


8. SCHEME OF EXAMINATION: OBJECTIVE TYPE (CBT METHOD)

A. FOR THE POST OF ASSISTANT TRAINING OFFICER:

Subject (CBT Method)	Duration	Maximum marks	Minimum qualifying marks for selection	
			SCs, SC(A)s, STs, MBCs/DCs BC(OBCM)s & BCMs	Others
<u>i. Paper-I (Subject Paper)</u> (Stenography in English) (Code No.378) (Diploma Standard) (100 Questions)	1½ Hours	150		120
<u>ii. Paper-II (Objective Type)</u> <u>Part-A</u> Tamil Eligibility Test (SSLC Standard) (100 questions/150 marks)		150*		
<u>Part-B</u> (General Studies) (100 questions) (150 marks) (Code No:003) General studies (SSLC Standard) – 75 questions and Aptitude and mental ability test (SSLC standard) - 25 questions	3 Hours	150		
Total		300		

B. FOR THE POST OF JUNIOR TECHNICAL ASSISTANT:

Subject	Duration	Maximum marks	Minimum qualifying marks for selection		
			SCs, SC(A)s, STs, MBCs/DCs BC(OBCM)s & BCMs	Others	
Paper-I (Subject Paper) Handloom Technology / Textile Technology / Textile Manufacture (Code No.339) (Diploma Standard) (200 Questions)	3 Hours	300	}	135	180
Paper-II:-					
Part-A Tamil Eligibility Test (SSLC Standard) (100 questions/150 marks)	3 Hours	150*			
Part-B (General Studies) (100 questions) (150 marks) (Code No:003) General studies (SSLC Standard) – 75 questions and Aptitude and mental ability test (SSLC standard) - 25 questions		150			
Total		450			

*Minimum qualifying marks – 60 marks (40% of 150) Marks secured in Part-A of Paper-II will not be taken into account for ranking.

Note:-

- a) Answer sheets of Paper-I and Part B of Paper II of the candidates will be evaluated, only if the candidates secure minimum qualifying marks in Part-A of Paper-II.
- b) Marks secured in Paper-I and Part-B of Paper-II will only be considered for ranking.
- c) The questions in paper-I (Subject paper) will be set in English only and questions for Part-B of Paper-II will be set both in English and Tamil.

ANNEXURE-III
SYLLABUS
PAPER-I
STENOGRAPHY (DIPLOMA STANDARD)

Code No.378

UNIT I

1. Importance of Stenography
2. Consonants
3. Grammalogues
4. Phraseography
5. Circles and Loops
6. Initial and Final Hooks

UNIT II

1. Compound Consonants
2. The Halving Principle
3. The Doubling Principle
4. Medial Semicircle

UNIT III

1. Prefixes and Negative words
2. Suffixes and Terminations
3. Contractions
4. Special Contractions

UNIT IV

1. Advanced Phraseography
2. Intersections
3. Usage of Political Phrases
4. Usage of Legal Phrases

UNIT V

1. Note-taking and Transcription
2. Legislature Reporting
3. Techniques for improving Speed

ANNEXURE-III

SYLLABUS

PAPER-I

HANDLOOM TECHNOLOGY / TEXTILE TECHNOLOGY/ TEXTILE MANUFACTURE (DIPLOMA STANDARD)

SUBJECT CODE: 339

UNIT- I: FIBRE PROPERTIES AND MAN-MADE FIBRE SPINNING

- i) Properties of textile fibres
- ii) Classification of Textile fibres – vegetable, animal, mineral, regenerated, synthetic
- iii) Microscopic, physical and chemical test methods for fibre identification
- iv) Physical & Chemical properties of Vegetable fibres – Cotton, Jute, linen
- v) Physical & Chemical properties of Animal fibres – Wool, Silk
- vi) Physical & Chemical properties of Regenerated Cellulosic fibres – Viscose and Acetate Rayon, Cuprammonium Rayon
- vii) Physical & Chemical properties of Synthetic fibres – Polyester, Nylon
- viii) Requirements of fibre forming polymers
- ix) Spinning of Polymers - Melt Spinning, Wet spinning, Dryspinning
- x) Post Spinning Operations – Drawing, Crimping, Heat setting, Texturisation and spin finish application

