Reg. No. : | | | | | | | | | | |

Question Paper Code: 99172

B.E./B.Tech. DEGREE EXAMINATION, MAY 2024

Open elective

Computer Science Engineering

19UCE972 - AIR POLLUTION AND CONTROL ENGINEERING

(Common to EEE, ECE, MECH, IT , Chemical and biomedical Engineering branches)

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Acid rain is caused by increase in the atmospheric concentration of------- CO1- U

   (a) Ozone and dust (b) SO_2 and NO_2 (c) SO_3 and CO (d) CO_2 and CO

2. Among the following, a secondary pollutant is_____ CO1- U

   (a) PAN (b) SO_2 (c) CO (d) Aerosol

3. Which of the following is a primary parameter which influences air pollution? CO1- U

   (a) Humidity (b) Solar Radiation (c) Temperature (d) Visibility

4. Most favorable plume with respect to minimizing air pollution is _____ CO1- U

   (a) Fumigating (b) Trapping (c) Lofting (d) Looping

5. The particulate collected from the scrubbers are_____ CO2- R

   (a) wed (b) dry (c) gaseous (d) all the above

6. Ammonia is used as an absorbent for controlling-_____ CO2- R

   (a) NO_2 (b) SO_2 (c) H_2S (d) hydrocarbons

7. The operating temperature for halogenated hydrocarbons in catalytic oxidation process is CO2- R

   (a) 200-400^0 F (b) 400-800^0 F (c) 900-1200^0 F (d) Above 1200^0 F

8. The following gases are produced during the combustion cycle, except CO6- U

   (a) Unburned HC (b) CO (c) NO_x (d) Lead

9. The main sources of noise pollution are ------- CO4- U

(a) Automobiles (b) Musical equipment (c) Heavy machinery (d) All the above

10. Level of noise recommended is most ------ CO4- U

(a) 30-40dB (b) 95-100 dB (c) 85-90dB (d) 75-80dB

PART – B (5 x 2= 10 Marks)

11 What is a pollutant? CO1- U

12 Define Meteorology. CO2- U

13 What are the types of scrubbers? CO6- U

14 List out the different absorption process for inorganic gases. CO6- U

15 List out some measures to control noise pollution. CO4- U

PART – C (5 x 16= 80 Marks)

16. (a) Write in detail about analysis of particulate and gaseous pollutants. CO1- U (16)

Or

(b) Explain in detail about the Air quality and Emission standards. CO1- U (16)

17. (a) Explain in detail about the meteorological factors influencing air pollution. CO1- U (16)

Or

(b) Explain in detail about the plume rise pattern with neat sketch. CO1- U (16)

18. (a) Discuss in detail about the different mechanisms involved in collection of Particulate pollutants with neat sketch. CO3-App (16)

Or

(b) Explain about gas particle interaction mechanism. CO3-U (16)

19 (a) Explain in detail about SO_X removal process. CO6- U (16)

Or

(b) Explain about the operation and management plan to be adopted for bio filteration process. CO6- U (16)

20 (a) Explain briefly on Radon pollution and sick building syndrome. CO5- App (16)

Or

(b) Is it possible to control noise Pollution in large scale industries? Explain the process. CO4- U (16)