

Name of Laboratory : Engineering Mechanics.

S.N.	Name of Equipment	Technical Specification	Min.Qtty./ Nos.Required	Remark
1	Lever apparatus (Apparatus for verification of Law of Moments)	Consists of a stainless steel graduated beam 12.5 mm square in section, 1 m long, pivoted at centre. The top of the beam is provided with notches at the interval of 10mm all along for hanger carrying weights with spirit bubble level tube. Two sets of brass slotted weights each set consisting of four brass nickelled weights of 20 gm and 50 gm each.	03	
2	Universal force table (For experimentally verifying laws of triangle, parallelogram, polygon of forces and Lami's theorem).	Consists of a circular 40 cm dia. Aluminium disc, graduated into 360 degrees. Complete with levelling screws clamping devices to fix the table at any desired angle, six sliding clamp pulleys, control ring, string and six sets of iron nicklled slotted weights, each set consisting of nine slotted weights of 50 gm and 20 gm each and one hanger of 50 gm and 20 gm.	03	
3	Simple jib crane	Consists of a stainless steel tubular compression balance,pivoted about an axis fitted to the base. The tie chain has an adjustable angle bracket and fitted with a 10 kg. extension balance (accurately calibrated). Complete on wooden base with 1.2 m jib with 4 weights of 1 kg. each.	02	
4	Parallel forces apparatus (overhang beam type).	The apparatus is with two circular dial type 10 kg. Extension spring balances (accurately calibrated). Complete with suitable stands, a wooden beam with scale and slots at regular intervals four stirrups with hooks and four 1 kg. And 1/2 kg. Weights each. The beam shall be suspended below dial guages.	03	

5	Inclined plane	It consists of 15cm x 60cm wooden board with glass top hinged on an iron base to which a sector with graduated arc and vertical scale is provided. The plane may be clamped at any angle up to 45 degrees. A 5 cm dia. friction less pulley (one additional) is attached to the end by means of a clamp adjustable to any necessary position. Complete with brass roller cart and pan. Two weight boxes (each of 5 gm, 10 gm, 2-20 gm, 2-50 gm, 2-100 gm weight), Boxes each weighing 300 gm with 8 mmply case and bottom of differents surfaces like, glass, teak-wood, brass, copper, sand paper and card board.	02	
6	Location of centroid of plane plate of uniform thickness.	A drawing board 60cm x 45cm attachable to vertical wall with necessary clamps and a protruded hook of 5 cm length at mid top with a steel plumb .Transparent acrylic plates consisting of equilateral triangle of 20 cm side each and rectangle 25cm x 15cm, a circle 20 cm dia. a semicircle 25 cm dia trapezium of sides 15 cm and 25 cm with 20 cm altitude having holes near all vertices and midpoints of side. The hole shall be piercable by a needle point only.	03	
7	Differential axle and wheel	The wheel is of 40 cm dia and axles are insteps of 20 cm and 10 cm reducing diameter giving a ratio of 1:2:4. A steel axle passes through the centre of the wheel supported on ball bearings in iron brackets. The base is provided with holes to fix the appartus on walls or bracketed frame complete with snatch pulley block cord and hooks but without weight.	01	
8	Screw Jack	All metallic construction accurately machined cut screw with a pitch of 5mm carrying a double flanged turn table of 20 cm diameter fitted on steel base and complete with two adjustable pulleys, cords and hooks.	01	

9	Differential pulley block.	A cast iron double sheave pulley block having 16 no. of cogs on bigger pulley and 8 no. of cogs on smaller pulley mounted on sturdy cast iron bracket and moving freely on two steel free bearings. A snatch pulley of 10 cm dia with hook at bottom shall be supplied along with a continuous steel chain, along with a hook for effort..	01	
10	Geared pulley block	Consists of a metallic (preferably steel) cogged wheel of about 20 cm dia with endless chain and a gear toothed wheel of 15 cm dia mounted on the same axis. This toothed wheel shall mesh with another toothed wheel of same dia along with a protruded load drum of 10 cm dia to which a rope can be attached so as to suspend the weights of 10 kg, 20 kg-2 weights and a 50 kg weighs. The slotted weights of 1 kg-2 weights, 2 kg-2 weights, 5 kg-2 weights and 10 kg weight along with a hook for effort.	01	
11	Single purchase crab	Fitted with heavy cast iron wall brackets and attachable to protable M.S.framed trolley. The effort wheel is of C.I.material of 25 cm diameter with a hole for effort attachment mounted on a shaft of about 40mm dia. On the same shaft a geared wheel (machine cut) of 15 cm dia shall be mounted. The teeth of this pinion wheel shall mesh with another (spur) toothed wheel of 30 cm diameter. This spur wheel shall be mounted on another axle to which a load drum of about 7.5 cm diameter of heavy C.I. material shall be attached to which the heavy loads can be attached at bottom. A set of 5 slotted weights of 2 kg each and a hanger of 2 kg..	01	
12	Double purchase crab.	Having assembly same as above (Sr.No.11) but with double set of gearing arrangement. A set of 5-slotted weights of 5 kg each and hanger of 5 kg.	01	

13	Worm and worm wheel	Consisting of machine cut worm nickelled steel gear of 25 cm diameter carrying a metal drum protruding 5 cm of 12.5 cm diameter above which a machine cut worm on steel spindle carrying a 12.5 cm dia pulley. The whole arrangement shall be fixable on heavy cast iron brackets capable to be fixed to a wall or a m.s. framed trolley complete with effort pulley, string and/hooks, with 5 weights of 1 kg each and a hanger of 1 kg..	01	
14	Pulley demonstration set	Comprising of wooden polish base of about 100x20 cm size with two metal supports and a horizontal bar having eight adjustable collars with hooks from which pulleys can be suspended. The following accessories shall be provided with the unit : (1) Single pulley with two hooks-7, slotted weights -10 gm- 3 nos, Pulley triple long - 2, slotted weights-20gm - 3 nos, Pulley triple parallel-2, slotted weights-50 gm - 2 nos., Wheel and axle -1, slotted weights-100gm - 7 nos, Capstan - 1, slotted weights-200gm, 4 nos, Slotted weights hanger -50gms-7 and 20 m cord, slotted weights and hangers are made of iron and duly nickelled.	01	
15	Meter Scales	1 m long, steel rule having marking of 0.5 mm for a first 10 cm length and 1 mm for remaining 90 cms.	5	
16	Steel Rules	.3 m long, steel rule having marking of 0.5 mm for a first 5 cm length and 1 mm for remaining 25 cms.	5	
17	Pans	Circular stainless steel plates of approx. 50 gm each and a triple link chains tied to a ring.	10	
18	Balance	Capacity 5 kg., resolution 0.1 gm.	1	