

Total number of printed pages – 4

B. Tech
PEMN 6411

Eighth Semester Examination – 2008

ENVIRONMENTAL POLLUTION AND CONTROL IN MINES

Full Marks – 70

Time : 3 Hours

Answer Question No. 1 which is compulsory
and any **five** from the rest.

The figures in the right-hand margin
indicate marks.



1. Answer the following questions : 2×10
- (i) What is air quality index ? List the pollutants taken into consideration for its calculation.
- (ii) What is meant by green house gases ? What is their importance ?

- (iii) The pH value tolerance limits for industrial effluents discharged are _____ to _____ .
- (iv) How is hardness of mine water determined ?
- (v) What is reverse osmosis process ?
- (vi) Define Leq. What is the permissible Leq limit for industrial areas ?
- (vii) What are the causes of fly rock in mines ?
- (viii) What are the different types of wastes generated in mining industries ?
- (ix) Why are tailing dams constructed ?
- (x) Give a list of the environmental legislations in our country that are to be adhered to by the mining industry.
2. (a) What are the sources of air pollution in opencast mines ? Write the ambient air quality standard for coal mines. 5

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- (b) What is environmental impact statement ?
State the bio-physical and socio-economic parameters required to be considered for the same. 5
3. Explain the mechanism of acid mine drainage formation. Give, in brief, an account of active and passive treatment technologies that are practiced to control it. 10
4. (a) Give an account of the dimension of impact of surface mining on ecology and land use pattern. 5
- (b) Outline the salient features of an Environmental Management Plan for an opencast coal mining project which close to forest and residential areas. 5
5. Write in brief the procedure for determination of the following : 5×2
- (i) SPM and SO₂ in ambient air
- (ii) BOD and COD in mine water.
6. Give a list of the important noise sources in mines. Explain with appropriate sketches, the different modifications that can be made in mining equipments to control noise. 10
7. What are the sources of ground vibration in mines ? What are its adverse impacts ? Discuss the provisions that can be made to reduce ground vibration in mines. 10
8. (a) What is an air blast ? What precautionary measures should be adopted for its occurrence ? 5
- (b) What are the obligations and responsibilities of a mining company with regard to the Air (Prevention and Control of Pollution) Act, 1981 ? 5

