Reg. No. : | | | | | | | | | | |

Question Paper Code: 49214

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

   (a) Air pollution (b) Radioactive pollution

   (c) Atmospheric pollution (d) Dense pollution

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. 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. 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. Blue-baby syndrome is due to an excess of ___ in drinking water

(a) Soil sediments (b) Nitrate (c) Calcium (d) Location

PART – B (5 x 2= 10Marks)

11. What is the relationship between sampling and air quality monitoring.

12. Define Adiabatic Lapse Rate.

13. What are particulate removal mechanisms in filters?

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) Explain in detail about the effects of air pollution on humans, animal and plants (16)

Or

(b) Illustrate the ambient and stack sampling and analysis of particulate matters (16)

17. (a) Explain the plume behavior form a stack with respect to the different prevailing lapse rate. Use neat sketches. (16)

Or

(b) Discuss in detail about the concept of Temperature Inversion and its types. (16)

18. (a) Draw a neat sketch and discuss in detail about the working principle of ESP. What are the advantages and disadvantages of ESP? (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) Discuss in detail about the components of bio-filtration unit (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)