

### 9. SCHEME OF THE EXAMINATION (OBJECTIVE TYPE) (OMR Method):-

Subject	Duration	Maximum Marks	Minimum Qualifying Marks for Selection	
			SCs, SC(A)s, STs, MBC/DCs, BC(OBCM)s & BCMs	'Others'
<p><b>Paper –I(Objective Type)</b> (Subject Paper) (200 questions) (ITI Standard) <b>Choose any one of the following subjects</b></p> <ol style="list-style-type: none"> <li>1. Surveyor (National Trade Certificate)(Code No.387)</li> <li>2. Draughtsman (Civil) (National Trade Certificate) (Code No.388)</li> </ol>	3 Hours	300	<b>135</b>	<b>180</b>
<p><b>Paper II (Objective Type)</b></p> <p><b>Part-A</b> Tamil Eligibility Test (SSLC Standard) (100 Questions/150 Marks)</p>	<b>3 Hours</b>	<p>Note: Minimum qualifying marks – 60 marks (40% of 150). Marks secured in Part-A of Paper-II will not be taken into account for ranking.</p>		
<p><b>Part-B</b> <b>General Studies (100 Questions/150 Marks)</b> <b>(Code: 003)</b> General Studies (ITI Standard) (75 Questions) + Aptitude and Mental Ability Test (SSLC Standard)(25 Questions)</p>		<b>150*</b>		
<b>Total</b>		<b>450</b>		

**Note:**

- a. Though the candidates are allowed to appear for any one of the Subject paper mentioned above, they will be considered for any of the posts mentioned in para. 5(B) of Notification, based on their qualification possessed by the candidates.
- b. Answer sheets of Paper-I and Part B of Paper II of the candidates will not be evaluated, if the candidate does not secure minimum qualifying marks in Part-A of Paper-II.
- c. Only marks secured in Paper-I and Part-B of Paper-II will be considered for ranking/selection.
- d. The questions in Paper–I and Part–B of Paper-II will be set both in Tamil and English language. Part-A of Paper-II will be set only in Tamil Language.
- e. The candidate should appear for all the papers in the written examination for his/ her answer sheets to be evaluated and in case the candidate absents

**Paper-I (Objective Type)  
SURVEYOR (ITI STANDARD)  
NATIONAL TRADE CERTIFICATE**

**Unit-1: Basic Engineering Drawing**

**Role of Surveyor:**

Know about the role of a surveyor - State the importance of survey.

**Layout of drawing sheets and title block:**

State the meaning of the term 'Layout' of drawing sheet - List the different layout styles of drawing sheets - Explain margin, frame, title block etc.

**Free hand sketching:**

State the need free hand sketching - List the situations wherein free hand sketching is useful.

**Drawing equipment - Drawing board, T-Square:**

State the construction and use of drawing boards and 'T' square - State the standard sizes of drawing board as per IS:1444-1989 - State the standard sizes of 'T' square as per IS: 1360-1989 - State the construction and uses of drafting machine - Select the pencil grades for different drawing application - Select the purpose of erasing shield - State the use of set squares in drawing work.

**Folding of sheets:**

Explain the method of folding in different size of drawing sheets.

**Lettering styles:**

Recognise different lettering styles - Designate the letters and numerals as per IS norms - State standard properties for height, width and spacing of letters.

**Scales:**

State the necessity of scales - Explain representative fraction (RF) - List the types of scales - Explain plain, Diagonal scale, comparative scale and Vernier scale.

**Dimensioning:**

Explain the types of dimensioning - Explain the elements of dimensioning - Explain the methods of indicating dimensioning - Explain the arrangement of dimensioning.

**Types of lines and angles:**

Define points and lines - State classification of lines - State the different types of angles - Explain the method of measuring angles.

**Triangles and their properties:**

Define triangles - Name the different types of triangles and state their properties.

**Quadrilaterals and their properties:**

Define a quadrilateral - Name the quadrilaterals - State the properties of quadrilaterals.

**Polygon and their properties:**

Define a Polygon - Name the Polygon in terms of the number of sides - State the properties of Polygon.

## **Unit-2: Chain Surveying**

### **Introduction about Surveying:**

Define Surveying - State the object of surveying - State technical terms - State the classification of Surveying - State the principles of Surveying - State the work of Surveyor - State the accuracy in chain Survey - State steel band

### **Measurement of distance by a chain and chaining:**

State the methods of determining distance - State chaining and chaining a line - State unfolding the chain - Describe the reading the chain - State folding the chain - Calculate the errors in chaining.

### **Introduction about chain survey instruments:**

State the construction and uses of the following chain survey instruments.

### **Ranging:**

State ranging - State the necessity of ranging - State the types of ranging - Interpret the signals surveyor and the corresponding action by assistance.

