

## ADP Scheme - 777 (100336)

### (Package-5) Civil Technology (Concrete Technology)

1. GCT Kohat, 2. GCT Nowshera. 3.GCT Timergara

S#	Items	Specification	Unit	For one college Qty	For 3colleg e Qty	Unit Price (Both in Figures and words) Inclusive all taxes	Total Price (both in Figures and words) Inclusive all taxes
1	Vicat apparatus  ASTM-C187	Hand operated Vicat apparatus, formed of a metal frame, a Ø 10 mm sliding consistency plunger weighing 300 gm. and a graduated scale, complete with needle Ø 1.13mm for initial setting time, final setting time needle, glass plate Ø120 mm and ASTM mould. <b>Accessories and spares:</b> •Needle Ø 1 mm for initial setting time . •Needle Ø 1.13 mm for final setting time. •Glass plate Ø 120mm. •ASTM Vicat Mould	Nos.	5	15		
2	SLUMP CONE ASTM C 143	•Slump cone from galvanized plate •Tamping rod Ø16x 600mm. •Base plate made from galvanized sheet iron with handle. Dim.60x40 cm •Graduated rule made from stainless steel of length 300 mm •Hopper , made from aluminum	Nos.	2	6		
3	COMPACTING FACTOR APPARATUS	BS 1881 Part 103 , 5075 Made of painted steel sheet, composed of two hoppers with trap doors mounted vertically above a cylindrical mould. tamping rod 16mm in dia. and 600mm length	Nos.	1	3		
4	COMPACT COMPRESSION TESTING	Motorized, suitable for testing 150x300 and 160x320 mm, cylinders and also for testing 150	Nos.	1	3		

	MACHINE, 3000 KN CAPACITY.  ASTM C 39	mm cubes, prismatic and Brazilian tests. Reading effected by means of a digital display. <b>Accessories :</b> Reduction platens made of steel safety guard, compressive meter, flexure test set used with 150x150x600mm beams complete with steel flexural bearers, splitting tensile test set suitable for Ø 150x300mm <b>Moulds for sample preparation ASTM C-31.</b> 1. Single mould/ Cylinder made in non deforming steel. 2. Beam moulds ASTM-C-31 dim 6"x6"x24" and 6"x6"x36". 3. Hinged cylinder mould ASTM-C-31 Ø 6"x12"					
5	FLEXURAL TESTING MACHINE 150 KN capacity : ASTM-C-78	Rigid constructed frame, designed for flexural test on prismatic specimens of 10 x 10 x 40 / 50 cm. and 15 x 15 x 90 cm Kerb stones and concrete beams. With manual adjustment of the load and digital display. <b>Accessories.</b> Flexure attachment for tests on kerbs 01	Nos.	1	3		
6	AGGREGATE IMPACT TEST VALUE APPARATUS , BS 812	Manufactured robustly from steel for protection against corrosion, with automatic counter to check the number of blows. Complete with cylindrical measure Ø 76 x 52 mm, deep and steel tamping rod Ø 9.5 x 300 mm long. <b>Accessories and Spares:</b> Cylindrical measure, ø 76 x 52 mm. Tamping rod ø 9.5 x 300 mm.	Nos.	10	30		

7	ELECTROMAGNETIC SIEVE SHAKER, with Standard sieves set , ASTM C 33-13	<p>Activated by electromagnetic impulses. It is particularly recommended to carry out sieving test where high precision and performance are important. This electromagnetic shaker is of simple and sturdy construction, it is also suitable for wet sieving tests along electronic control panel. The vibrating intensity and the pauses between one vibration and the following one (this is especially indicated for fine material sieving). The sieve shaker can hold up to 10 sieves.</p> <p><b>Standard sieves set , ASTM C 33-13 (for fine and Coarse aggregates):</b> Of Ø 200 mm x 50 mm with hole with compatible electromagnetic sieve shaker.</p>	Nos.	1	3		
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### (Package-5) Civil Technology

