

**VIT[®]****Vellore Institute of Technology**
(Deemed to be University under section 3 of UGC Act, 1956)

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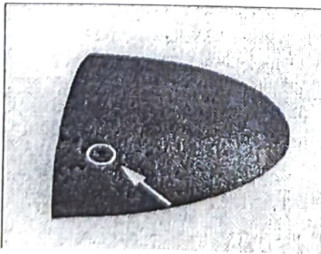
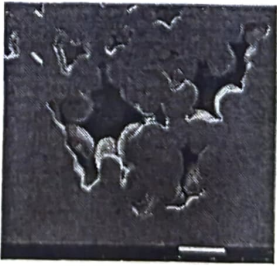
REG.NO:

SCHOOL OF MECHANICAL ENGINEERING
CONTINUOUS ASSESSMENT TEST (CAT) – II
WINTER SEMESTER 2023-2024

Programme Name & Branch : B. Tech & Mechanical Engineering
Course Code/Name : BMEE302L
Course Name : Metal Casting and Welding
Faculty Name(s) : Dr. AK. Jeevanantham, Dr. Raja Annamalai,
Dr. SK Ariful Rahaman, Dr. B. Venkateshwarlu,
Dr. Ashish Kumar
Class Number(s) : 4571, 4627, 4628, 4575, 4568

Duration : 90 min.**Max. Marks: 50****General instruction(s):**

1. Answer all the questions (5X10=50 marks)
2. Provide neatly drawn and properly labelled figures wherever necessary.

Q. No	Question	Marks
1.	Analyze and explain the casting process used for manufacturing an automotive steering in which compressed gas is used. Also, mention its advantages, limitations, and other applications.	10
2.	In a true centrifugal casting process with the horizontal axis of rotation, an acceleration of 70g, where "g" is the acceleration due to gravity is required for production of sound castings. Determine the mould speed in RPM for casting of gray cast iron (GCI) pipes of 10 m long with outside and inside diameters as 2.5 m and 2.25 m, respectively.	10
3.	Examine below given casting defects and list out the causes and remedial measures.  (a)  (b)	10



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	 (c)	 (d)	
4.	Analyze and explain the welding process in which the arc and weld zone are completely covered under a blanket of basic granular flux. Also mention the effects of using acidic flux in this process.	10	
5.	Analyze and explain the welding process used for welding of air craft frame and its skin in which non-consumable electrode, shielding gas, and filler metal wire are used.	10	