





Annexure - XVIII

Department wise equipment details

1. CIVIL ENGINEERING DEPARTMENT

Equipment Summary			
Sr. No.	Name of the Department	Total No. of Labs	Equipment Cost (Rs. in Lakhs)
1	Civil Engineering	11	362.58

FLUID MECHANICS LABORATORY	Cost (Rs in Lakhs)
	
1) Tilting flume	1.04
2) Wind Tunnel	2.06
3) Transient Recorder	1.10
4) Floating Body Apparatus	0.13
5) Tilting Flume	1.10
6) Impact Jet	0.17
7) Centrifugal Pump	0.38
8) 10HP Centrifugal pump	0.46
9) Notch Apparatus	0.22
10) Bernoulli's Apparatus	0.23
11) Reynold's Apparatus	0.13
12) Orifice And Mouthpiece Apparatus	0.22
13) Venturimeter	0.24
14) Frictional Losses in Pipes and Valves	0.24
Total	7.72

GEOLOGY LABORATORY	Cost (Rs in Lakhs)
	

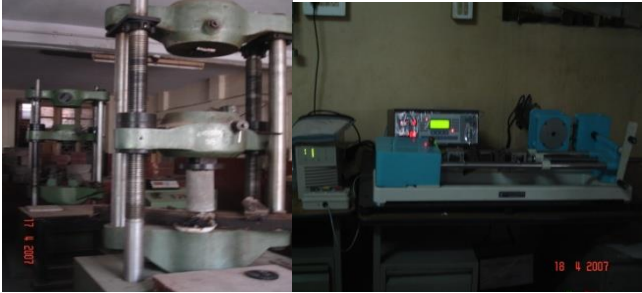



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1) Aqua meter CRM 500(UNDER TEQIP)	
2) Rocks & Mineral specimens	1.13
	1.13



1. CIVIL ENGINEERING DEPARTMENT

STRENGTH OF MATERIAL LABORATORY	Cost (Rs in Lakhs)
 <ol style="list-style-type: none"> 1) Universal Testing Machine - 600 kN 2) Universal Testing Machine - 1000 kN 3) Electronic Tensometer 4) Tile Flexure Testing Machine 5) Brinell Testing Machine 6) Tile Abrasion Testing Machine 7) Impact Testing Machine 8) Universal Testing Machine - 2000 kN 9) Sledge Hammer 	<p>5.09</p> <p>4.77</p> <p>4.67</p> <p>1.26</p> <p>1.03</p> <p>0.80</p> <p>0.66</p> <p>0.40</p> <p>1.76</p>
Total	20.44

CONCRETE TECHNOLOGY LABORATORY	Cost (Rs in Lakhs)
 <ol style="list-style-type: none"> 1) Core case (Electrical hand drill, Core bits) 2) Permeability test apparatus 3) Platform type weighing Balance 150 kg capacity 4) Curing Tank for 36/72 moulds of 150mm/70mm 5) Abrasion testing machine 6) Flexure Testing Machine 7) Compression Testing machine – 3000kN 8) Compression Testing machine – 2000kN 9) Concrete Mixture 10) Concrete Permeability 11) Creep apparatus 12) AIMIL Longitudinal Compressometer 13) Paint/ Cement Mixer 14) Concrete Mixer 15) Concrete Compression Testing Machine 3000KN Capacity 16) Computer Controlled Servo Hydraulic Compression Testing Machine 3000KN 	<p>0.82</p> <p>0.98</p> <p>0.85</p> <p>0.94</p> <p>0.53</p> <p>1.04</p> <p>1.62</p> <p>2.74</p> <p>1.62</p> <p>1.27</p> <p>0.51</p> <p>4.69</p> <p>0.79</p> <p>0.10</p> <p>1.46</p> <p>4.46</p> <p>15.76</p> <p>22.50</p>





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17) Rate Dependent Actuating Machine 100KN	
Total	18.40




1 CIVIL ENGINEERING DEPARTMENT

ENVIRONMENTAL ENGG. LABORATORY	Cost (Rs in Lakhs)
 <ol style="list-style-type: none"> 1) Atomic absorption 2) UV/VIS spectrophotometer 3) BOD Count direct reading, 4) BOD monitor 5) COD Analysis system 6) Analytical balance 7) High volume sampler 8) Atomic Absorption Spectrophotometer 9) BOD Incubator 	<p style="text-align: right;">5.08</p> <p style="text-align: right;">2.50</p> <p style="text-align: right;">2.42</p> <p style="text-align: right;">1.46</p> <p style="text-align: right;">1.40</p> <p style="text-align: right;">0.75</p> <p style="text-align: right;">0.87</p> <p style="text-align: right;">4.38</p> <p style="text-align: right;">0.80</p>
Total	19.66