#### (Material & Methods of Construction)

#### 1. GCT Kohat 2. GCT Nowshera, 3. GCT Timergara

S#	Items	Specification	Unit	For one college Qty	For 3 college Qty	Unit Price (Both in Figures and words ) Inclusive all taxes	Total Price (both in Figures and words ) Inclusive all taxes
1	Schmidt Hammer ASTM C805	Concrete test hammer with carrying case and carborundum stone, Strength Range 10 to 70 N/mm <sup>2</sup>	Nos.	5	15		
2	Mason's Trowel	Hardened and tempered steel blades brick trowel with wooden hand and blade size of 5" x 10 1/2 "	Nos.	5	15		
3	Spirit Level	Aluminum, 12 inches	Nos.	5	15		
4	Plumb Bob	Plumb bob 2 Oz , steel polished cone shaped with a string attached to its top flat end	Nos.	5	15		
5	Mason's Shovel Round	Shovel round point. Blade size 9 1/2 ' x 12" with wooden handle	Nos.	5	15		
6	Concrete Mixer	Drum type designed to produce uniform mix, yield 75 litre, power 5 hp, 220 to 240v, 50Hz, single phase	set	5	15		
7	Plier Adjustable	Alloyed steel construction drop forged rust resistant finish, size 8"	Nos.	10	30		
8	Aluminum	Mason's aluminum level	Nos.	10	30		

	Level (Mason)	48" with double plumbs					
9	Square Steel	Square steel 24" body, 16" tongue	Nos.	10	30		
10	Star Drill	Star drill forged alloyed steel ¼", 3/8", ¾" with 12" shank( for drilling brick and stone masonry)	Nos.	2	6		
11	Mason's Drill	carbide type masonry drill, 1/8" size.	Nos.	2	6		
12	Hack Saw	Hack saw 10" to 12" adjustable pistol grip handle rust proof finish	Nos.	10	30		
13	Ball Peen Hammer	24 Oz , hard wood handles dropped forged alloyed steel head	Nos.	12	36		
14	Files( Flat, Round, Triangular)	High carbon steel, each file to be of 12 inches size	set	10	30		
15	Safety equipment(work gloves, boots, glasses, overall, dust mask/respirator)	All are to be of standard sizes and of good quality	set	5	15		
16	Screw driver set	Screw drivers ¼" x 16" shank , plastic handle, stainless steel blade	set	5	15		
17	Wheel barrow	wheel barrow 4 to 5 cu. ft. capacity steel under carriage handles heavy rolled steel body 16 " wheel	Nos.	2	6		
18	<b>Moulds</b> (standard concrete masonry unit moulds for solid blocks)	Capacity: 0.432 cu. m, overall dimensions: 1356 x 756 x 600 mm, Finished Block Dimensions: 1200 x 600 x 600	Nos.	5	15		

19	Digital balance , ASTM C 67	Weight range 1g to 5000g	Nos.	5	15		
20	Digital Moisture Tester. ASTM D 4444-13	Complete with clip, battery and instructional manual Technical Features: Measuring range on wood: 6 to 44 %/ +1 %, Measuring range on building material: 0.2 to 20 % +-0.05 %, accessories: Carrying case	Nos.	3	9		
21	Standard sieve set, ASTM C 33-13 (For Fine and Coarse Aggregates)	ASTM E 11, Sieves , Ø 200 mm x 50 mm Sieves (Woven Wire Mesh Sieves), complete set of 15 nos. of sieves with lid and receiver (i.e., from Sieve NO. 200 (75 µm) to Sieve size of 3 in.(75.00 mm).)	Nos.	2	6		

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### (Package-5) SOIL MECHANICS 1.

GCT Kohat, 2. GCT Nowshera, 3. GCT Timergara

S#	Items	Specification	Unit	For one college Qty	For 3 college Qty	Unit Price (Both in Figures and words ) Inclusive all taxes	Total Price (both in Figures and words ) Inclusive all taxes
1	Oven	Stainless steel drying oven 50 liter, temperature controlled , Maximum temperature range 200oC , 220-240 V AC, 50 Hz, single phase	Nos.	2	6		
2	Electronic digital balance,	capacity 20 kg with accuracy of $\pm 1g$	Nos.	1	3		
3	Moisture Content Tin, 90 g capacity.	Aluminum Moisture content Tin with Lid 75x75x50mm, 200gm Capacity	Nos.	10	30		
4	Motorized Cassagrande Apparatus.	ASTM D4318, Electric motor driven that ensures a frequency of 120 strokes/min., digital display of numbers of cup drops. <b>Accessories.</b> •Grooving tool according to ASTM standard •Spatula made of stainless steel 120 mm blade length	Nos.	2	6		

