E **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 52P02

M.E. DEGREE EXAMINATION, APRIL 2019

Second Semester

CAD / CAM

15PCD202 - Applied Materials Engineering

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1.	(a)	How is grain refinement achieved in cast iron and steel? Explain.	CO1- Ana	(20)
		Or		
	(b)	Using a suitable diagram of composition vs. strength, describe the role of phase mixture and martensitic transformation on the strength of carbon steel.	CO1- Ana	(20)
2.	(a)	How is rotating beam fatigue test conducted? And state the use of test.	CO2-U	(20)
		Or		
	(b)	Write Note on Residual life estimation on various steel.	CO2- U	(20)
3.	(a)	What are the issues to be considered while selecting materials for low, medium, high temperature applications. Suggest suitable material for pipe lines at sub zero temperature, steam turbine and jet engine turbine shaft.	CO3- U	(20)
		Or		
	(b)	Suggest suitable material for the following applications and justify your selection Cylinder block for passenger car, landing gear of aircraft, Fuselage of an aircraft second stage compressor blade of jet engine.	CO3-U	(20)

4.	(a)	State the Characteristics and applications of any four ceramic materials.	CO4- U	(20)
		Or		
	(b)	List the properties and applications of any four thermosetting plastics.	CO4- U	(20)
5.	(a)	Give the various elements on weldability and explain the various defects of welding.	CO5-U	(20)
		Or		
	(b)	Explain the various defects of casting.	CO5-U	(20)