### **Chaining on sloping ground:**

Explain the methods of changing on sloping ground - State necessity of calculating horizontal distances.

### **Offset and Offsetting:**

State the meaning of offset and offsetting - State the classification of offsets, its limits and its definition - State the methods of taking offsets for various site conditions.

### **Obstacles in chain surveying:**

Define obstacles - State the three types of obstacles - Calculate the obstructed distance.

### **Introduction used for setting out right angles:**

List out the instrument used for setting out right angles - State the types of cross staff and optical square - State the construction of cross staff and optical square - Explain the principles of optical square - State the uses of cross staff and optical square.

### **Introduction about triangulation survey:**

Define the triangulation and traverse in survey - State closed and open traversed survey - State the three types of survey lines in triangulation  
Explain about field work.

### **Calculation of area:**

Calculate the areas of an irregular field - Apply geometrical formula for calculating the area - Describe the construction and use of planimeter.

## **Unit – 3: Compass Surveying**

### **Identification and parts of instruments in compass survey:**

State about traversing - State types of compass - Name the prismatic compass and construction - Construction of surveyor's compass

**Determining the bearing of a given triangular plot ABC and calculation of included angles:**

Calculate angles from bearings - Calculate bearing from angles.

**Determining the bearing of a given pentagonal plot of ABCDE and calculating included angles magnetic declination and plotting of compass survey:**

Calculate the angles from bearing for a closed traverse - Calculate the bearing from angles for a closed traverse - Calculate the bearing of a pentagon - Define the dip of the magnetic needles - State the magnetic declination and variations - Calculate true bearing - State local attraction and its elimination - Explain about errors and its limits - State the testing the prismatic compass.

**Unit – 4:Plane Table Surveying****Setting up of plane table and methods of plane tabling:**

State plane tabling - Name the instruments and accessories used in plane tabling - State the construction and uses of instruments accessories of plane tabling - Explain about the setting up of plane table over a station - Explain about leveling, centering and orientation in plane tabling - Explain the methods of plane tabling

**Methods of plane table survey:**

Methods of plane table survey - Radiation methods of plane table survey  
Intersection methods of plane table survey

**Traversing method of plane table survey:**

State traverse methods of plane table survey - Conduct traverse methods of plane table survey.

**Locate and plot new building by two point and three point problem:** Define about resection - State two and three point problem - Describe Lehman's rule - List out the errors in plane tabling - Describe the advantage and disadvantage

**Prepare a road map for 1/2 km showing details on both sides:**

Prepare a road map and locate the details on both sides

**Inking, finishing, colouring and tracing of plane table map:**

Explain about colouring of surveying symbols - Explain the importance of tracing - State the techniques/order of tracing a drawing - State the different types of reproduction of drawings.

**Minor instruments used with or without plane tabling:**

Explain about the construction and uses of Abney level, tangent clinometers, De Lisle's clinometers.

**Unit – 5: LEVELLING&CONTOURING****Instruments Used for Levelling:**

Explain the tilting level and auto level - Explain the construction a dumpy level - Explain the classification of leveling staff.

**Introduction of contouring:**

Define contouring - Explain the terms in contouring - Narrate the characteristics of contour

**Topography and contour:**

State Topography - State contour.

**Tracing of grade contour:**

Trace the contour gradient for alignment of roads, railways, etc -  
Determine the volume of earth work and capacity of reservoir

**Computation of volume:**

Explain the various methods for the quantity of earth work - Compute quantity of earth work by average depth method - Compute the quantity of earth work by trapezoidal and primordial formula

**Unit-6:THEODOLITE****Introduction to theodolite:**

Explain the uses of the theodolite - Explain the classify of the theodolite - Explain the designate of the theodolite

**Temporary adjustment of theodolite:**

Set up and perform centering of the instrument - Level up the theodolite  
Eliminate parallax

**Measuring horizontal angle-repetition method:**

Explain the repetition method - State advantage of repetition method  
State errors which are not eliminated by repetition method.

**Measuring vertical angle:**

Define vertical angle - Differentiate angle of elevation and angle of depression -  
Explain how to measure vertical angle

**Deflection angle and direct angle:**

State deflection angle - Differentiate right deflection angle and left deflection angle  
- State the direct angle - Differentiate deflection angle and direct angle

**Prolonging a line:**

State the method for prolonging a line - Compare the method for prolonging a line  
- State most suitable method for prolonging a line

**Intersection of two straight lines:**

Explain method one: to find intersection point of two lines - Explain method two:  
to find intersection point of two lines

**Laying of a horizontal angle:**

Explain laying of a horizontal angle by ordinary method - Explain laying of a  
horizontal angle by repetition method - Find equivalent lenier distance for an  
angular value

