

**BACHELOR OF ENGINEERING IN PRINTING ENGINEERING
FOURTH YEAR SECOND SEMESTER EXAMINATION (OLD) 2017
ENVIRONMENTAL SCIENCES**

Full Marks: 100

Time: 03 Hrs.

Answer any five questions

1. (a) Distinguish between pollutants and contaminants with examples.
(b) Distinguish between primary air pollutants and secondary air pollutants with examples.
(c) Distinguish between mass concentration and volume concentration of air pollutants.
(d) Distinguish between gravitational settling chamber and dust fall collector.

4+5+5+6=20

2. (a) Mention the chief contributors towards air pollution.
(b) What are the processes involved with the generation of different pollutants causing air pollution. State with examples.
(c) Why the affinity of carbon monoxide to haemoglobin is so much greater than that of oxygen?

5+7+8=20

3. (a) Mention the basic mechanisms involved with removing particulate matter from industrial gas streams. What are the equipments available which make use of the above mechanisms?
(b) Explain the working principle of parallel plate type electrostatic precipitator with neat diagram.

8+12=20

4. (a) Explain different types of filtration mechanisms for removing matter from industrial gases.
(b) Explain the working principle of cyclone separator with a neat diagram. Why it is called reverse flow type?

10+10=20

5. (a) Which area or segment in the printing industries is the main source of air pollution? How does it occur?
(b) What type of VOCs are contained in printing ink, fountain solutions and cleaning products? How do you minimize VOC emission in the press area?

10+10=20

6. (a) Discuss the different ways in which 'water pollution' may be classified.
(b) Mention some important parameters for water quality. Discuss about the type of pollutants in water.
(c) How storm water pollution can be prevented in a publishing house?

5+8+7=20

Ref. No.: EX/PRN/T/423/2017(Old)

7. (a) How noise pollution affect human beings? How can the intensity of sound pressure level be measured?
(b) What are the sources of noise pollution in printing industry? Mention different ways to reduce noise level in different sections of a printing house.

10+10=20

8. Write short notes on (any four)
- (a) Marble Cancer
 - (b) Hi-volume dust sampler
 - (c) Spray type wet scrubber
 - (d) Photochemical smog
 - (e) Frequency weighing network

4x5=20