5	Plastic limit: ASTM D 4318	<p><b>Set for Plastic limit:</b></p> <ul style="list-style-type: none"> <li>•Glass plate: 500mm squarex10 mm thick,</li> <li>•Metal rod Ø 3x100 mm length</li> <li>•Porcelain dish Ø 100mm</li>   <li>•Flexible spatula with 120mm blade length.</li> <li>•Aluminum can(6) Ø55x35 mm</li> <li>•Carrying case.</li> </ul>	Nos.	5	15		
6	SHRINKAGE LIMIT APPARATUS ASTM D 427,	<ul style="list-style-type: none"> <li>•Glass plate, with three metal prongs.</li> <li>•Porcelain dish Ø 150mm</li> <li>,</li> <li>•Flexible spatula with 120mm blade length,</li> <li>•Shrinkage dish Ø 42x12mm (2),</li> <li>•glass crystallizers Ø 57x32 mm,</li> <li>•Graduated cylinder 25 ml capacity and</li> <li>•carrying case</li> <li>•1 kg of mercury</li> </ul>	Nos.	2	6		
7	PYKNOMETER ASTM D 854	<p>Glass jar complete with non - corrodible brass cone lid and rubber seal, capacity 1liter.</p> <ul style="list-style-type: none"> <li>•Density Bottle 25 ml (Nominal capacity) with capillary vent stopper conforming to BS 733 and ISO 3507 Gay-Lussac type</li> <li>•Density Bottle 50 ml (Nominal capacity) with capillary vent stopper conforming to BS 733 and ISO 3507 Gay-Lussac type</li> </ul>	Nos.	5	15		



8	SOIL HYDROMETER ASTM D422	<ul style="list-style-type: none"> <li>•Soil Hydrometer- ASTM graduated 0.995 to 1.038 g/ml</li> <li>•Hydrometer sedimentation cylinder- 1000 ml capacity complete with rubber bung</li> <li>•Mechanical analysis stirrer -220-240 V AC, 50Hz, single phase</li> </ul> <p><b>Accessories:</b></p> <ul style="list-style-type: none"> <li>•Constant temperature Bath-220-240 V AC, 50Hz, single Phase</li> <li>•Sodium Hexametaphostate, 500g</li> </ul> <p><b>Spares:</b></p> <ul style="list-style-type: none"> <li>•Mixing Paddles</li> <li>•Soil dispersion cup</li> <li>•Heater/Thermostat/Circulation unit.</li> </ul>	Nos.	5	15		
9	HAND-OPERATED HYDRAULIC EXTRUDER ASTM D698, D1587, D1883	<p>Used to remove samples from CBR, Proctor and Marshall moulds. Hand-operated driven by means of a hydraulic jack. Made of galvanized steel.</p> <p>It is supplied complete with Ø 4" and 6" adaptors.</p> <p>Capacity: 50 KN.</p> <p>Dimensions: Ø 300 x 410 mm.</p>	Nos.	2	6		
10	STANDARD PROCTOR COMPACTION MOULD: ASTM D 558,D 559, D560, D 698, D 1557	<ul style="list-style-type: none"> <li>•<b>Mould</b> of cylindrical shape made of metal, with a detachable collar approximately 63.5 mm in height, diameter101.6mm/152.4 mm</li> <li>•<b>Rammer.</b> Circular face of 50.8mm diameter and</li> </ul>	Nos.	5	15		

		weighing $2.5 \pm 0.01$ kg with sleeve to control the height of drop to $304.8 \pm 1.6$ mm free fall above the elevation of the soil. Accessory: straight edge, 300 mm					
11	MODIFIED PROCTOR COMP. MOULD ASTM D 698, D 1557	<ul style="list-style-type: none"> <li>• Mould of cylindrical shape made of metal, with a detachable collar, Mould volume <math>1/13.33</math> ft<sup>3</sup></li> <li>• ASTM Compaction Rammer, 2 inch diameter, 10 lbs., Drop 18 inches.</li> <li>• Guide sleeve: machined steel tubing with air pressure release hole.</li> </ul> <b>Accessories:</b> <ul style="list-style-type: none"> <li>• Straight edge</li> </ul>	Nos.	5	15		
12	DIRECT SHEAR TEST APPARATUS. ASTM D 3080,	Digital Direct shear test Machine (Motorized), with two round boxes or 60 and 100 mm diameter, with loading pad, retaining plate, porous plate, plane grid, perforated grid, sample cutter, extrusion dolly, Maximum shear force 5000 N, Maximum vertical load 5000 N, Lateral travel up to 19 mm, Variable speed in mm/min. Capacity 5 KN. Proving ring lever arm with ratio 10:1 Set of 50 kg weights and two 10x0.01 mm dial gauges. <b>Accessories.</b> 1. Proving ring capacity 5 KN 2. Dial gauges	Nos.	1	3		