PLUMBING LABORATORY	Cost (Rs in Lakhs)
 <ol style="list-style-type: none"> 1) Plumbing layout of water supply pipes 2) Various types of toilets based on the utilities 3) The 9 m tall demonstrative tower 4) Latest plumbing materials and technology 	
Total	120.00




1 CIVIL ENGINEERING DEPARTMENT

NDT LABORATORY	Cost (Rs in Lakhs)
 <ol style="list-style-type: none"> 1) Crack Monitor PROCEQ Make 2) Crack Measuring Magnifier PROCEQ Make 3) Crack Width meter PROCEQ meter 4) Corrosion Analyzing Instrument CANIN Make 5) Deformation Meter PROCEQ Make 6) Digital Concrete Test Hammer 7) Ultrasonic Digital Distance meter 8) Mini Infrared Thermometer 9) Ultrasonic Thickness Gauge 10) "R" Meter (Resistivity Meter) 11) "E" Meter 12) Poroscope Plus 13) Maturity Meter 14) Electronic Moisture Meter 15) Drying Shrinkage & Moisture Movement tester 	<p style="text-align: right;">0.16</p> <p style="text-align: right;">0.12</p> <p style="text-align: right;">0.01</p> <p style="text-align: right;">9.30</p> <p style="text-align: right;">0.73</p> <p style="text-align: right;">1.22</p> <p style="text-align: right;">0.06</p> <p style="text-align: right;">0.07</p> <p style="text-align: right;">0.97</p> <p style="text-align: right;">2.11</p> <p style="text-align: right;">0.12</p> <p style="text-align: right;">0.07</p> <p style="text-align: right;">0.07</p> <p style="text-align: right;">0.63</p> <p style="text-align: right;">0.20</p>
Total	15.84




1 CIVIL ENGINEERING DEPARTMENT

GEOTECHNICAL ENGG. LABORATORY		Cost (Rs in Lakhs)
		
1) Triaxial Test		3.73
2) Large box shear		2.70
3) Mini pressure meter		1.29
4) SCPT		1.06
5) Universal Geotextile testing m/c		1.49
6) Plate Load Test apparatus		1.80
7) Mini Pressure Meter		1.23
8) Large Direct Shear Test Apparatus		2.56
9) Triaxial Test Apparatus		7.40
10) Static Cone Penetration Test Apparatus		1.01
10) Asphalt Concrete slab Fatigue Testing Equipment		1.53
11) Geosynthetics Testing Equipments		1.18
12) Soil Automatic compactor		1.00
13) Horizontal Shaking table Apparatus + water proof Acceleration Transducer		5.82
14) UCS for rocks		1.90
15) Flat Jack for rocks		3.08
16) Tensile strength for rocks		0.65
17) Direct shear strength for rocks		1.20
18) Slake durability for rocks		0.44
19) Hardness tester for rocks		2.35
20) Rock specimen preparation		2.86
21) LVDT 0.50 mm		0.79
22) Digital Indicator		0.51
23) Automatic Soil Compactor		0.66
24) Double Acting Hydraulic		1.55
Total		49.79


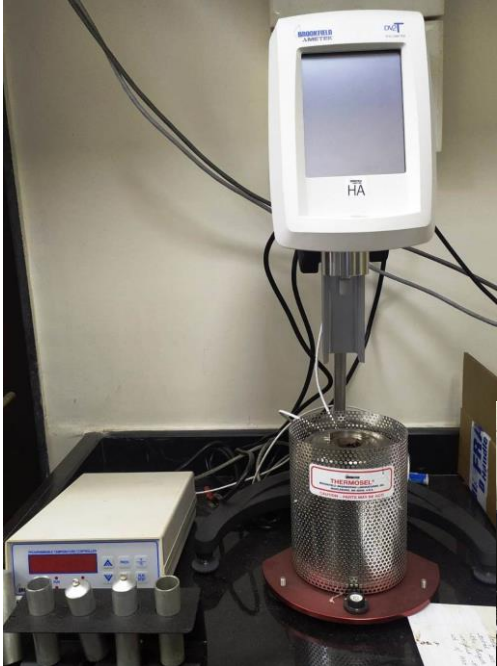




1 CIVIL ENGINEERING DEPARTMENT

COMPUTER LABORATORY	Cost (Rs in Lakhs)
	
