Kadi Sarva Vishwavidhyalaya

M.E. Sem-I

Advanced Casting Technology

Date: 23/01/2013 Max. Marks: 70

Time: 10.00 a.m. to 1.00 p.m.

Instruction: (1) Answer each section in separate Answersheet

(2)Use of Scientific calculator is permitted

		Section - I	
Q.1		**Each carries equal marks**	**[15]**
	[A]	Explain Solidification in Casting and discus about macro and micro structure.	
	[B]	Write type of gating system, its function and explain one of them.	
	[C]	Explain Shrinkages in casting.	
		OR	
	[C]	Assuming a gating ratio of 2.0:4.0:3, friction factor =0.8 and pouring height =70mm calculate the metal velocity at(a) sprue exit(b) ingate	
Q.2			**[10]**
	[A]	What is castability ? give various aspects of product design.	
	[B]	Write different levels of collaborative engineering.	
		OR	
Q.2			**[10]**
	[A]	Explain (I)clay bond (ii) Oil bond (iii) synthetic resin bond (iv) Inorganic material bond.	
	[B]	Explain core location in casting with different core materials and their characteristics.	
Q.3			**[10]**
	[A]	Explain evaporative pattern casting process.	
	[B]	Explain full mould casting process.	
		OR	
Q.3			**[10]**
	[A]	Explain centrifugal casting process.	
	[B]	Explain Continuous Casting process.	

Section – II			
Q.4		**Each carries equal marks**	[15]
	[A]	Write down types of patterns and patterns materials.	
	[B]	Give comparison between sand and die casting.	
	[C]	Give classification of casting process and explain one of them.	
		OR	
	[C]	What is the function of riser and explain riser design.	
Q.5			[10]
	[A]	Explain sand additives and mould coating.	
	[B]	What is fettling process and explain various defects in casting.	
		OR	
Q.5			[10]
	[A]	Derive equation of solidification time & rate of solidification.	
	[B]	Why fluidity is important in casting and writes its influence.	
Q.6			[10]
	[A]	How to increase fluidity in metal casting.	
	[B]	What is the function of Gating and explain its design.	
		OR	
Q.6			[10]
	[A]	Calculate (a) runner dimensions , assuming height/width=3,(b) ingate dimensions, assuming height/width=1. assuming both have rectangular cross-section.	
	[B]	What is FRP ? Give its advantage.	