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Question Paper Code: 49214

B.E./B.Tech. DEGREE EXAMINATION, NOV 2019

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. The main source of carbon monoxide pollution is _____
(a) Crop dusting (b) Internal combustion engines (c) Coal mining (d) Acid rain
2. Which of the following is a primary parameter which influences air pollution?
(a) Humidity (b) Solar Radiation (c) Temperature (d) Visibility
3. Which of the following are contradictory plume?
(a) Lofting & fumigating (b) Looping & coning
(c) Neutral & lofting (d) Fumigating & trapping
4. Which one of the following plume behaviours occurs when atmospheric inversion begins from the ground level and continues?
(a) Looping (b) Fumigation (c) Coning (d) Fanning
5. Gravitational settling chamber for removal of particles exceeding size
(a) 50 μ (b) 30 μ (c) 20 μ (d) 40 μ
6. _____ are used when the control efficiency requirements are low to moderate range of 50 to 90 %.
(a) Wet scrubbers (b) Electronic precipitators
(c) Mechanical collectors (d) Fabric filters

7. Which of the following removes both gaseous and particulate contaminants?
- (a) Venturi scrubber (b) Gravitational settling chamber
(c) Dynamic precipitator (d) Wet scrubber
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 wind rose diagram
13. List the uses of particulate scrubbers
14. What are the factors affecting selection of control equipment?
15. How do indoor pollutants affect the health of your family?

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 the term plume and the various types of plume behavior with illustration. (16)
- Or
- (b) Classify the types of wind profiles and six types of stack plume patterns. (16)
18. (a) Differentiate between the centrifugal separators and electrostatic precipitators with neat sketches and working principle (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) Describe the condensation and Incineration with sketches (16)
- Or
- (b) Discuss in detail about the components of bio-filtration unit (16)
20. (a) Describe the control and preventive measures of indoor air quality management (16)
- Or
- (b) Mention the air pollutants, sources of any one major industry and discuss the pollution control equipment adopted in it. (16)