UNIT- II: SPUN YARN FORMATION

- i) Ginning – Principle, machines and gin out-turn.
- ii) Objectives / Principles of opening, cleaning and mixing/blending machines
- iii) Working mechanisms of blowroom, card, drawframe, comber, comber preparatory, speedframe, ringframe, doubling machinery.
- iv) Salient features of blowroom, card, drawframe, comber, comber preparatory, speedframe, ringframe, doubling machinery.
- v) Working principles and features of open end spinning machines – rotor, air jet and air vortex
- vi) Norms and Critical settings related to quality / production in spinning machinery.
- vii) Yarn conditioning, reeling, bundling and baling
- viii) Maintenance of spinning machines

UNIT- III: TEXTILE CALCULATIONS

- i) Calculations of speed, draft, hank, production and efficiency in spinning machines.
- ii) Production and efficiency calculations in Winding, Warping, Sizing and Weaving
- iii) Indirect count systems –English, French, Worsted, linen and metric
- iv) Direct count systems – Tex and Denier.
- v) Conversion of yarn count from one system to other -Within Indirect, within Direct systems
- vi) Conversion of yarn count from indirect to direct systems and vice versa
- vii) Resultant count of folded yarn, Average count, Yarn Costing
- viii) Reed and heald calculations; Fabric cover, Fabric Costing.

UNIT- IV: FABRIC FORMATION

- i) Objectives of preparatory processes
- ii) Preparatory processes for handloom industry
- iii) Warp winding - random and precision winding, winding drum parameters
- iv) Stop motions, yarn clearers, tensioners and knotters/splicers
- v) Warping –Types of warping, Creels, Length measurement, stop motion
- vi) Working principles of Pirn winders

- vii) Sizing –Ingredients, Size recipes for cotton, silk and blends of cotton with polyester and viscose.
- viii) Principles of Drawing-in and Denting.
- ix) Primary, Secondary and Tertiary motions of loom, Loom timing diagram.
- x) Tappet, Dobby and Jacquard shedding, Handloom shedding motion, Drop Box mechanism.
- xi) Features of Pit loom, raised pit loom, frame loom, semi-automatic loom and improved handlooms.
- xii) Principles of Shuttleless Weft insertion systems.
- xiii) Maintenance of shuttle and shuttleless looms
- xiv) Fabric defects – causes and remedies

UNIT- V: FABRIC STRUCTURE

- i) Elements of woven fabric design – weave, draft and peg plan
- ii) Construction of Weaves - Plain weave and its derivatives, Regular and Modified Twills, Sateen and Satin, Crepe, Honey comb, Brighton honey comb, Mock-leno, Huck-a-back, Bedford cords, Welt, pique, backed cloth, Double Cloth, Triple Cloth, Tubular cloth, damask, tapestry, patent satin.
- iii) Extra warp and Extra weft figuring
- iv) Terry Pile – 3 pick, 4 pick, 5 pick and 6 pick terry weaves.
- v) Cut Pile – Velvets and Velveteens.
- vi) Gauze and Leno structures
- vii) Colour and Weave Effect
- viii) Computer Aided Textile Designing (CATD) – Photoshop, Coreldraw, Paintshop Pro and CATD softwares

UNIT - VI: CHEMICAL PROCESSING

- i) Preparatory processes – Desizing, Scouring and Bleaching – Objectives, Machines and Methods
- ii) Mercerisation – Objectives, Machines and Methods
- iii) Dyeing techniques for cotton, silk and blends– Direct, Reactive, Vat, Acid, Basic and Disperse dyes.
- iv) Batchwise and Continuous dyeing. Dyeing machines.
- v) Styles of printing – Direct, Resist, Discharge.
- vi) Printing techniques – Roller, Rotary Screen, Flat bed.
- vii) Mechanical and chemical finishing – calendaring, anti-shrink, resin finish, water repellent finish, flame retardant finish.

