

Model Question Paper-2 with effect from 2019-20 (CBCS Scheme)

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Fourth Semester B.E. Degree Examination Metal Casting and Welding

TIME: 03 Hours

Max. Marks: 100

Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.

Module -1			*Bloom's Taxonomy Level	Marks
Q.01	a	Select the factors which determine the selection of a casting alloy and casting process to be employed?	L 1	7
	b	Scientifically compare Jolting and Squeezing machine?	L 2	6
	c	Identify the mechanism of hardening in CO ₂ molding process and explain it?	L 3	7
OR				
Q.02	a	Describe in systematic manner the core making operation?	L 1	6
	b	What are the basic requirements of a Core Sand? in what way does it differ from mold sand	L 2	7
	c	Identify the role of pattern in molding process indicating different types of pattern, and materials of pattern?	L 3	7
Module-2				
Q. 03	a	What are the commonly used die casting machines? Explain working principle and advantage of any one die casting machine?	L 1	7
	b	Explain with sketches how hollow sections are produced using the continuous casting process?	L 2	7
	c	Identify the approximate specification of Gas fired pit furnace and with neat sketch explain its working principle?	L 3	6
OR				
Q.04	a	Explain how the resistance furnace differ from electric arc furnace explain its working principle and advantages?	L 2	8
	b	What type of alloys can be cast by Gravity die casting process? Give its approximate specifications.	L 1	6
	c	What is Slush casting? Explain its working principle and applications.	L 2	6
Module-3				
Q. 05	a	Explain how the progressive, directional and control of solidification give sound casting.	L 2	7
	b	Identify the defects due to Improper molding and Core making material and give remedies for these defects?	L 3	6
	c	Explain the following terms in casting of aluminium alloy: (i) Drossing, (ii) Gas absorption	L 1	7
OR				
Q. 06	a	Identify the reasons for formation of gas in solidification process? what are the defects forming and give the remedies.	L 3	7
	b	Explain the reasons for Hot tear defect, and Blow holes defect in cast products.	L 2	6
	c	What do you mean by Nucleation? And Explain Homogeneous nucleation with an example.	L 1	7
Module-4				

Q. 07	a	Distinguish between Flux coated arc welding process and Inert gas arc welding?	L 2	6
	b	Identify the process parameters of Metal inert gas (MIG) welding process parameters and explain its effect on welding.	L 3	7
	c	Explain the working principle of Electron Beam welding process with advantages, disadvantages and application.	L 1	7
OR				
Q. 08	a	Contrast between Submerged arc welding (SAW) process and Shielded Metal arc welding (SMAW) process and also give its application.	L 3	7
	b	Explain the generation of heat in Friction welding process with its applications?	L 1	6
	c	Distinguish Atomic Hydrogen welding process and Explosive welding process and also give its applications.	L 2	7
Module-5				
Q. 09	a	Illustrate formation of different weld zones during arc welding process?	L 3	7
	b	Explain the working principle of gas cutting and illustrate its accuracy and precision in cutting process?	L 1	6
	c	Distinguish Fluorescent and Magnetic particle testing methods with application.	L 2	7
OR				
Q. 10	a	Illustrate the effect of carbon content weld zone microstructure and its effect on mechanical properties of steel metal?	L 3	7
	b	Define residual stresses? And explain how these are induced in weld joints?	L 2	5
	c	Suggest a procedure to trace the occurrence of casting defects to the section or a stage of manufacture contributing to it and give reason and methods to prevent in the ; (i) Blow hole (ii) Shrinkage (iii) Sand inclusion (iv) cracks	L 4	8

*Bloom's Taxonomy Level: Indicate as L1, L2, L3, L4, etc. It is also desirable to indicate the COs and POs to be attained by every bit of questions.