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NMAM INSTITUTE OF TECHNOLOGY, NITTE

(An Autonomous Institution affiliated to VTU, Belagavi)

First / Second Semester B.E. (Mechanical) (Credit System) Degree Examinations

Make up/Supplementary Examinations – September 2021

20ME106 – ELEMENTS OF MECHANICAL ENGINEERING & WORKSHOP PRACTICES
17ME104 – ELEMENTS OF MECHANICAL ENGINEERING

Duration: 3 Hours Max. Marks: 100

*Note: Answer any **Five full** questions.*

		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
					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

BT* Bloom's Taxonomy, L* Level; CO* Course Outcome; PO* Program Outcome

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