# MI - Surface Mine Environment

P. Pages : 2

Time : Three Hours

‖‖‖‖‖‖‖‖‖‖‖
*2116*

GUG/S/18/6632

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. Weightage to the question indicated to its right.

**1.** a) Explain various components of Environment. **6**

b) Discuss the administrative set up at central level in India for protection and conservation of Environment. **10**

**OR**

**2.** a) Explain. **9**
i) Green home effect. ii) Global warming.
iii) Climate change.

b) State the salient features of National Environmental policy 2006. **7**

**3.** a) Explain in detail various air pollutants and their sources with physiological effects. **8**

b) Explain with neat sketch. **8**
i) Syclone separator. ii) Fabric bag filters.

**OR**

**4.** a) Calculate Dust concentration at STP from the following data. **8**
i) Average pressure at station level = 712.59mm of Hg.

ii) Average temperature = 30.6ºC.

iii) Actual sampling time = 24 hrs.

iv) Sampling rate = 1.6 m$^3$/min (Initial).

v) Sampling rate = 1.5 m$^3$/min (Final).

vi) Initial wt. of filter paper = 3.417g.

vii) Final wt. of filter paper = 3.925g.
Assume suitable data if required.

b) Explain any two techniques used in industry to control air pollution due to gaseous pollutant. **8**

| | | | |
|---|---|---|---|
| **5.** | a) | Define following terms related to water pollution.<br>  i)   Dissolved Oxygen (D.O)      ii)   BOD<br>  iii)  COD                         iv)  Turbidity. | **8** |
| | b) | Explain primary treatment of waste water with suitable example. | **8** |

**OR**

| | | | |
|---|---|---|---|
| **6.** | | Write short notes on. | **16** |
| | a) | Workshop effluent treatment plant. | |
| | b) | Acid mine drainage. | |
| | c) | Trickling filters. | |

| | | | |
|---|---|---|---|
| **7.** | a) | Explain.<br>  i)   Noise Exposure index.      ii)   Noise level standards. | **8** |
| | b) | Discuss the preventive measures to be adopted in mines to control ground vibrations and fly rock. | **8** |

**OR**

| | | | |
|---|---|---|---|
| **8.** | a) | List the Indian standards based on PPV and frequency of the ground Vibrations for various types of structure. | **6** |
| | b) | The following predictor equation in terms of the scaled distance and PPV is found to represent the ground vibration data.<br>PPV = 290.12 (Scaled distance)<br>Estimate the safe explosive charge per delay to keep vibration levels to 5mm/sec.<br>When the distance is 200m and 500m. | **10** |

| | | | |
|---|---|---|---|
| **9.** | | Write short notes on. | **16** |
| | a) | National policy on Resettlement and Rehabilitation. | |
| | b) | Environmental Audit. | |
| | c) | Land Reclamation. | |

**OR**

| | | | |
|---|---|---|---|
| **10.** | | Write short notes on. | **16** |
| | a) | EIA and its stages. | |
| | b) | ISO 14000. | |
| | c) | Subsidence management. | |

**************