

B.E.Met.& Mat. Engg. 4th Year 2nd Semester Examination 2017Subject: **Elective (Production of Ferro- alloys)**

Time: 3 Hours

Instructions : Answer any five questions

Section (if any) _____

Marks 100

Q. No.	Question	Marks
1. a)	What are the various grades Fe-Si?	5
b)	What type of Electric Furnace used for smelting High Grade Ferro-Silicon? Give specifications of Furnace.	5
c)	What are the requirements of Fe-Nb production? Discuss reactor design and type of reducer used.	10
2. a)	What are the requirements of Fe-V smelting? Discuss.	5
b)	What is the role of closed top furnace for the production of H.C.Fe-Cr?	10
c)	Explain the role of agglomeration during Fe-Cr smelting.	5
3. a)	What is the role of water cooled D.C.EAF for Fe-Ni production? Explain.	5
b)	Explain the physic- chemical principle for the smelting of H.G.Fe-Ni	10
c)	What is Spiegel? Give its application	5
4. a)	Compare the fluxed with non-flux process of Fe-Mn smelting.	10
b)	Write short notes on- i) Fe-B ii) Fe-Zr.	5* 2
5. a)	How will you produce Ferro-titanium? Explain with reference to charge, reducer, reactor type and fluxing agent.	10
b)	Explain the role of Ferro-tungsten with reference to alloy steel making. How will you control quality of Fe-W? Discuss.	10
6. a)	How will you produce Ferro-Cobalt? Discuss physic-chemical principle.	10
b)	Is there any role of Silico-Manganese in Ferro-alloy production? Explain.	10