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**Question Paper Code: 99172**

B.E./B.Tech. DEGREE EXAMINATION, NOV 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)

- Which of the following AQI denotes severe pollution? CO3- App  
(a) 101-200      (b) 201-300      (c) 301-400      (d) 401-500
- The regions of atmosphere beyond 700 km is \_\_\_\_\_ CO2- U  
(a) Ionosphere      (b) Exosphere      (c) Thermosphere      (d) none of these
- Which of the following is a primary parameter which influences air pollution? CO1- U  
(a) Humidity      (b) Solar Radiation      (c) Temperature      (d) Visibility
- Most favorable plume with respect to minimizing air pollution is \_\_\_\_\_ CO1- U  
(a) Fumigating      (b) Trapping      (c) Lofting      (d) Looping
- The particulate collected from the scrubbers are \_\_\_\_\_ CO2- R  
(a) wet      (b) dry      (c) gaseous      (d) all the above
- Ammonia is used as an absorbent for controlling- \_\_\_\_\_ CO2- R  
(a) NO<sub>2</sub>      (b) SO<sub>2</sub>      (c) H<sub>2</sub>S      (d) hydrocarbons
- The gas that degrades very slowly is CO6- U  
(a) ketone      (b) HCl      (c) Phenol      (d) PAH
- The following gases are produced during the combustion cycle, except CO6- U  
(a) Unburned HC      (b) CO      (c) NO<sub>x</sub>      (d) Lead
- Which of the following is an indoor pollutant in classrooms? CO4- U  
(a) chalk dust      (b) Dust mites      (c) Old insulation      (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 List out the effect of air pollution on human health 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 Write any four indoor air quality standards. CO4- U

PART – C (5 x 16= 80 Marks)

- 16 (a) Explain in detail about the Effects of Air Pollutants on Human beings, Materials, Animals and Plants. CO1- U (16)  
 Or  
 (b) Explain in detail about the structure and composition of atmosphere with neat sketch. CO1- U (16)
- 17 (a) How will you measure meteorological variables? Explain them. CO3- Ana (16)  
 Or  
 (b) Describe in detail about the plume behavior. CO2- U (16)
- 18 (a) With a neat sketch, explain the principle, process, working, types and applications of Electrostatic Precipitators. CO6-U (16)  
 Or  
 (b) Write in detail about the operation and maintenance to be adopted for Venturi particulate scrubber? CO6-U (16)
- 19 (a) Explain in detail about SO<sub>x</sub> 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) Discuss about the air pollution, indoor air pollutants and noise pollution that you come across in daily life. Also suggest remedial actions. CO5- App (16)  
 Or  
 (b) Write about the sources, types and control of indoor air pollutants. CO5- U (16)