		10x0.01mm 3. Dial gauges 30x0.01 4. Sample preparation/ejection kit OR EQUIVALENT					
13	MOTORIZED UNCONFINED COMPRESSION TEST APPARATUS.	<b>(50 KN.) With all standard accessories.</b> ASTM D 2166. For testing soil samples of 38mm and 50 mm diameters. Complete set. Power range 220-240 V.	Nos.	1	3		
14	SAND REPLACEMENT METHOD OR IN-SITU DENSITY ASTM D1556	<b>(calibrated mould method)</b> <b>Apparatus complete in all respects ;</b> •ASTM sand cone , Ø 6 inches •Sand container: 5 liter capacity. •Density Plate: for Ø 6 inches sand cone. The plate has 6.5 inches diameter recessed hole to locate the sand cone. •150 mm pouring cylinder BS1377 •150mm calibrating container, 150mm inside diax150mm deep with 250mm diameter •Metal tray: 300mm square x 400 mm deep with 150 mm diameter hole. <b>Field density Tools.</b>	Nos.	10	30		

		<ul style="list-style-type: none"> <li>•Standard Sand for density test passing 600 micron and retained on 300 micron, 50 kg.</li> <li>•Density spoon for removing soil from the hole</li> <li>•Soft headed mallet</li> <li>•Club hammer with steel head and wooden shaft</li> <li>•Density chisel with hardened tip</li> <li>•Metal dibber tool for excavating hole</li> <li>•Scraper used to level off ground</li> <li>•Density hand pick for excavating different ground</li> <li>•Steel pointed rod with wooden handle</li> </ul> <p>OR EQUIVALENT</p>					
15	TRI-AXIAL COMPRESSION TEST APPARATUS. 50 KN	<p>ASTM-D2850 Complete set with accessories, capable of performing UU, CU, CD test</p> <ul style="list-style-type: none"> <li>•Triaxial frame 50 KN capacity, control unit,</li> <li>• DeAired,</li> <li>•pressure transducers for back and cell pressure with pressure range of at least 0.5 MPa and 200 cc volume and pressure control</li> <li>•38 and 50 mm membranes with rubber O rings (20 each),</li> <li>•38 and 50 mm top and bottom caps (Plain and porous),</li> <li>•Split sampler, O ring placing tool,</li> </ul>	Nos.	1	3		

		<ul style="list-style-type: none"> <li>•Membrane stretcher for 50 and 38 mm samples,</li> <li>•filter discs, porous discs,</li> <li>•fiber glass reinforced cell,</li> <li>•Proving ring and displacement dial gauges.</li> <li>•Pour water pressure measurement</li> <li>•suction system</li> <li>•installation, Training and warranty</li> <li>•Power supply 220-230 V , 50Hz</li> </ul> <p>OR EQUIVALENT</p>					
16	CONSOLIDOMETER APPARATUS. (OEDOMETER), Single cell type ASTM-D-2435, D 3877, D-4546.	Complete with Oedometer bench with 1 oedometer, sample diameter at least 50 mm, sampling, ring, upper, lower porous discs, sample ejector, slotted weights from 0.25 to 10 kg (total 64 kg), 2 dial gauges, permeability attachment with 50 ml burette	Nos.	1	3		
17	Glassware and miscellaneous <ul style="list-style-type: none"> <li>•Beaker, 0.5 liter capacity</li> <li>•Beaker, 1 liter capacity</li> <li>•Graduated cylinder, 1 liter</li> <li>•Graduated cylinder, 2 liter</li> <li>•Rubber hammer</li> <li>•Steel hammer</li> <li>•Spatula</li> </ul>	<p>BEAKER:</p> <ol style="list-style-type: none"> <li>1. Borosilicate glass, squat form beaker with spout and graduations, capacity: 100 ml,600 ml,1000 ml</li> <li>2. Polypropylene squat form beaker with spout and graduations, capacity: 100 ml, 600 ml, 1000 ml</li> </ol> <p>MEASURING CYLINDER:</p> <ol style="list-style-type: none"> <li>1. Measuring cylinder,</li> </ol>	Nos.	2	6		

