

## Annexure – I

### Detail of Theory Syllabus

SL NO	CONTENT	DETAILS
1	Introduction on Survey, An Overview	(1.1) Definition and objective of surveying. (1.2) Introduction of various units used for measuring length, area, volume in C.G.S, F.P.S & M.K.S, method and their internal conversation. (1.3) Concept of use of Scale in drawing.
2	Chain Surveying	(2.1) Principles of chain surveying (2.2) Instrument used in chain surveying with their brief description & sketch (2.3) Definition of a) Base line b) Tie line c) Offset d) Reconnaissance e) well conditioned triangle (2.4) Upkeep of a field book (2.5) Overcoming obstacle, ranging a line (2.6) Error in chain surveying(no deduction, simple numerical problems) (2.7) Methods used (only brief idea for practical works). (2.8) Cadastral survey with mouza map along with diagonal scale, tape & other accessories.
3	Compass surveying	(3.1) Introduction (3.2) Brief description of Prismatic compass, surveyor's compass, Bearing of a line, magnetic & true bearing, Dip, Local attraction (3.3) Measurement of internal angle of two line station (3.4) Method of plotting compass survey traverse. Adjustment of closing error. Recording of field book. (3.5) Simple numerical problems.
4	Levelling	(4.1) Brief description of various levelling instrument with its components. (4.2) Methods used in levelling. Simple numerical problems. (4.3) Levelling difficulties (4.4) Use of levelling instrument for site levelling, Road cross section, Canal cross section, upkeep of level book. (4.5) Calculation of volume of earthwork.
5	Plane table Survey	(5.1) Introduction , brief description of instrument used in plane table survey. (5.2) Method used in plane table survey(only description for practical class). Advantages & disadvantages (5.3) Brief description of centring, levelling, orientation operation in plane table survey.
6	Theodolite Survey	(6.1) Description of instrument, principles of measuring of horizontal & vertical angle. (6.2) Temporary adjustment of theodolite (6.3) Traverse survey of theodolite work (6.4) Sources of error in theodolite work (6.5) Checks in traversing.
7	Reading of Building Drawing	(7.1) Plan , elevation & section of a small building (7.2) Simple idea of RCC Structural detail like column, beam , slab, footing (7.3) Introduction to brief idea for material calculation (7.4) Layout of a plan with area calculation by Simpson's 1/3 rule & trapezoidal rule
8	GPS Awareness	(8.1) Introduction to GPS

**Detail of Practical Syllabus**

SL NO	CONTENT	DETAILS
1	Chain Survey	<p>(1.1) Practice in unfolding &amp; folding chain, alignment of lines, measurement of distance between given points and their booking.</p> <p>(1.2) Practice in chaining &amp; taking offsets, use of optical square and cross staff, Setting out right angle, taking measurements with tape.</p> <p>(1.3) Procedure in conducting chain survey, reconnaissance, preparation of rough sketch. Selection of base line and station points, fixing of station etc.</p> <p>(1.4) Chain survey of small plots by triangulation, booking &amp; plotting the same..</p> <p>(1.5) Chain survey of built up plot, locating detail, booking &amp; plotting the same.</p> <p>(1.6) Taking horizontal measurement on sloping ground, overcoming obstacles between two points one of which is invisible or inaccessible from the other.</p> <p>(1.7) Chain Survey of an extensive area, locating detail, plotting &amp; finishing the same in ink or colour paint.</p>
2	Compass Survey	<p>(2.1) Practice in setting up a compass and checking its accuracy- taking bearings and calculating angles (conversion of W.C.B to R.B). (2.2) Determining the bearings of a given line &amp; establishing lines of given bearings- laying out a rectilinear and polygonal plots of ground using a compass and a tape.</p> <p>(2.3) Conducting closed traverse of built up field and plotting the same finishing in ink or colour paint</p>
3	Plane table survey	<p>(3.1) Setting up of plane table by levelling, centring and orientation.</p> <p>(3.2) Surveying an area with plane table of built up areas</p> <p>(3.3) Traversing with plane table of built up areas.</p> <p>(3.4) Running &amp; open traverse with plane table and fixing details. Inking, finishing, colouring etc.</p>
4	Levelling	<p>(4.1) Practice in setting up a level and performing temporary adjustments, practice in reading staff.</p> <p>(4.2) Demonstration of permanent adjustment of level.</p> <p>(4.3) Practice in differential levelling, establish in bench mark, reading of staff and booking of reading in level book.</p> <p>(4.4) Carry out route survey, longitudinal &amp; cross section of road project, its plotting and calculation of earth work</p>
5	Theodolite survey	<p>(5.1) Practice in setting up a theodolite and taking reading</p> <p>(5.2) Measurement of horizontal angles by repetition, Reiteration method, Entry of field book.</p> <p>(5.3) Practice in measuring in vertical angles, setting out given vertical angle and entering the field book.</p> <p>(5.4) Running an closed traverse over a given area, booking calculating the coordinates and plotting the traverse</p>
6	Plan reading	(6.1) Layout of building from the plan mentioning size of the room
7.	GPS awareness	<p>(7.1). Practical application of G.P.S</p> <p>(7.2) Component of G.P.S data processing</p> <p>(7.3) G.P.S signal</p>

