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Total number of printed pages – 2

B. Tech
PECE 5403

Seventh Semester Examination – 2011


MINERAL PROCESS ENGINEERING

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
- (a) All minerals are ores or, All ores are minerals. Choose the correct statement and justify it. 
- (b) Mention chloridizing roasting with examples.
- (c) What is dead roast ?
- (d) What are the objectives of size enlargement in mineral processing ?
- (e) What is sintering ?
- (f) Mention two uses of solid ion exchange process.
- (g) Write down Nernst equation for the electro-deposition of metal.
- (h) Explain chelate extraction with an example.
- (i) What is anode slime ?
- (j) Name the bacteria used in bacterial leaching process.
2. Discuss in detail the importance of mineral processing and the various mineral beneficiation steps. 3+7
3. With a neat sketch discuss in detail the construction and operation of a fluidized bed roaster. 10

P.T.O.

4. (a) With a neat sketch explain the construction and operation of Dwight-Lloyd sintering machine. 5
(b) Discuss in detail the chemical processing of ores. 5
5. With a neat sketch explain the operation of solid ion exchange process (loading, back washing, and elution). 10
6. Explain in detail the electrochemical methods used for the treatment of minerals and ores. 10
7. (a) Explain briefly the amalgamation process. 5
(b) Explain briefly the cyanidation process. 5
8. Write short notes on any **two** : 5x2
(a) Calcination
(b) Bacterial Leaching
(c) Oxidizing roasting.

