# Maharaja Ranjit Singh Punjab Technical University, Bathinda

| Name of Item: | | Purchase of Apparatus for Engineering Material & Metallurgy Lab at PIT GTB Garh | |
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| Sr. No. | Description of Item | Qty. | Unit |
| 1 | Practice of specimen preparation (cutting, mounting, polishing, etching) of mild steel, aluminium and hardened steel specimens.<br>Double Disc Polishing Machines<br>Two 200 MM Aluminum discs over which polishing paper or cloth can be stretched Separate Motors for individual disc of ½ HP Variable speed from 50-1500 RPM. Variac Variable Transformer for smooth speed change Single Phase High torque AC Motor Water inlet/outlet for wet polishing. Flexible water jet with control valve. The operation of the machine with 220 V AC Complete Powder Coated Body for Corrosion resistant Paper & Polishing Cloth holding Ring. Front control panel with ON-OFF Switch & for change the speed Machine Dimension (LXWXH) : 870X 460 X 570 MM ) Weight : 50 Kg Approx. | 1 | No. |
| 2 | Study of the microstructure of prepared specimens of mild steel, Aluminium and hardened steel. | | |
| | i)Metallurgical Microscope. | 1 | No. |
| | ii)Standard Accessories:-<br>Metallurgical Image Analyzer Software, Supplementary lenses. Camera & Software | 1 | No. |
| | 1).Objectives - 5x ,10x, 20x, 40x. | 1 | No. |
| | 2).Eyepiece -WF 10 x (paired) | 1 | No. |
| | 3).Camera -CCD or digital camera provision | 1 | No. |
| | 4).Illumination - Light Attachment. | 1 | No. |
| | 5).Magnification -50x to 400x., | 1 | No. |
| 3 | Determination of hardenabilty of steel by Jominy End Quench Test. | | |
| | 1 Jominy End Quench Apparatus | 1 | No. |
| | 2 Jominy Fixture | 1 | No. |
| | 3. Muffle Furnace ( 9x4x4) Temp 900-950 C | 1 | No. |
| | Motorized water circulation through water pump with storage and test tank. Standard test piece dimensions: length, 100 ± 0.5mm , dia 25mm ± 0.5 x Height of free water jet (without test piece in position) 65 ± 10mm. Distance from tip of nozzle to the bottom of test piece 12.5 ± 0.5mm approx. Inside vertical water supply pipe. The nozzle, specimen holders and pipes for maintaining specific water head are included Power supply: Single phase 230 Volts 50 Hz A.C. The apparatus is designed in accordance with IS : 3848-1981 & ASTM :<br>A-255 | 1 | No. |