

AIRCRAFT PROPULSION LAB

Sr. No	Apparatus/Equipment required	Specifications	Qty.
1	Working Model of JET Engine	A trolley mounted single Shaft Turbojet designed for flight is to be supplied so as to demonstrate the Turbojet principle. It is to be instrumented, so as to allow a performance analysis of the turbojet at various speeds to be undertaken. The unit should alternatively be provided with a physical mimic diagram plate or be instrumented for data acquisition and a digital mimic diagram. Thrust produced must be greater than the range up to 230N and be measured electronically. Speed is to be up to 110,000 rpm and full power pressure is to be over 2 bars. Kerosene is the fuel to be used.	01 Unit
2	Engine with Dynamometer	<p>Type of Engine : Single cylinder, four stroke, vertical water cooled, Crank start,</p> <ul style="list-style-type: none"> • Diesel engine developing 5 HP at 1500 • Type of Loading: Rope Brake Dynamometer • Fuel Measuring System: Fuel measuring system consists of a fuel tank, a burette and a three way cock arrangement. • Air Intake Measuring System: Air tank fitted with orifice and water manometer. • Measurement of Heat Carried: Calorimeter: It consist of inlet-outlet piping and flow control valve to control the rate of flow of cooling water. Sensors are provided to measure the Temperature of Inlet & Outlet water and also to measure the exhaust gas inlet and outlet temperature. • Temperature Measurement : Digital Temperature Indicator with multi-channel switch • Temperature Sensors : RTD PT-100 type • ROPE BRAKE DYNAMOMETER: 300mm brake drum radius with 25 Kg spring balance on each side. • Instruction Manual : An ENGLISH Instruction manual will be provided along with the Apparatus • The whole setup must be well designed and supported by a good quality painted rigid M.S. Structure. 	01 Unit
3	Axial Air Compressor Test Rig	<p>Supply: Single Phase:</p> <p>Type: 2 stage or higher</p>	01 Unit

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		Inlet Section dia: 200-400mm app. Outlet Section dia: 130-250mm app. Min. pressure ratio: 5:1 Stage Pressure: To be measure by U tube manometer.	
4	Propeller Test Rig	3 Blades propeller with variable pitch. Diameter of propeller 600 mm approximate. Safety: With protective mesh for safe operations Drive: Driven by electric motor 1/4HP with variable speed control. Pitch Control: Variable Pitch Control Thrust : Digital thrust indicator. Speed: By Digital Speed Indicator. Air Velocity: Measured by a Digital Anemometer. The whole set-up must be well designed and arranged on a rigid structure painted with industrial PU Paint.	01
5	Measuring Instruments	Manometer: U Tube manometer with approximate 1000 mm arm length; Quantity- 05 Number Digital Tachometer : Laser based with digital display-02 Number Digital Stopwatch : Standard; Quantity-03 Number Multi-tube Manometer: 15 channels with approximate 1000 mm arm length-01 Number Pitot-Static Tube with connector tubes- Quantity-04 Number	LOT

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