	<ul style="list-style-type: none"><li>•Stainless steel bowls, 6 nos.</li><li>•Steel tray</li><li>•Stop watch</li><li>•Vernier caliper</li><li>•Measuring tape</li></ul>	<p>soda glass, spouted, capacity: 100 ml, 250 ml,500 ml, 1000 ml</p> <p>2. Measuring cylinder, plastic with spout, graduated, capacity: 100 ml, 250 ml, 500 ml, 1000 ml</p> <p>SPATULA: Stainless steel blades with wooden handle: Blade 100 mm, 200 mm.</p> <p>BOWLS: Stainless steel bowls, capacity: 2 litres, 6 litres</p> <p>STEEL TRAY: Heavy-duty, galvanised steel, nesting (460x460x50 mm), (610x610x63 mm), (910 x 910x 76 mm)</p> <p>RUBBER HAMMER: Rubber hammer with rubber head and wooden handle.</p> <p>STEEL HAMMER: Steel hammer 16 Oz with wooden handle.</p> <p>STOP WATCH: Digital stop watch, precision 0.1 sec.</p> <p>VERNIER CALIPER: Range: 150 x 0.1 mm, 200 x 0.2 mm</p> <p>MEASURING TAPE: Fibre glass, 100 ft long</p>					
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## ADP Scheme - 777

### (Package-5) Mechanics of Materials

**GCT Kohat, 2. GCT Nowshera, 3. GCT Timergara**

S#	Items	Specification	Unit	For one college Qty	For 3 college Qty	Unit Price (Both in Figures and words) Inclusive all taxes	Total Price (both in Figures and words) Inclusive all taxes
1	UNIVERSAL TESTING MACHINE (UTM) (COMPUTERIZED )	TECHNICAL SPECIFICATIONS <ul style="list-style-type: none"> <li>• Maximum tensile load: 1000 KN</li> <li>• Maximum compression load: 1000 KN</li> <li>• Distance between the jaws: 700mm or more</li> <li>• Distance between the compression platens: 700mm</li> <li>• Distance between the columns: 650mm</li> <li>• Piston's Stroke: 250mm</li> <li>• Speed test: 100mm/min</li> <li>• Precision and repeatability: <math>\pm 1\%</math> of read value</li> <li>• Power supply: 230 V 1 ph 50 Hz 2.5 KW</li> <li>• Bending test pressed rolling distance 70 to 600 mm</li> <li>• Shear test fitting with size of shearing specimen =0- 20mm</li> <li>• Grip for round and deformed (20-60mm) and flat (40mm thick x 890 mm wide) samples</li> </ul> Extensometer.	Nos.	1			
2	COMBINED ROCKWELL AND BRINELL HARDNESSTEST ER...ASTM-E10-66,	Ball diameter: from 5 to 10mm Pressure limits: 500, 750, 1000 and 3000kg. Accuracy:+ 1%. Max: height of the test piece: 250mm Horizontal clearance: 150mm.	Nos.	1			

3	CHARPY'S IMPACT TESTING APPARATUS, ASTM- E 23	<ul style="list-style-type: none"><li>• Cast iron frame, pendulum with hardened knife, brake device to stop the pendulum,</li><li>• Impact energy 300J,</li></ul> OR EQUIVALENT	Nos.	1			
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## ADP Scheme - 777

### (Package-5) FOUNDATIONS AND PAVEMENTS 1. GCT Kohat, 2. GCT Nowshera, 3. GCT Timergara

S#	Items	Specification	Unit	For one college Qty	For 3 college Qty	Unit Price (Both in Figures and words) Inclusive all taxes	Total Price (both in Figures and words) Inclusive all taxes
1	FLAKINESS GAUGE	<b>(Complete set).</b> To measure the flakiness index of aggregates. Made in galvanized sheet with Set of seven square flakiness sieves made of painted sheet.	No s.	5	15		
2	ELONGATION GAUGES	Flakiness & Elongation of aggregate	No s.	5	15		
3	STANDARD SHAPE GAUGES	(Shape index caliper) Stainless steel made.	No s.	5	15		
4	FRICTIONAL TESTER : ASTM E303	TRRL PENDULUM FOR SKID TEST, comprising 6 rubber sliders for site use, thermometer, perspex setting gauge, spanners, water bottle, collapsible stool with tool tray, tools and translucent plastic cover, complete in transportable case with Instructions for Use. <b>Accessories and Spares:</b> 1. BASE PLATE 2. RUBBER REPLACEMENT PAD, for PSV test. 3. RUBBER REPLACEMENT PAD, for in situ test. 4. DETACHABLE SCALE 5. SLIDER LARGE (6) 6. SLIDER SMALL (6)	No s.	1	3		