UNIT - VII: KNITTING, GARMENTS & MODERN DEVELOPMENTS IN HANDLOOMS

- i) Knitting - Yarn quality requirements, principles of weft and warp knitting
- ii) Basic weft and warp knitted structures and its properties – plain, rib, interlock and purl.
- iii) Garments - Pattern making, Spreading, Cutting, Sewing
- iv) Developments in Handlooms – Solid border weaving, multiple putta weaving, pneumatic / electrical lifting devices for jacquard, electronic jacquard for handlooms.

UNIT - VIII: TESTING & QUALITY CONTROL

- i) Important terms in Textile quality control – Mean, Median, Mode, SD, SE and CV.
- ii) Calculations related to test of significance.
- iii) Control charts and their applications in textile quality control.
- iv) Sampling techniques – objectives and types of sampling
- v) Humidity control – Standard and Testing atmosphere, Measurement of Relative Humidity.
- vi) Measurement of fibre length, strength, fineness, maturity and trash
- vii) Determination of yarn count, twist – Twist per unit length, twist multiplier; strength - CSP, RKM; elongation, hairiness, Evenness

- viii) Determination of fabric strength, stiffness, handle, drape, thickness, GSM, crease resistance, abrasion resistance, pilling resistance, air / water permeability, dimensional stability.
- ix) Determination of fastness to washing, rubbing, light.
- x) Inspection and Merchandising.

UNIT- IX: NONWOVENS, TECHNICAL TEXTILES& HANDLOOM FABRICS

- i) Classification of Nonwovens - Mechanical, Thermal and Chemical bonded fabrics
- ii) Technical Textiles- Belts, Tyre-cords, Coated abrasives, Airbags, Flame Resistant fabrics, Ballistic protective fabrics, Geotextiles, Medical Textiles.
- iii) Quality Particulars of handloom fabrics – Sarees, dhotis, angavastrams, bedsheets, towels, lungies, fabrics reserved for exclusive production on handlooms.
- iv) Traditional handloom Saris – Banaras, Kanchipuram, Jamdhani, Paithani, Chanderi, Patola, Sungudi, Ikats of Andhra Pradesh and Orissa.

UNIT- X: TEXTILE MILL MANAGEMENT

- i) Plant location, lay out, material handling in textile mills
- ii) Selection and balancing of preparatory machines and looms
- iii) Costing – Elements, Balance sheet, Profit & Loss Account
- iv) Production, Planning & Control.
- v) Total Quality Management, Management Information System.
- vi) Human Resources management – Selection, recruitment, training, Industrial relations and Labour laws
- vii) Role of BIS, AEPC, HEPC, IIHT, WSC, Textile Committee, Textile Commissioner Office.
- viii) New Textile Policy.
- ix) Pollution Control: Types - Air, Water, Noise; Characteristics of Effluent and Effluent treatment of Wet Processing industry
- x) Energy audit and conservation.

PAPER -II
SYLLABUS FOR WRITTEN EXAMINATION
Part-A

கட்டாய தமிழ்மொழி தகுதித் தேர்விற்கான பாடத் திட்டம்
(கொள்குறி வினாவிற்கான தலைப்புகள்)

