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Question Paper Code: 49214

B.E./B.Tech. DEGREE EXAMINATION, NOV 2018

Elective

Civil Engineering

14UCE914-AIR POLLUTION AND CONTROL ENGINEERING

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

(Answer all Questions)

1. Photochemical air pollution is due to
 - (a) Carbon monoxide
 - (b) Ozone
 - (c) Carbon dioxide
 - (d) Oxide of Nitrogen
2. Which of the following is a primary parameter which influences air pollution?
 - (a) Humidity
 - (b) Solar Radiation
 - (c) Temperature
 - (d) Visibility
3. Secondary meteorological parameter is
 - (a) Wind speed
 - (b) Wind direction
 - (c) Solar radiation
 - (d) Temperature
4. How much temperature is decrease at every 300 m increase in height of atmosphere
 - (a) 1.8° C
 - (b) 1.9° C
 - (c) 1.85° C
 - (d) 1.95° C
5. Gravitational settling chamber for removal of particles exceeding size
 - (a) 50μ
 - (b) 30μ
 - (c) 20μ
 - (d) 40μ

6. Spray towers is one of the following category
- (a) Diffusion (b) Fabric (c) Scrubbers (d) filters
7. The development of double catalysis double absorption SO₂ emission reduce from 2000-5000 ppm to less than
- (a) 500 ppm (b) 575 ppm (c) 650 ppm (d) 700 ppm
8. Average retention time is -----
- (a) 0.2-0.3 (b) 0.3-0.4 (c) 0.1-0.2 (d) 0.3-0.4
9. Radon is responsible to create
- (a) Liver cancer (b) Skin cancer (c) Lung cancer (d) Throat cancer
10. The uses of canopy hood
- (a) Removing point sources pollutants (b) Dispersed point sources pollutants
- (c) Protect the building (d) Damage the building

PART – B (5 x 2= 10Marks)

11. List the structure of atmosphere along with altitude.
12. Define Adiabatic Lapse Rate.
13. List the principles of control of particulate matter
14. What are the factors affecting selection of control equipment?
15. What is radon pollution?

PART – C (5 x 16= 80Marks)

16. (a) Illustrate the sources and classification of air pollutants and their effect on human health and vegetation (16)
- Or
- (b) Illustrate the ambient and stack sampling and analysis of particulate matters (16)
17. (a) Explain in detail about the effects of air pollution on humans, animal and plants (16)

Or

- (b) Discuss in detail about the concept of Temperature Inversion and its types. (16)
18. (a) Discuss in detail about the effects of meteorological parameters on air pollution. (16)
- Or
- (b) (i) Explain factors affecting selection of control equipment (8)
(ii) Point out the design and performance equations of gravity separators (8)
19. (a) Explain in detail about the working principle of Absorption process with a neat sketch (16)
- Or
- (b) Compare the design and performance of absorption and adsorption. (16)
20. (a) Write about the sources, types and control of indoor air pollutants (16)
- Or
- (b) Describe the control and preventive measures of indoor air quality management (16)

