

(An Autonomous Institution affiliated to VTU, Belagavi)

Make up/Supplementary Examinations – September 2021

17ME104 - ELEMENTS OF MECHANICAL ENGINEERING

Max. Marks: 100

	Marks	BT*	CO*	PO*
1. a) Explain the construction and working of Babcock and Wilcox boiler with a figure.	10	L*2	2	1
b) Write short notes on following sources of energy. i) Solar ii) Bio-fuels iii) Wind iv) Hydel	10	2	1	1
2. a) Explain the formation of steam with a diagram and a graph.	10	2	2	1
b) Explain the working of Pelton Wheel Impulse water turbine with a diagram.	10	2	1	1
3. a) Explain the working of a single stage reciprocating compressor with help of a diagram.	10	2	2	1
b) Write short notes on various laws of thermodynamics.	10	1	1	1
4. a) Classify Engineering materials and explain each in detail.	10	1	4	1
b) Explain the working an Air conditioner with a neat sketch.	10	2	3	1
5. a) Explain with a diagram the working of a 2 stroke diesel engine and state the differences between Petrol and Diesel engines.	10	2	3	1
b) Explain with diagram the working principles of Electric Arc welding and oxy-acetylene gas welding.	10	2	4	1
6. a) Briefly explain Inverter type air conditioners and Vapor absorption refrigeration system with necessary sketches.	10	2	3	1
b) Explain briefly open & crossed belt drives and simple & compound gear trains.	10	1	4	1
7. a) Explain the following Lathe operations. i) Cylindrical turning ii) Facing iii) Taper turning iv) Thread cutting	10	1	5	1
b) Briefly explain the Robot anatomy, classification of robots and applications of robots with suitable diagrams.	10	2	5	1
8. a) Explain the following. i) Fixed automation ii) Programmable automation iii) Flexible automation iv) Open and closed loop mechatronic systems.	10	1	5	1
b) Explain the following machining operations with sketches. i) Drilling ii) Plane milling iii) Cylindrical grinding iv) Tapping	10	1	5	1

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