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Question Paper Code: 99172

B.E./B.Tech. DEGREE EXAMINATION, MAY 2022

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) SO₂ and NO₂ (c) SO₃ and CO (d) CO₂ and CO
2. Among the following, a secondary pollutant is_____ CO1- U
(a) PAN (b) SO₂ (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) wet (b) dry (c) gaseous (d) all the above
6. Ammonia is used as an absorbent for controlling-_____ CO2- R
(a) NO₂ (b) SO₂ (c) H₂S (d) hydrocarbons
7. The operating temperature for halogenated hydrocarbons in catalytic CO2- R
oxidation process is
(a) 200-400⁰ F (b) 400-800⁰ F (c) 900-1200⁰ F (d) Above 1200⁰ 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)
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 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)
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 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)
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 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 filtration 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)