

B.E. Mining Engineering Seven Semester
MN702 - Surface Mine Environment

P. Pages : 2

Time : Three Hours



GUG/W/18/1843

Max. Marks : 80

- Notes :
1. Due credit will be given to neatness and adequate dimensions.
 2. Assume suitable data wherever necessary.
 3. Illustrate your answers wherever necessary with the help of neat sketches.
 4. Marks are indicated to the right.

1. Explain : 16
- a) Environment & its components.
 - b) Role and functions of CPCB
 - c) Ozone layer depletion.
 - d) Objectives of National Environment policy.

OR

2. Explain : 16
- a) Environmental Impacts of Mining.
 - b) Provisions of Environmental Protection Act 1986.
 - c) Role and functions of Educational & Research Institutions in Environmental protection.

3. a) What is air quality monitoring ? Describe in brief different monitoring techniques used specially for Gaseous pollutant. 8
- b) Explain, with neat sketch construction, working and applicability of cyclone separator & Electrostatic precipitator. 8

OR

4. Discuss in brief. 16
- a) Classification of air pollutant.
 - b) Filtration technique for SPM
 - c) Spray tower
 - d) Fabric Bag filters

5. a) Compare Aerobic decomposition with Anaerobic decomposition. 4

- b) Find the ultimate BOD of waste, if BOD₅ is 600 mg/l. (Given k₂₀ = 0.1, t = 5 days) **6**
- c) Explain Activated sludge process. **6**

OR

6. a) Discuss the sources and adverse impact of AMD in mines. **6**
- b) Explain construction and working of sedimentation tank with neat sketch. **6**
- c) Describe any one tertiary treatment known to you. **4**
7. a) Discuss administrative and Engineering control measures adopted in Industry to control noise pollution. **7**
- b) The following predictor equation in terms square root scaled distance is found to represent the data of blast events monitored. **9**

$$V = 690.7719 \left(\frac{D}{\sqrt{Q}} \right)^{-1.507}$$

Calculate safe charge to keep peak particle velocity of 5.00, 10.00, 15.00 and 25.00 (mm/sec) at a distance of 300 & 500 m.

OR

8. a) Discuss in detail how following factors influence ground vibrations : **10**
- i) Type of explosives ii) Charge per delay
- iii) Burden & spacing iv) Rock characteristics
- v) Distance of object from blast site.
- b) Explain construction and working of Noise level meter with neat sketch. **6**
9. Write short notes on : **16**
- a) Resettlement and Rehabilitation policy.
- b) Impact of mining on land use pattern.
- c) Components of EMP.

OR

10. Write short notes on : **16**
- a) Socio Economic Impacts of Mining.
- b) Subsidence management.
- c) Mine waste management.