**Detail of Employability Skills Syllabus**

Sl. No.	Content	Details
1.	English Literacy & Communication Skills	<p>Accentuation (mode of pronunciation) on simple words, Diction (use of word and speech)</p> <p>Transformation of sentences, Voice change, Change of tense, Spellings. Reading and understanding simple sentences about self, work and environment. Construction of simple sentences, Writing simple English.</p> <p>Speaking with preparation on self, on family, on friends, classmates, on know, picture reading gain confidence through role-playing. Taking messages, passing messages on and filling in message forms Greeting and introductions office hospitality, Resumes or curriculum vita essential parts, letters of application reference</p>

		<p>to previous communication.</p> <p>Communication and its importance, Principles of Effective communication, Types of communication – verbal, non verbal, written, email, talking on phone. Non verbal communication –characteristics, components-Para-language, Body – language,</p> <p>Barriers to communication and dealing with barriers.</p> <p>Handling nervousness/ discomfort.</p> <p>Self awareness, Importance of Commitment, Ethics and Values, Ways to Motivate Oneself, Personal Goal setting and Employability Planning.</p> <p>Manners, Etiquettes, Dress code for an interview, Do's &amp; Don'ts for an interview, Problem Solving, Confidence Building, Attitude.</p>
2.	I.T. Literacy	<p>Introduction, Computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down of computer.</p> <p>Basics of Operating System, WINDOWS, The user interface of Windows OS, Create, Copy, Move and delete Files and Folders, Use of External memory like pen drive, CD, DVD etc, Use of Common applications.</p> <p>Basic operating of Word Processing, Creating, opening and closing Documents, use of shortcuts, Creating and Editing of Text, Formatting the Text, Insertion &amp; creation of Tables. Printing document.</p> <p>Basics of Excel worksheet, understanding basic commands, creating simple worksheets, understanding sample worksheets, use of simple formulas and functions, Printing of simple excel sheets</p> <p>Internet, Concept of Internet (Network of Networks),</p> <p>Meaning of World Wide Web (WWW), Web Browser, Web Site, Web page and Search Engines. Accessing the Internet using Web Browser, Downloading and Printing Web Pages, Opening an email account and use of email. Social media sites and its implication.</p> <p>Information Security and antivirus tools, Do's and Don'ts in Information Security, Awareness of IT – ACT, types of cyber crimes.</p>
3.	Entrepreneurship Skills	<p>Entrepreneurship vs. management, Entrepreneurial motivation. Performance &amp; Record, Role &amp; Function of Entrepreneur, Qualities of a good Entrepreneur, SWOT and Risk Analysis. Concept &amp; application of PLC, Sales &amp; distribution Management. Different Between Small Scale &amp; Large Scale Business, Market Survey, Method of marketing, Publicity and advertisement, Marketing Mix.</p> <p>Preparation of Project. Role of Various Schemes and Institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non financing support agencies to familiarizes with the Policies /Programmes &amp; procedure &amp; the available scheme.</p> <p>Project formation, Feasibility, Legal formalities i.e., Shop Act, Estimation &amp; Costing, Investment procedure – Loan procurement – Banking Processes.</p>
	Productivity & Quality Tools	<p>Definition, Necessity, Meaning of GDP.</p> <p>Personal / Workman – Incentive, Production linked Bonus, Improvement in living standard. Industry Nation.</p> <p>Skills, Working Aids, Automation, Environment, Motivation. How improves or slows down.</p> <p>Banking processes, Handling ATM, KYC registration, safe cash handling, Personal risk and Insurance.</p> <p>Meaning of quality, Quality characteristic. Definition, Advantage of small group activity, objectives of quality Circle, Roles and function of Quality Circles in Organization, Operation of Quality circle. Approaches to starting Quality Circles, Steps for continuation Quality Circles.</p> <p>Idea of ISO 9000 and BIS systems and its importance in maintaining qualities.</p> <p>Purpose of Housekeeping, Practice of good Housekeeping. Basic quality tools with a few examples</p>
	Occupational safety, health and Environment Education & Labour Welfare Legislation	<p>Introduction to Occupational Safety and Health importance of safety and health at workplace. Basic Hazards, Chemical Hazards, Mechanical Hazards, Electrical Hazards, Thermal Hazards.</p> <p>Occupational health, Occupational hygienic, Occupational Diseases/ Disorders &amp; its prevention.</p> <p>Basic principles for protective equipment.</p>

		<p>Accident Prevention techniques – control of accidents and safety measures.</p> <p>Care of injured &amp; Sick at the workplaces, First-Aid &amp; Transportation of sick person.</p> <p>Benefits guaranteed under various acts- Factories Act, Apprenticeship Act, Employees State Insurance Act (ESI), Payment Wages Act, Employees Provident Fund Act, The Workmen's compensation Act.</p>
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