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Total Number of Pages: 02

B.TECH
PEMT5401

7th Semester Regular / Back Examination 2015-16
NON FERROUS EXTRACTIVE METALLURGY

BRANCH(S): MM, MME

Time: 3 Hours

Max marks: 70

Q.CODE: T361

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

- Q1 Answer the following questions: (2 x 10)**
- a) What is fire refining?
 - b) What is filament process?
 - c) What is cat ion exchange resin?
 - d) What is metal lead bullion?
 - e) What do you mean by shock cooling?
 - f) What do you mean by metallic cloud? How it is formed?
 - g) Why aluminium is extracted from its fused salt not from its aqueous electrolyte?
 - h) What are the common impurities in gold during its extraction through cyanidation process?
 - i) For the extraction of zinc from zinc sulphide converting and smelting are not applicable. Give suitable comments.
 - j) What is Dezincing?
- Q2 a) Mention important ores of copper. Comment on copper ore deposit in India. (5)**
- b) Discuss important steps involve in the production of Copper from its sulphide ore. (5)**
- Q3 a) What is cyanidation process? Discus how Gold is precipitated from leached solution? (5)**
- b) Discuss in brief process of making secondary tin. (5)**
- Q4 a) What is the chief source of zirconium? What are the main impurities associated with the zirconium ore ? (5)**
- b) Discuss with a neat flowsheet the production of ductile zirconium by Kroll's process. (5)**

- Q5** a) What are the common methods of purification of leach liquor? Briefly explain any one of them. **(1+4)**
b) Discuss thermodynamic principle of metal refining. **(5)**
- Q6** a) Discuss Magnesium extraction by DOW process. **(5)**
b) What is the advantage of using ferrosilicon over carbon in the Magnesium extraction. Mention some applications of Magnesium. **(5)**
- Q7** Name different aluminium industries of Odisha. Discuss environmental pollution (with reference to water pollution) due to these industries. Suggest remedial measures. **(10)**
- Q8** **Write short notes on (any two)** **(5 x 2)**
a) Sulphating roasting
b) Mond process
c) Self backing Sodberg electrode
d) Anode effect