5	LOS ANGELES ABRASION MACHINE: ASTM-C131	Heavy hollow steel cylinder with 12+ 0.5mm thickness and, having inside diameter of 710+5mm and an inside length of 510+5mm mounted on a base frame. The motor and drum mounted on steel frame. An automatic digital counter with 12 standard steel ball and extractable container, Power 1 HP power supply 220 V 50Hz with all other accessories.	No s.	1	3		
6	ENGLER'S VISCOMETER/SA YBOLT VISCOMETER	ASTM D88 with tubes constants of 0.1, 0.3, 1.0, 3.0, 10.0 and 30.0 for determining absolute viscosity of asphalt cement	No s.	1	3		
7	PYCNOMETER APPARATUS	Pycnometer, glass jar complete With non-corrodible cone and rubber seal. 1000 cc capacity	No s.	5	15		
8	PENETRATION APPARATUS: ASTM D5	Requirement with masses of 50.0±0.05 gm and 100±0.05 gm a. Penetration needle conforming to ASTM D5 b. Sample Container For penetration below 200 Dia. 5mm Internal Depth 35mm . For penetration below 200 and 350 Dia. 70mm Internal Depth 45 mm . c. Thermometer d. Timing Device. e. Hot Plate or oven	No s.	1	3		

9	<p>DUCTILOMETER: ASTM D113</p>	<p>(to determine the bituminous ductility, The ductilo-meter basically consists of a moving carriage travelling along guide ways. The carriage is driven by an electrical motor, inside a large tank which is fitted with a thermostat and heater, and pump unit. The equipment works in an automatic way at a speed of 50 mm/min., and can accept up to 3 specimens simultaneously. Carriage travel: 1500 mm. Power supply: 220 V. 50 Hz.-1000 W. <b>Accessories:</b> 1. <b>BRIQUETTE MOULD</b> to prepare specimens in "8" form 2. <b>BASE PLATE FOR BRIQUETTE MOULD.</b> 3. <b>COMPLETE REFRIGERATING SYSTEM</b>, for test temperatures of + 5°C.</p>	Nos.	1	3		
10	<p>RING AND BALL APPARATUS ASTM D36</p>	<p>Suitable for the determination of the softening point of bitumen, formed by: two test balls, two rings, two centering guides, a cover adjustable in height and a heat resistant container. <b>Accessories:</b> 1. THERMOMETER OF 0-100°C 2. THERMOMETER OF 0-200°C 3. THERMOMETER ASTM 15C. 4. THERMOMETER ASTM 16C. 5. MAGNETIC STIRRER, with heating. BUNSEN BURNER 6. ASBESTOS MESH, 100 x 100 mm. <b>Spare Parts:</b> 7. TEST BALL. 8. CENTERING GUIDES. BRASS RING</p>	Nos.	2	6		

11	CLEVELAND OPEN CUP APPARATUSAST M D92	(For Flash and Fire point of bitumen) With electric heater, supplied complete with cast aluminum cup, thermometer from - 6 to + 400°C, electric thermo regulator, heating plate, rod and clip for the thermometer. Power supply: 220 V. 50 Hz. 700 W.	No s.	3	9		
12	VACUUM PYCNOMETER: ASTM D2041	Capacity4.5 liter, 2000 g sample weight, <b>Accessories:</b> 1. Aspirator type filter pump 2. Rice test vibrator, motor 1/20 Hp, 1.6 amp. For 220-240V AC, 50 Hz, 1 ph. 3. Timer clock, battery operated (digital display of hours, minutes and seconds)	No s.	2	6		
13	MARSHALLSTAB ILITYTEST MACHINES. ASTM-D-1559.	50 KN max: span 800 mm Minimum 100mm horizontal span 380mm Ram Travel 100mm. Power Supply 220V 50Hz. <b>Accessories.</b> Load cell (50KN). Load penetration piston. Breaking head stability mould.	No s.	1	3		
14	CBR- MACHINE: 50 KN	ASTM D1883 Maximum vertical clearance 800mm Horizontal clearance 255mm Platen diameter 105 mm Test speed 1.27 mm/min Power Supply 220V, 50Hz. <b>Accessories.</b> 1. Soaking Tank. 2. Penetration piston. Surface 1.935 mm <sup>2</sup> 3. Proving rings 50kN.	No s.	1	3		