பத்தாம் வகுப்பு தரம்

1. பிரித்தெழுதுதல் / சேர்த்தெழுதுதல்.
2. எதிர்ச்சொல்லை எடுத்தெழுதுதல்.
3. பொருந்தாச் சொல்லைக் கண்டறிதல்.
4. பிழைதிருத்தம் (i) சந்திப்பிழையை நீக்குதல் (ii) மரபுப்பிழைகள், வழுவச் சொற்களை நீக்குதல் / பிறமொழிச் சொற்களை நீக்குதல்.
5. ஆங்கிலச் சொல்லுக்கு நேரான தமிழ்ச் சொல்லை அறிதல்.
6. ஒலி மற்றும் பொருள் வேறுபாடறிந்து சரியான பொருளையறிதல்.
7. ஒரு பொருள் தரும் பல சொற்கள்.
8. வேர்ச்சொல்லைத் தேர்வு செய்தல்.
9. வேர்ச்சொல்லைக் கொடுத்து / வினைமுற்று, வினையெச்சம், வினையாலணையும் பெயர், தொழிற்பெயரை / உருவாக்கல்.
10. அகரவரிசைப்படி சொற்களை சீர் செய்தல்.
11. சொற்களை ஒழுங்குப்படுத்தி சொற்றொடராக்குதல்.
12. இரு வினைகளின் பொருள் வேறுபாடு அறிதல்.
(எ.கா.) குவிந்து-குவித்து
13. விடைக்கேற்ற வினாவைத் தேர்ந்தெடுத்தல்.
14. எவ்வகை வாக்கியம் எனக் கண்டெழுதுதல் - தன்வினை, பிறவினை, செய்வினை, செய்ப்பாட்டு வினை வாக்கியங்களைக் கண்டெழுதுதல்.
15. உவமையால் விளக்கப்பெறும் பொருத்தமான பொருளைத் தேர்ந்தெழுதுதல்
16. அலுவல் சார்ந்த சொற்கள் (கலைச்சொல்)
17. விடை வகைகள்.
18. பிறமொழிச் சொற்களுக்கு இணையான தமிழ்ச் சொற்களைக் கண்டறிதல்
(எ.கா.) கோல்டு பிஸ்கட் - தங்கக்கட்டி.
19. ஊர்ப் பெயர்களின் மரூஉவை எழுதுக (எ.கா.) தஞ்சாவூர் - தஞ்சை
20. நிறுத்தற் குறிகளை அறிதல்.
21. பேச்சுவழக்கு, எழுத்துவழக்கு (வாரான் - வருகிறான்).
22. சொற்களை இணைத்து புதிய சொல் உருவாக்கல்.

23. பொருத்தமான காலம் அமைத்தல்
(இறந்தகாலம், நிகழ்காலம், எதிர்காலம்).
24. சரியான வினாச்சொல்லைத் தேர்ந்தெடு.
25. சரியான இணைப்புச் சொல்
(எனவே, ஏனெனில், ஆகையால், அதனால், அதுபோல).
26. அடைப்புக்குள் உள்ள சொல்லைத் தருந்த இடத்தில் சேர்க்க.
27. இருபொருள் தருக.
28. குறில் - நெடில் மாற்றம், பொருள் வேறுபாடு.
29. கூற்று, காரணம் - சரியா? தவறா?
30. கலைச் சொற்களை அறிதல் :-
எ.கா. - Artificial Intelligence - செயற்கைநுண்ணறிவு
Super Computer - மீத்திறன் கணினி
31. பொருத்தமான பொருளைத் தெரிவு செய்தல்
32. சொற்களின் கூட்டுப் பெயர்கள் (எ.கா.) புல் -புற்கள்
33. சரியான தொடரைத் தேர்ந்தெடுத்தல்
34. பிழைதிருத்துதல் (ஒரு-ஓர்)
35. சொல் - பொருள் - பொருத்துக
36. ஒருமை-பன்மைபிழை
37. பத்தியிலிருந்து வினாவிற்கான சரியான விடையைத் தேர்ந்தெடு.

Part-B
General Studies
(SSLC Standard)
(Topics for Objective Type)

1. GENERAL SCIENCE

- i. Nature of Universe – Measurement of Physical Quantities – General Scientific Laws in Motion – Force, Pressure and Energy – Everyday application of the basic principles of Mechanics, Electricity, Magnetism, Light, Sound, Heat and Nuclear Physics in our daily life.
- ii. Elements and Compounds, Acids, Bases, Salts, Petroleum Products, Fertilizers, Pesticides, Metallurgy and Food Adulterants.
- iii. Main concepts of Life Science, Classification of living organisms, Evolution, Genetics, Physiology, Nutrition, Health and Hygiene, Human diseases.
- iv. Environmental Science.

2. CURRENT EVENTS

- i. Latest diary of events – National symbols – Profile of states – Eminent personalities and places in news – Sports – Books and Authors.
- ii. Welfare Scheme of Government – Political parties and Political system in Tamil Nadu and India.
- iii. Latest inventions in Science and Technology – Geographical Land Marks – Current Socio – Economic issues.

