

Registration No:

--	--	--	--	--	--	--	--	--	--

Total Number of Pages: 01

B.Tech.
PEMT5401

7th Semester Regular/Back Examination 2017-18

Non Ferrous Extractive Metallurgy

BRANCH: METTA, MME

Time: 3 Hours

Max Marks: 70

Q.CODE: B437

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

The figures in the right hand margin indicate marks.

- 210 210 210 210 210 210 210 210 210
- Q1** Answer the following questions: (2 x 10)
- a) Define hydrogen over potential?
 - b) What is harmful impurities are present in copper metals??
 - c) What is the purpose of using condenser in the Zinc extraction process?
 - d) Name the collector and frother used in Ni extraction process?
 - e) Why gravity concentration method cannot be used in Tin metal ?
 - f) What is the purpose of scrap iron in Lead extraction process?
 - g) Which is the most attractive source for the extraction of Aluminium and why?
 - h) What is the difference between ores and minerals?
 - i) What is the difference between free and lock particles?
 - j) What is Polling?
- Q2**
- a) Describe a route of Ti extraction with flow sheet. (5)
 - b) Differentiate between electro winning and electro refining of metal. (5)
- Q3**
- a) Explain Hall and Heroult's process. (5)
 - b) What are different ores available for Aluminium? Explain Bayer's process for production of Alumina. (5)
- Q4**
- a) What are different Ores available for Silver? What are different extraction methods for silver? Explain Parke's Process. (5)
 - b) Explain pyro metallurgical route for extraction of Zinc. (5)
- Q5**
- a) Discuss Pyro metallurgical extraction of Ni. (5)
 - b) Draw flow sheet for pyro -metallurgical extraction of copper from copper sulphide ore (5)
- Q6**
- a) Draw flow sheet for production of Base Bullion (Impure Lead) from lead ore in the blast furnace. What is the role of Iron scrap addition in the charge to blast furnace ? (5)
 - b) Discuss about oxide free energy diagram. Give its importance in Extractive metallurgy (5)
- Q7**
- a) Describe the refining process to produce refined lead from base bullion. (5)
 - b) Draw process flow sheet of Pb extraction. Write all important parameters involved in the process (5)
- Q8**
- a) Describe in brief the Imperial Smelting Process (ISP) for production of Zinc. List advantages of ISP over other processes. (5)
 - b) Describe cyanidation process used for extraction of Gold from its ore. (5)
- 210 210 210 210 210 210 210 210 210