

Annexure-XI**1.Name of laboratory : Thermal Engineering**

Sr. No.	Name of Equipt./Machinery	Technical Specifications	Minimum Qty./Nos. Required	Remark if any
1	Working Model of differential.	for car/ truck engine	1	
2	Working Model of Steering gearbox	i)rack & pinion steering gearbox ii) power steering	1 each	
3	Working Model of suspension	rigid axle suspension Mech/ Hydraulic)	1	
4	Working Model of hydraulic brake system	With master cylinder.	1	
5	Battery and charging system multimeter.	Capable of charging 2-wheeler and 4-wheeler battery	1	
6	LPG / CNG kit	Standard kit with all accessories suitable for 4-wheeler of min. 30kg. Capacity	1	
7	Single cylinder air cooled petrol engine with heat balance sheet	3HP,3000RPM,Electric Dynamometer	1	

8	Multicylinder Diesel/Petrol engine for Morse test arrangement	10HP, water cooled,1500rpm.	1	
9	Exhaust gas Analyzer for petrol / diesel engine	showing percentage of CO,CO2 NOX , ppm	1	
10	Two-stage Reciprocating air compressor Test Rig.	Pressure-10kgf/sq cm Displacement -5meter cube/min Speed- 100RPMwith Air cooled Intercooler, Motor-7.5HP with arrangement of Torque Arm and spring Balance	1	
11	Vapour compression refrigeration system test rig	Chillar capacity 20lit , hermatically sealed comp.-0.3 HP with air cooled condensor 1/2 hp, rotameter-100lit./hr, filter dryer, digital voltmeter and ammeter and temp. indicator, evaporator brine tank capacity 20lit.Energymeter	1	
12	Solar water heating system test rig	Heating water of capacity - 100 Litres with single cover Flat plate collector size 3feet X 3feet	1	
13	Model & Chart of i) Babcock & wilcox Boiler ii) Cochran Boiler iii) Lancashire Boiler iv)Loeffler boiler	Models of Acrylic / Aluminium material Plastic coated sheets for charts of size 3 feet X 3 feet	1 Each	
14	Model & Wall Chart's of Boiler Mountings :-i) Water level indicator ii) Steam stop valve iii) Spring loaded/ Dead Weight Saftey Valve iv) Fusible Pulg v) Feed check Valve vi) Blow off cock vii) Bourdon Pressure gauge.	Models of Acrylic / Aluminium material Plastic coated sheets for charts of size 3 feet X 3 feet	1 Each	
15	Wall Chart's of Boiler Accessories :- i) Economiser ii) superheater iii) Air Filter	Plastic coated sheets for charts of size 3 feet X 3 feet	1	

16	Thermal conductivity of metal rod , Test Rig.	Brass/steel rod length 400mm,dia 20-30 mm,cylindricalshell,, cooling water chamber , digital voltmeter,ammeter,temp indicator dimmerstat. Thermocouples,stop watch	1	
17	Experimental Setup of Stefan- Boltzman's law	Speciman disc m.s.150 mm dia., speciman copper/brass of 20mmdia,1KVA Geyser, Thermocople , Digital voltmeter ammeter,temp indicator, inlet outlet water valve.	1	
18	Model & Wall Chart's of i)Radiator, ii)Evaporators, iii)Condensers, iv) plate heat exchangers	Models of Acrylic / Aluminium material Plastic coated sheets for charts of size 3 feet X 3 feet	1 Each	