15	CBR MOULD : ASTM D 1883	<ul style="list-style-type: none"> <li>• Mould Ø152.4x177.8 mm height Collar 50.8 mm height, fits both ends of mould</li> <li>• Base Plate perforated</li> <li>• ASTM CBR cutting collar</li> <li>• ASTM CBR spacing disc</li> <li>• Filter screen 150 mm diameter, 150 micro meter mesh</li> <li>• 10 lb annular surcharge weight</li> <li>• 5lb split surcharge weight</li> <li>• Filter papers 150mm dia. Box of 100</li> </ul>	Nos.	12	36		
16	SPT APPARATUS: ASTM D5	<p>With 140lb (63.5 kg) hammer, anvil and hammer guide rod with automatic release mechanism giving 30" (76 cm) free fall.</p> <p><b>SPT SAMPLER</b> Consists of a tube split longitudinally into two parts, the upper end is fitted to the rod coupling, whilst a cutting shoe is fitted to the lower end. The rod coupling contains a ball valve to prevent sample Washing during extraction.</p> <p><b>Accessories and spare parts:</b></p> <ul style="list-style-type: none"> <li>• Spare cutting shoe</li> <li>• Cone for hard or cemented soils</li> <li>• Rod dia. 50 mm x 1500 mm long in N80 steel. Weight: 10.6 kg</li> <li>• Rod dia. 50 mm x 3000 mm long in N80 steel. Weight: 21.3 kg</li> <li>• Nipple for dia. 50 mm rod. Weight: 1.3 kg</li> <li>• Lifting head for dia. 50 mm rod</li> </ul>	Nos.	1	3		
17	PLATE LOAD TEST APPARATUS	<ul style="list-style-type: none"> <li>• Pressure System 100kN, comprising Hydraulic Cylinder Jack, with 150mm stroke hand operated pump unit 100mm dia, Pressure gauge and tilting saddle .Datum bar assembly.</li> <li>• Dial gauge 50mm Travel x0.01 mm division ,75mm dia. Bearing plate 150mm dia. Bearing plate</li> </ul>	Nos.	1	3		

		300mm diameter with handles. Load capsule 0 to 100kN OR EQUIVALENT						
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## ADP Scheme - 777

### (Package-5) Applied Mechanics

1. GCT Kohat, 2. GCT Nowshera, 3. GCT Timergara

S#	Items	Specification	Unit	For one college Qty	For 3 college Qty	Unit Price (Both in Figures and words) Inclusive all taxes	Total Price (both in Figures and words) Inclusive all taxes
1	FORCE TABLE	A force table is a common physics lab apparatus that has three (or more) chains or cables attached to a center ring. The chains or cables exert forces upon the center ring in three different directions	No	2	6		
2	1. BENT LEVER APPARATUS 2. LINK POLYGON APPARATUS	<b>BENT LEVER APPARATUS</b> THE BENT LEVER AS USED TO MEASURE THE MOMENTS OF PARALLEL FORCES <b>LINK POLYGON APPARATUS</b> The apparatus is provided with five linkages and connectors, having hooks to which pans are hung. These are fixed between two pulleys around which rope is run to connect to two extension type spring balances. The unit is very useful for the study of arches, abutments and piers. The wooden rectangular beam is fitted with scale. Without weights.	No	2	6		
3	BEAM APPARATUS	made with stainless steel (1000 mm long) supported	No	2	6		

		with spring balance and various weights					
4	CABLE WITH PULLEY AND SPRING BALANCE	One end of the cable to be fixed and the other end after passing through pulley support known weights. The assembly shall be mounted on steel frame.	No	1	3		
5	ROOF TRUSS APPARATUS	with weights (stainless steel members with pin joints and supported with roller and spring support	No	1	3		
6	PROJECTILE MOTION APPARATUS	Ballistic pendulum with spring gun and plumb bob, projectile, single pan balance, elevation stand)	No	1	3		