**Traverse:**

State uses of traverse surveying - State types of traverse - Differentiate open end  
closed traverse

**Traverse checking:**

Explain the checks for open traverse - Explain the checks for closed traverse

**Classification of traverse:**

Classify traverse based on the instrument used - Explain method of traversing - Explain how to measure traverse length in theodolite traversing - Explain how to measure traverse angle in theodolite traversing

**Theodolite traversing method:**

State methods of theodolite surveying - Explain loose needle method - Explain fast needle method - Compare loose needle and fast needle method

**Theodolite traversing method II:**

Explain include angle method - Explain direct angle method - Explain deflection angle method - Explain azimuth method

**Theodolite phases:**

Explain theodolite traversing phases

**Closing error:**

Define closing error - Find magnitude and direction of closing error

**Latitudes and departures:**

Determine latitude - Determine departures - Balance the traverse using transit method - Balance the traverse using Bowditch's (mathematical) method

**Balancing the traverse:**

Explain balancing the error - Describe various mathematical and graphical methods of balancing the traverse

**Omitted measurements:**

Describe omitted measurements - List out and explain the classification of omitted measurement

**Trigonometric levelling (indirect leveling):**

State advantage of indirect leveling - Explain various cases of trigonometric leveling - deduce the reduce level using the appropriate formula

**Introduction to curves:**

Explain the necessity for the provision of curves on road and railway - Explain the classification of curves - Explain the different terms used in curve

**Setting of horizontal curve by linear method:**

Determine the elements of curve - Determine the offset from long chord - Explain the method of setting cut curve by offset from long chord

**Setting out curves by angular methods:**

Determine the deflection angles of chords - Narrate the procedure of setting out of simple curve by one theodolite and tape method

**Unit-7: TACHOMETRY****Methods of tachometry:**

List the methods of tachometry - Explain the fixed hair method - Explain the movable hair method

**Tangential method of tachometry:**

Explain the tangential method of tachometry - Explain the construction of substance bar - Explain the substance method of tachometry

**Triangulation:**

Explain the term triangulation

**Unit-8: MODERN SURVEYING INSTRUMENTS****Digital theodolite:**

Explain the features of the digital theodolite - Explain the difference between theodolite and digital theodolite

**Total Station:**

Describe the features of the total station - Explain evolution of total station from the conventional equipment - Narrate the benefits of total station

**Remote sensing:**

Explain remote sensing and photogrammetry.

**GPS:**

Explain the features of global positioning system (GPS) - Narrate the use of GPS and method of surveying for accurate output - List the benefits of GPS

**Unit-9: CADD****Introduction to cad:**

Explain the term CAD - Explain the use of CAD

**Draw tool bar:**

Explain draw commands in CAD - Explain the method of drawing geometrical shapes in CAD

**Layers:**

Explain the dimensioning method in CAD - Explain the use of object snap in CAD

**Modifying tool bar:**

List out various modifying tools in CAD - Explain the uses of modifying tools in CAD

**Printing cad drawings:**

Explain the steps involved in plotting in cad

**Unit-10: Building & Drainage****Building Drawing:**

State the requirement of a good building drawing - State the method of drawing plan, elevation and typical section - State the scales used in building drawing - State Dimensioning and printing for building drawing.

**Drainage:**

State drainage and surface drainage - State four shapes of surface drainage.

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**DRAUGHTSMAN (CIVIL) (ITI STANDARD)**  
**NATIONAL TRADE CERTIFICATE**

**UNIT 1: BASIC ENGINEERING DRAWING**

**Engineering Drawing:**

State the importance of engineering drawing, State the areas of civil engineering drawing.

**List of drawing instruments, equipments and materials to be used during training:**

State instruments, equipments and materials, List out instruments, equipments and materials, State the standard as per 962-1987, To use different drawing instruments, equipments and materials, Follow precautions in the use of instruments, equipments and materials.

**Layout of drawing Sheet:**

State the system of layout of drawing sheet, List the different layout for designated drawing sheet Explain the title block.

**Folding of drawing Sheet:**

State the purpose of folding a drawing sheet, Explain the method of folding for drawing sheet

**UNIT 2: GEOMETRICAL CONSTRUCTION:**

**Plane Geometrical construction:**

Define the terms of most commonly used geometrical shapes

**Types of Lines and Angles:**

Define points and lines, State the classification of lines, State the different types of angles, Explain the method of measuring angles.

**Triangles and their types:**

Define triangles, Name the different types of triangles and state their properties.

**Quadrilaterals and their properties:**

Define a quadrilateral, Name the quadrilaterals, State the properties of quadrilaterals

**Polygon and their properties:**

Define Polygon, Name the Polygon in terms of the number of sides, State the properties of polygon.

