



Department of Civil and Structural Engineering

**LIST OF EQUIPMENTS PURCHASED FOR
110004 : ELEMENTS OF CIVIL ENGINEERING LABORATORY
(AS PER THE STOCK REGISTER)**

Sr. No.	ITEM/DESCRIPTION OF EQUIPMENTS	DATE OF PURCHASE	QTY.	VALUE(Rs.)
	CHAIN SURVEY:			8061.00
	Metric Chain & other related instruments			
1.	(i) Metric Chains 30 m & 20 m)	27/8/97	06	2040.00
	(ii) Tapes (metallic & steel)	"	11	1970.00
	(iii) Ranging Rods	"	12	2496.00
	(iv) Optical Square	"	03	840.00
	(v) Optical Square(mirror type)	18/12/00	01	315.00
	(vi) Prism Square	18/12/00	01	400.00
	COMPASS SURVEY:			3275.00
2.	(i) Prismatic Compass with Tripod	27/8/97	03	2400.00
	(ii) Surveyor's Compass with Tripod	18/12/00	01	875.00
	LEVELLING:			9420.00
3.	(i) Dumpy Level with Tripod	27/8/97	02	6720.00
	(ii) Levelling Staff	"	03	2700.00
4.	THEODOLITE SURVEY: Theodolite & Other related instruments	27/8/97	02	16800.00
5.	PLANE TABLE SURVEY: Seven Accessories	27/8/97	02	4000.00
6.	PLANIMETER	27/8/97	02	1000.00
	MODELS:			35820.00
7.	(i) Rapid Sand Filter		01	1920.00
	(ii) Safe Water Supply from river		01	1800.00
	(iii) Sedimentation Tank		01	1320.00
	(iv) Flocculator		01	1280.00
	(v) Trickling Filter		01	1280.00
	(vi) Septic Tank		01	840.00
	(vii) Stone Arch Bridge		01	1440.00
	(viii) Lattice Bows String		01	2560.00
	(ix) Clover leaf Junction		01	720.00
	(x) Diamond pattern		01	720.00
	(xi) Cross section of National Highway		01	720.00
	(xii) Road Sign		01	800.00
	(xiii) Points & Crossings		01	1680.00
	(xiv) Interlocking		01	1680.00
	(xv) Hydroelectric Power Installation		01	2400.00



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	MODELS contd---	27/8/97	01	2160.00
	(xvi) Gravity Dam		01	2160.00
	(xvii) River Head Work		01	960.00
	(xviii) Canal Regulator		01	1140.00
	(xix) Tube well Model		01	680.00
	(xx) Half Panelled & half Glazed Door		01	680.00
	(xxi) Flushed Door		01	720.00
	(xxii) Louvered Window		01	720.00
	(xxiii) Sliding Window			640.00
	(xxiv) Geometrical Stair			960.00
	(xxv) Spiral Stair			1200.00
	(xxvi) Hip & Valley Roof			3360.00
	(xxvii) Two Storied Building			1080.00
	(xxviii) Two Rooms and Verandah			
8.	Digital Sound Model		01	5500.00
9.	Water Quality Kit		01	19800.00
10.	Nephelometric Turbiditymeter		01	9754.00

CHAIN SURVEY

AIM: To collect linear measurements to plot a map or a plan

Write up is expected from the students and it should contain the following points.

- Introduction: Definition of surveying, definition of chain survey
- Principle of chain survey
- Instruments used with sketches
- Procedure of chain survey
- Conventional symbols (Attach the conventional symbols sheet given to you)
- Field book entry – Field work
- Location sketch at station A & B with North direction.

COMPASS SURVEY



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AIM: To collect bearing of different lines and to compute the included angles between the lines.

Write up is expected from the students and it should contain the following points.

- Introduction: Definitions of Compass Survey.
- Principle- Types of Traverses.
- Brief explanation of various parts of a prismatic compass with sketch.
- Define bearing, WCB, QB, Fore bearing, Back bearing & relationship between FB and BB.
- Procedure of compass survey.
- Complete the observation table with WCB, QB and included angles.

LEVELLING

AIM: To find the reduced levels of given stations.

Write up is expected from the students and it should contain the following points.

- Introduction (Definition of Levelling, Uses)
- Define B.S, I.S, F.S, CP, HI, Station, B.M.
- Brief explanation of HI method and Rise and Fall method.
- Brief explanation of the parts of a Dumpy level with a sketch.
- Observation table to calculate R.L of the given points by HI method and Rise and Fall method.
- Draw the profiles of all the points by selecting a suitable datum and assuming horizontal interval (Chainage) of 20 M

SITE VISIT REPORT



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AIM: To study different components, plan features, structural details and materials of construction of a building.

Write up is expected from the students and it should contain the following points.

- Purpose, Location and Orientation.
- Main features – Types of construction (Load bearing or Framed)
- Facilities provided.
- Plan features- Sizes of different components, rooms etc.
- Structural details- Details of beams, pillar, chajja etc.
- Materials of construction.
- Line sketch.
- Overall observation.

BUILDING COMPONENTS (DRAWING)

AIM: To understand different components, materials used, detailed dimensions of a typical section through a wall.

Write up is expected from the students and it should contain the following points.

- Brief explanation of all building components mentioned in the drawing with their functions and materials used for their constructions.

DESIGN OF A ROOM (DRAWING)

AIM: To prepare a typical plan, section and elevation of a room.

Write up is expected from the students and it should contain the following points.

- Explain Plan, Elevation and Section of a building (i.e. definition, details in each view, normally adopted dimensions of major components and modular dimensions)



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PLANIMETER

AIM: To compute the area of a plan or a map.

Write up is expected from the students and it should contain the following points.

- Use of Planimeter
- Components of a planimeter with a sketch
- Working of Planimeter

WATER TREATMENT PLANT (DRAWING)

AIM: To draw different units of a water-treatment plant for municipal water supply.

ROADWAY AND RAILWAY CROSS-SECTION (DRAWING)

AIM: To draw different cross-sectional elements of a highway and railway.

INTRODUCTION TO THEODOLITE

MODEL STUDY

COMPASS SURVEY

OBSERVATION TABLE:

STATION	LINE	WHOLE CIRCLE BEARING (WCB)	QUADRANTAL BEARING (QB)	INCLUDED ANGLE
O	OA			$\angle AOB =$
	OB			$\angle BOC =$



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	OC			∠COD=
	OD			∠DOA=
A	AO			
B	BO			
C	CO			
D	DO			

- CALCULATIONS:

LEVELLING

- OBSERVATION TABLE:

HEIGHT OF INSTRUMENT METHOD

STATION	STAFF READING			RL OF HI	RL OF STATION	REMARKS
	BACK SIGHT (BS)	INTERMEDIATE SIGHT (IS)	FORE SIGHT (FS)			
A						
B						
C						
D						
E						
F						

- CHECK:

$$\Sigma B.S. - \Sigma F.S. = \text{LAST R.L.} - \text{FIRST R.L.}$$

SUBMISSION