

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. THIRD SEMESTER EXAMINATION, MARCH 2022

SECOND YEAR [BATCH 2020-23]

INDUSTRIAL CHEMISTRY (HONOURS)

PAPER : VI [CC6]

Date : 05/03/2022

Time : 11 am – 1 pm

Full Marks : 50

Answer **any five** of the following Questions:

[5×10]

1. a) Write down the Peritectic Reaction, Eutectic Reaction and Eutectoid Reaction with temperature and composition for Iron-Iron Carbide phase diagram.
b) How Malleable Cast Iron is produced from White Cast Iron (5+5)
2. a) Write short notes on Predominance area diagram for Ni-S-O system at 1000K.
b) Describe Flash Roasting and Multiple Hearth Roasting processes. (5+5)
3. a) Describe Lime Sinter Process for extraction of Aluminum from low grade ores.
b) In Hall Heroult process why bath temperature is an important factor. (5+5)
4. a) Write the extraction process of Copper from Sulphide ores.
b) Describe the extraction of Lead from Lead Bullion. (5+5)
5. a) Draw a schematic diagram of a Blast Furnace and show the different zones in it.
b) Write down the chemical reactions occurring in the three main temperature zones of a blast furnace. (5+5)
6. a) What is DRI. Describe any Gas based sponge Iron production process.
b) What are the differences between single stage and double stage smelting reduction processes. (5+5)
7. a) Write down the best conditions for phosphorus removal from liquid steel.
b) Describe LD process of steel making. (5+5)
8. a) Write down different ingot defects and their remedies.
b) What are the advantages of continuous casting over ingot casting. (5+5)

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