3. GEOGRAPHY

- i. Earth Location – Physical Features – Monsoon, rainfall, weather and climate– Water resources–Rivers –Soil, Minerals and Natural resources– Forest and Wildlife–Agriculture pattern.
- ii. Transport– Communication.
- iii. Population density and distribution in Tamil Nadu and India.
- iv. Calamities – Disaster Management – Environment – Climate change.

4. HISTORY AND CULTURE OF INDIA

- i. Indus Valley Civilization – Guptas, Delhi Sultans, Mughals and Marathas – South Indian History.
- ii. Characteristics of Indian Culture, Unity in Diversity – Race, Language, Custom.
- iii. India as a Secular State.

5. **INDIAN POLITY**

- i. Constitution of India – Preamble to the Constitution – Salient features of the Constitution – Union, State and Union Territory.
- ii. Citizenship, Fundamental Rights, Fundamental Duties, Directive Principles of State Policy.
- iii. Union Executive, Union Legislature – State Executive, State Legislature – Local Governments, Panchayat Raj.
- iv. Spirit of Federalism: Centre - State Relationships.
- v. Election – Judiciary in India – Rule of Law.
- vi. Corruption in public life – Anti-Corruption measures – Lokpal and Lokayukta – Right to Information – Empowerment of Women – Consumer Protection Forums – Human Rights Charter.

6. **INDIAN ECONOMY**

- i. Nature of Indian economy–Five year plan models – an assessment – Planning Commission and NitiAyog.
- ii. Sources of revenue – Reserve Bank of India – Finance Commission – Resource sharing between Union and State Governments – Goods and Services Tax.
- iii. Economic Trends – Employment Generation, Land Reforms and Agriculture – Application of Science and Technology in Agriculture – Industrial growth – Rural Welfare oriented programmes – Social Problems –Population, Education, Health, Employment, Poverty.

7. **INDIAN NATIONAL MOVEMENT**

- i. National Renaissance –Early uprising against British Rule–Indian National Congress – Emergence of Leaders –B.R.Ambedkar, Bhagat Singh, Bharathiar, V.O.Chidambaranar, Thanthai Periyar, Jawaharlal Nehru, Rabindranath Tagore, Kamarajar, Mahatma Gandhi, Maulana Abul Kalam Azad, Rajaji, Subhash Chandra Bose, Muthulaksmi Ammaiyar, Muvalur Ramamirtham and other National Leaders.
- ii. Different modes of Agitation of Tamil Nadu and movements.

8. **HISTORY, CULTURE, HERITAGE AND SOCIO-POLITICAL MOVEMENTS OF TAMIL NADU**

- i. History of Tamil Society, related Archaeological Discoveries, Tamil Literature from Sangam age till contemporary times.
- ii. **Thirukkural:**
 - a) Significance as a Secular Literature.
 - b) Relevance to Everyday Life.
 - c) Impact of Thirukkural on Humanity.
 - d) Thirukkural and Universal Values – Equality, Humanism etc.
 - e) Relevance to Socio – Politico –Economic affairs.
 - f) Philosophical content in Thirukkural.
- iii. Role of Tamil Nadu in freedom struggle – Early agitations against against British Rule – Role of women in freedom struggle.
- iv. Various Social reformers, Social reform movements and Social transformation of Tamil Nadu.

9. **DEVELOPMENT ADMINISTRATION IN TAMIL NADU**

- i. Social Justice and Social Harmony as the Cornerstones of Socio-Economic Development.
- ii. Education and Health systems in Tamil Nadu.
- iii. Geography of Tamil Nadu and its impact on Economic growth.

10. **APTITUDE & MENTAL ABILITY TESTS**

- i. Simplification – Percentage – Highest Common Factor (HCF) – Lowest Common Multiple (LCM).
- ii. Ratio and Proportion.
- iii. Simple Interest– Compound Interest – Area – Volume – Time and Work.
- iv. Logical Reasoning – Puzzles – Dice – Visual Reasoning – Alpha Numeric Reasoning – Number Series.