<ol style="list-style-type: none"> 1) LCD Projector (total 8 nos. LCD) 2) MIDAS - GEN Software 3) NISA/Civil 50000 Software 4) HIT OFFICE Basic Business 101020 5) Construction Manager 6) Bentley MX suit Softwares 7) Primavera Contractor 8) AutoScan & Auto Steel software 9) Desktop Computer Pentium IV 10) Laptop Systems 11) HP laserjet Printers 12) Sigma Plot 13software 13) IBM SPSS 14) E-TABS 15) GEO -5 Package 16) NISA 17) iNode WTP 	<p style="text-align: right;">4.28</p> <p style="text-align: right;">8.67</p> <p style="text-align: right;">1.30</p> <p style="text-align: right;">5.44</p> <p style="text-align: right;">4.00</p> <p style="text-align: right;">2.0</p> <p style="text-align: right;">2.87</p> <p style="text-align: right;">4.0</p> <p style="text-align: right;">29.23</p> <p style="text-align: right;">4.05</p> <p style="text-align: right;">1.32</p> <p style="text-align: right;">0.99</p> <p style="text-align: right;">5.50</p> <p style="text-align: right;">1.77</p> <p style="text-align: right;">1.18</p> <p style="text-align: right;">1.77</p> <p style="text-align: right;">2.95</p>
Total	81.32



1 CIVIL ENGINEERING DEPARTMENT


TRANSPORTATION ENGG. LABORATORY	Cost (Rs in Lakhs)
   <p>1. Brookfield Digital Viscometer 2. Dynamic Shear Rheometer</p> 	



3. Combined setup for surface free Energy Measurement

1. Core cutting machine	1.14
2. Concrete Test Hammer	2.45
3. Automatic Compactor for Marshal Test Universal for 4" and 6" diameter specimens	0.9
	1.68
4. Diamond Core Cutter for Bituminous and concrete Roads Model SP 200A Brand Hakken, Japan Power output 2400W Sr. No. 0580042	0.85
5. Generator 2.5 KVA EG300A Make Birla Ecogen silent	0.86
6. Point Load Index Tester 100 kN Make AMIL AIM 206-1 Sr.-10035	0.9
7. Load Frame Motorized 12 speed 200 kN AIM 065 Sr.No.111234	2.03
8. LVDT Transducer 50kN output with digital indicator load cell capacity 50kN AIM – 12101	0.48
9. Specific Gravity 15kg Electronics weighing Balance of 1 gm accuracy wired basket and water container with gear arrangement	4.61
10. Digital compression testing machine of 3000 kN capacity AIM 320E-DG Sr. No.-11056	0.55
11. Hardness Tester as per IS : 1195 Sr. No. 2605	1.1
12. Planetary Mixer 10 liters capacity as per IS: 10890 – 1984	0.68
13. Skid resistance Tester as per ASTM E103 AIM 580 Sr. No. 12001	1.62
14. Soil Automatic Compactor	3.88
15. Rolling Thin Film Oven Test Apparatus as per ASTMD 2872	2.24
16. Absolute Viscosity Testing Equipment	5.13
17. Bump Integrator	3.99
18. Rotational Dynamic Viscometer	31
19. Dynamic Shear Rheometer	10.62
20. Brookfield Digital Viscometer	11.8
21. Combined setup for surface free Energy Measurement	5.48
22. Homogenization System in the formation of Modified Binder	
Total	93.99

**1 CIVIL ENGINEERING DEPARTMENT**

SURVEYING LABORATORY	Cost (Rs in Lakhs)
	
1) Total station	17.14
2) One second Theodolite	2.47
3) Auto level	1.18
4) Universal Theodolite T2	1.72
5) Electronic digital TheodoliteDT2	(7.90 Japanese yen) Dt.10.3.93
6) Electronic Distance meter RED 2L/S	(16.55 Japanese Yen) Dt.10.3.93
7) Electronic Distance Meter PM81	(INR 1,655,000) Rs.81728/-
8) Automatic Base measuring system DI4L	22.151/-Swiss frank
9) Electronic digital planimeter	0.58
10) GPS	1.56
11) DGPS	15.22
Total (Only INR)	39.87