Subject : Steel Making Technology

Examination : M-Met-Engg, Industrial Metallurgy, 2nd Semester, 2025

Metallurgical & Material Engineering Department

Ref No. : Ex/PG/MET/PC/T/122/2025

		Answer to the following questions (any five)	Marks
1		Diffentiate between the followings (any five)	4 X 5
	a)	- Ironmaking & Steelmaking	
	b)	- Coal based DRI & Gas based DRI	
	c)	- Slip & Flooding	
	d)	- Recovery Coke Oven & Non Recovery Coke Oven	
	e)	- Greenfield Expansion & Brownfield Expansion of Steelplant	
	f)	- Coking Coal & Non Coking Coal	
2		Write short notes on the followings (any four)	5 X 4
	a)	- Hot Blast Stove	
	b)	- OBM Process	
	c)	- Raw Materials of Steelmaking	
	d)	- Finex Process	
	e)	- Desulphurisation in Blast Furnace	
3	a)	Compare between Midrex, HyL (III) and HyL (IV) processes.	10
	b)	Describe the Corex Process along with a neat diagram	6+4
4	a)	A 'Pig Iron' producing company sells its entire pig iron (250,000 tpy) in the market. The plant consists of 4 No. of mini blast furnace & a sinter plant to cater the blast furnaces. Calculate : The size of the blast furnaces. The size of the sinter plant The net sales realization per year (in Rs. Crores) of the company Given : The productivity of the blast furnaces & the sinter plant are 1.88 ton/cum/day 1.25 ton/sqm/hr respectively.. Operating days per year of BF'ce & SP are 350 & 330 respectively.. The net selling price of pig iron is Rs. 18,000/ ton. Specific consumption of charge sinter in BF'ce is 1,300 kg/ton The yield of pig casting machine is 95% The ratio of charge sinter to product sinter is 90%.	4+4+2
	b)	Compare the features of Carbothermic & Aluminothermic reduction to produce Ferro Alloys	2+3
	c)	State the mode of addition (for steelmaking) of Ferro Alloys	5
5	a)	Define reducibility of iron ore with expression . State how reducibility is influenced by gas composition, linear gas velocity and ore types.	2+3+3+4
	b)	Describe the 'V' type Continuous Casting Machine with a neat diagram	5+3
6	a)	Describe the LD Process of steelmaking highlighting raw materials charging, melting and refining	12
	b)	Draw the Blast Furnace Temperature Profile showing all reactions	8