PART : B—DESCRIPTIVE)

(Marks : 35)

*The figures in the margin indicate full marks
for the questions*

1. Give detailed accounts of the following :

3½+3½=7

(a) Concept and scope of environmental
chemistry

(b) Chemical equilibrium

Or

Write briefly on the following :

3½+3½=7

(a) Conductance

(b) Oxidation and reduction

G16/166a

(Turn Over)

2. Describe the concepts of DO and BOD. 7

Or

Give detailed accounts of the following:

$3\frac{1}{2}+3\frac{1}{2}=7$

- (a) Chemical specification
(b) Surfactants

3. Describe the components and working principles of spectrophotometry. Add a few points on applications of spectrophotometry.

$5+2=7$

Or

Write briefly on the following :

$3\frac{1}{2}+3\frac{1}{2}=7$

- (a) Titrimetry
(b) Flame photometry

4. Discuss the structure and components of the earth. 7

Or

Discuss the general relationship among landscape, biomes and climates.

5. Write briefly on the following : $3\frac{1}{2}+3\frac{1}{2}=7$

- (a) Fertility rate
(b) Mortality rate

Or

Discuss in detail population explosion and its impact on the environment. 7

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(PART : A—OBJECTIVE)

(Marks : 20)

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Answer **all** questions

SECTION—A

(Marks : 5)

I. Put a Tick (✓) mark against the correct answer in the brackets provided : 1×5=5

1. The gain of electron, loss of oxygen and gain of hydrogen is

(a) oxidation ()

(b) reduction ()

(c) redox reaction ()

(d) None of the above ()

2. The method used for determination of COD is known as

- (a) Winkler method ()
- (b) oxidation-reduction method ()
- (c) reflux digestion method ()
- (d) acid-base method ()

3. Beer-Lambert law, which states that the concentration of solute is proportional to absorbance is applied in

- (a) titrimetry ()
- (b) colorimetry ()
- (c) flame photometry ()
- (d) None of the above ()

4. Gaseous tidal hypothesis on the theory of origin and evolution of earth was proposed by

- (a) Jeans and Collins ()
- (b) Jeans and Jeffrey ()
- (c) Jeffrey and Collins ()
- (d) Michael and Stevans ()

5. World Population Day is celebrated every year on

(a) 11th June ()

(b) 21st June ()

(c) 11th July ()

(d) 21st July ()

SECTION—B

(Marks : 15)

II. Write short notes on the following :

3×5=15

1. Characteristics of a chemical system in equilibrium

2. Difference between BOD test and COD test

3. Colorimetry

(15)

ii. Write short notes on the following:

1. Characteristics of a chemical system in equilibrium.

4. The planetesimal hypothesis

Types of course

(5th Semester)

ENVIRONMENTAL SCIENCE

SEVENTH PAPER (EVS-503)

(Environmental Chemistry and Geosciences)

(PART - A - OBJECTIVE)

(Marks : 20)

The figures in the margin indicate full marks for the questions

Answer all questions

SECTION - A

(Marks : 5)

1. Put a Tick (✓) mark against the correct answer in the brackets provided.

(5-5)

The gain of electron, loss of oxygen and gain of hydrogen is

(a) oxidation

(b) reduction

(c) redox reaction

(d) None of the above

5. Types of census

- (a) ...
- (b) ...
- (c) ...
- (d) ...

The Lambert law which states that the concentration of solute is proportional to absorbance is applied in

- (a) titrimetry
- (b) colorimetry
- (c) flame photometry
- (d) None of the above

Gasoline tidal hypothesis on the theory of origin of life was proposed by

- (a) Jeans and Haldane
- (b) Jeans and Miller
- (c) Jeffrey and Haldane
- (d) Michael and Strydom ★★★