

Reg. No. :



Estd.1995

SETHU INSTITUTE OF TECHNOLOGY

An ISO 9001 : 2008 Certified Institution

(An Autonomous Institution Affiliated to AnnaUniversity, Chennai)

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Question Paper Code:49214

B.E./B.Tech. DEGREE EXAMINATION, MAY 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. Introduction of chemicals into atmosphere is known as.....

- (a) Air pollution (b) Radioactive pollution
(c) Atmospheric pollution (d) Dense pollution
2. The Air (Prevention and Control of Pollution) Act came into force from
(a) May 1, 1981 (b) May 14, 1981 (c) May 15, 1981 (d) May 16, 1981
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. Efficiency of cyclones if particle size ranges between 5-20 μ is
(a) 45-75 (b) 50-80 (c) 55-85 (d) 60-100
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. HF range from aluminium industry
(a) 0.123 (b) 0.124 (c) 0.125 (d) 0.126
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. What are particulate removal mechanisms in filters?
14. Where bio scrubbers are used
15. Name the sources and effects of noise 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) Explain the wind rose diagram and dispersion equations. (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) Compare the design and performance of absorption and adsorption. (16)
20. (a) What is sick building syndrome? Explain the symptoms, causes, treatment and prevention of sick building syndrome (16)
- Or
- (b) Describe the control and preventive measures of indoor air quality management . (16)

