Sanjay Ghodawat University, Kolhapur

2020-21

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

EXM/P/09/00

Year and Program: 2020-21	School of Technology	Department: F. Y. B. Tech
Course Code: FYT 1351	Course Title: Elements of Mechanical Engineering	Semester : I
Day and Date:	End Semester Examination	Time:2 Hrs. Max Marks:50

Instructions: 1) All Questions are compulsory.

		Marks	Bloom's Level	CO
Q.1	**Answer/Solve the following (any Two)**–*Unit I& II*			
a)	Air flows steadily at the rate of 0.4 kg/s through an air compressor entering at 6 m/s with a pressure of 1 bar and a specific volume of 0.85 m^3/kg, and leaving at 4.5 m/s with a pressure of 6.9 bar and a specific volume of a 0.16 m^3/kg. The internal energy of air leaving is 88 kJ/kg greater than that of the air entering. Cooling water in a jacket surrounding the cylinder absorbs heat from the air at the rate of 59 kJ/s. Calculate the power required to drive the compressor and the inlet and outlet pipe cross sectional areas.	8	L_3	CO1
b)	Explain with neat sketch working of 4 stroke SI engine.	8	L_2	CO2
c)	Discuss the working of Hybrid vehicle with neat sketch.	8	L_2	CO2
Q.2	**Answer/Solve the following (any two)** –*Unit III*			
a)	Classify types of Pump. Explain centrifugal pump with neat sketch.	8	L_2	CO3
b)	Explain geothermal Power Plant with neat sketch.	8	L_2	CO3
c)	Derive an expression for length of open belt drive.	8	L_3	CO3
Q.3	**Answer/Solve the following (any two)** –*Unit IV*			
a)	Define manufacturing process and Describe in brief metal joining processes.	9	L_1	CO4
b)	Explain types of industrial robots in detail.	9	L_2	CO4
c)	Compare direct and indirect extrusion processes with suitable example	9	L_1	CO4

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