Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S1,S2 (S,FE) Examination May 2021 (2015 Scheme)

Course Code: ME100
Course Name: BASICS OF MECHANICAL ENGINEERING

Max. Marks: 100   Duration: 3 Hours

PART A
Answer any two questions. Each question carries 15 marks   Marks

1	a)	Draw the P-V and T-S diagram of Carnot cycle and quote the equation for efficiency of the cycle.	(5)
	b)	Explain Diesel cycle with a neat sketch. Also, derive an equation for its efficiency.	(10)
2	a)	Give the significance of priming in centrifugal pumps.	(5)
	b)	Explain four stroke spark ignition engine with a neat sketch.	(10)
3	a)	Draw a neat diagram of MPFI system and write the working	(5)
	b)	With a neat sketch explain the working of Francis turbine.	(10)

PART B
Answer any two questions. Each question carries 15 marks

4	a)	Define different psychrometric processes with neat figure.	(7)
	b)	Write the function of different parts of a Vapour compression refrigeration system with help of a neat sketch	(8)
5	a)	Why clutch is needed? Explain single plate clutch with a neat sketch.	(7)
	b)	Explain the major components of automobile.	(8)
6	a)	Explain belt drives with neat sketches.	(7)
	b)	Define velocity ratio of gear drive. Explain different types of gear trains with neat sketches.	(8)

PART C
Answer any two questions. Each question carries 20 marks

7	a)	What are engineering materials? Give the classification of engineering materials.	(10)
	b)	What are the steps included in sand casting?	(10)
8	a)	Explain different rolling processes with neat sketches.	(10)
	b)	What is powder metallurgy? What are the different steps involved in powder metallurgy process?	(10)
9	a)	What are the major operations that can be done using lathe?	(10)
	b)	Describe the working of CNC machines with a block diagram.	(10)

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