# KUMARAGURU
## college of technology
### character is life

Register Number:……….……

**M.E DEGREE EXAMINATIONS: JUNE 2017**

(Regulation 2015)

Second Semester

**ENERGY ENGINEERING**

P15EET202 : Environmental Engineering and Pollution Control

## COURSE OUTCOMES

**CO1:** Illustrate the causes of global atmospheric change.

**CO2:** Explain the various environmental legislations.

**CO3:** Indentify the sources, characteristics and energy recovery of solid waste.

**CO4:** Illustrate the sources, characteristics and energy recovery of solid waste.

**CO5:** Outline the environmental impact assessment for various projects.

**Time: Three Hours**                                                              **Maximum Marks: 100**

### Answer all the Questions:-

### PART A (10 x 1 = 10 Marks)

1. Assertion (A): Chlorofluorocarbons deplete ozone.         CO1   [$K_1$]

   Reason (R): These compounds contain Chlorine, Bromine and Fluorine.

   a) A. Both (A) and (R) are true and (R) is the correct explanation of (A)
   b) Both (A) and (R) are true but (R) is not the correct explanation of (A)

   c) (A) is true but (R) is false
   d) (A) is false but (R) is true

2. Ozone of found in         CO1   [$K_1$]

   a) Mesosphere
   b) Ionosphere

   c) Stratosphere
   d) Exosphere

3. Most of the atmospheric air pollutants are present in large quantity in   CO2   [$K_2$]

   a) trophosphere
   b) stratosphere

   c) thermosphere
   d) mesosphere

4. Matching type item with multiple choice code         CO2   [$K_3$]

| List I | List II |
|---|---|
| A. CFC | i. Bhopal Gas Tragedy |
| B. CO2 | ii. Global Warming |
| C. BOD | iii. Ozone Depletion |
| D. MIC | iv. Water Pollution code |

|   | A | B | C | D |
|---|---|---|---|---|
| a) | iii | ii | iv | i |
| b) | iii | iv | ii | i |
| c) | ii | iv | iii | i |
| d) | iii | i | ii | iv |

5. The polluted water is one which                                          CO3   [K₁]

   a) contains pathogenic pacteria

   b) consists of undesirable substances rendering it unfit for drinking and domestic use

   c) is safe and suitable for drinking and domestic use

   d) is contaminated

6. Turbidity of water is an indication of the presence of                    CO3   [K₂]

   a) suspended inorganic matter

   b) dissolved solids

   c) dissolved gases

   d) floating solids

7. Assertion (A): Negatively charged soil particles attract positive ions like $Ca^{++}$ and $Mg^{++}$    CO4   [K₁]

Reason (R): The attraction keeps the ions at soil level for ready availability.

   a) Both (A) and (R) are true and (R) is the correct explanation of (A)

   b) Both (A) and (R) are true but (R) is not the correct explanation of (A)

   c) (A) is true but (R) is false

   d) (A) is false but (R) is true

8. Metals are produced as waste in industries like ……………                    CO4   [K₂]

   a) skiing

   b) mining

   c) electroplating

   d) population control

9. The main industrial source of emission of hydrogen sulphide air pollutant is    CO5   [K₁]

   a) petroleum refineries.

   b) coal based thermal power plants.

   c) pulp and paper plant.

   d) metallurgical roasting & smelting plant.

10. Persons working in cement plants and limestone quarries are more prone to disease like    ~~CO5~~   [K₃]

   a) silicosis

   b) asthma

   c) flourosis

   d) cancer

## PART B (10 x 2 = 20 Marks)

11. Define Global warming.                                                    CO1   [K₁]

12. List any four characteristics of ecosystem.                              CO1   [K₁]

13. Collect the different sources of air pollution.                          CO2   [K₆]

14. Identify the effects of air pollution on animals.                        CO2   [K₄]

15. Name four important causes of water pollution.     CO3   [$K_1$]

16. Recognize the steps involved in aeration water carry out.     CO3   [$K_1$]

17. Interpret the types of Solid Wastes.     CO4   [$K_3$]

18. List the examples of residential and commercial solid wastes.     CO4   [$K_1$]

19. Name important fertilizers produced in the fertilizer industry.     CO5   [$K_1$]

20. Demonstrate the three phase of treatment of industrial effluents.     CO5   [$K_3$]

## PART C (6 x 5 = 30 Marks)

21. Demonstrate briefly the harmful effects of ozone layer depletion on human beings.     CO1   [$K_2$]

22. Briefly describe about the impacts of carbon monoxide on human health.     CO2   [$K_2$]

23. Many sources of water pollution are found within the home. Suggest the actions to be taken to reduce water pollution.     CO3   [$K_4$]

24. Explain the characteristics of solid wastes.     CO4   [$K_2$]

25. Explain the biodegradable and non-biodegradable pollutants with examples.     CO4   [$K_2$]

26. Evaluate the main sources of industrial units cause noise pollution. Also mention the effects of noise pollution.     CO5   [$K_5$]

## Answer any FOUR Questions
## PART D (4 x 10 = 40 Marks)

27. Elaborate in detail: Various principle pollutants which pollute the air, water and land.     CO1   [$K_3$]

28. Briefly explain the types, sources and effects of air pollution.     CO2   [$K_2$]

29. Explain the preliminary, primary and secondary methods of waste water treatment.     CO3   [$K_2$]

30. Briefly discuss the importance of solid waste management.     CO4   [$K_2$]

31. Elaborate in detail: Industrial and other sources of air pollution.     CO5   [$K_3$]

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