**UNIT 3: CHAIN SURVEYING**

**Introduction - History and principles of chain survey and instrument & employed**

Define surveying, Explain the classification of Surveying, Narrate different methods of measurements, Express the instruments used for chain surveying.



**Introduction about chain survey instruments**

State the construction and uses of the chain survey instruments

**Testing of metric chain (20m/30m)**

State the necessity of checking the chain, State the methods of testing, List out then errors in the chain, State the limits of error in chain, Explain the adjust the chain, State Indian optical square

**Measurement of distance by chain and chaining**

State chaining and chaining a line, State unfolding the chain, Describe the reading the chain, State folding the chain, Calculate the errors in chaining

**UNIT 4: COMPASS SURVEYING****Identification and parts of instruments in compass survey:**

State about traversing, State types of compass, Name the prismatic compass and construction, Construction of survey's compass

**Determining the bearing of a given triangular plot of ABC and calculation of included angles:**

Calculate angles from bearing, Calculate bearing from angles

**Determining the bearing of a given pentagonal plot of ABCDE and calculation of included angles**

Calculate angles from bearings for a closed traverse, Calculate bearing from angles for a closed traverse, Calculate bearing of a pentagon

**Magnetic declination and local attraction**

Define the dip of the Magnetic needles, State the magnetic declination and variations, Calculate true Bearing, State local attraction and its elimination, Explain about errors and limits, State the testing the prismatic compass

**UNIT 5: PLANE TABLE SURVEYING****Instrument used in plane table surveying:**

State plane tabling, Name the instruments and accessories used in plan tabling, State the construction and uses of instruments and accessories used in plan tabling, Explain about leveling, centering and orientation in plain tabling, Explain the methods of plain tabling

**Resection method of plane table survey:**

State the resection method of plane table survey

**UNIT 6: LEVELLING****Types of levelling:**

Name the various types of levelling, Explain simple levelling, Explain differential levelling, Complete the reduced levels of points.

**UNIT 7: ROAD ENGINEERING - I:****Introduction to road engineering:**

Define road, Define highway engineering, Define necessity and characteristics of road

**Technical term used in road engineering:**

Define road and Total Station advantage, Define various terms used in road engineering, Describe the various advantages of road

**Principle of road alignment:**

Alignment of road, Express the principle of highway alignment, Explain the different survey required for alignment

**Classification of roads:**

Describe the different classification of roads

**UNIT 8: ROAD ENGINEERING II:****Road Margins:**

Define road margin, Describe the element Total Station of road margin

**Camber, super elevation, sight distance and gradient:**

Define camber, Explain super elevation, sight distance and express gradient

**UNIT 9: TOTAL STATION****Introduction to total station:**

Get introduced to the Total station, Learn the evaluation of Total station from the convectional equipmen Total Station, Explain the benefit Total Station and uses of Total station

**Types of total station:**

Explain the advantages and disadvantages of Total station, Explain the types of Total Station, Explain the precautions to be taken while using Total Station

**Measurement with total station:**

Explain the equipment required for Total Station surveying, Explain the procedure of measurement with Total Station

**Characteristics and features of total station:**

Define the features of Total Station, State the characteristics of Total Station, Advantages and disadvantages of Total Station

**Principle of EDM- Working need setting and measurement Total Station:**

Define EDM, State the principle of EDM, Features of EDM

**Setting and measurement Total Station:**

Define distance measuring, State principal of EDM, State classification of EDM

**Total station Prism- instrument error operation:**

Explain Total Station prisms, Describe sources of error in EDM, EDM instrument operation, Uses of EDM

**Electronic display and data recording:**

Define electronic data recording, Explain field computers, Define recording module, Internal memories

**Rectangular and Polar Co-ordinate system:**

Illustrate rectangular and polar coordinates

**UNIT 10: GLOBAL POSITIONING SYSTEM****Introduction of GPS:**

Explain GPS coordinate system, Describe Geographic latitude and longitude, GPS equipment

**Satellite and Conventional Geodetic system:**

What is satellite system, Define Geodetic system

**GPS coordinate system and component Total Station of GPS & System segment Total Station:**

Explain GPS coordinate system, Describe Geographic Latitude and Longitude, Explain and describe component Total Station GPS receiver

**GPS segment Total Station:**

Define GPS segment

**Principle of Operation of GPS and surveying with GPS:**

State the Principle of Operation of GPS, Describe the role of transit in GPS

**Remote sensing:**

Explain Remote sensing, Distinguish between GPS, GIS and Total Station

**GPS signal code - GPS basics:**

Introduction to digital signal, Explain data acquisition system, Describe signal processing, Explain code an basics

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கட்டாயத் தமிழ் மொழித் தகுதித் தேர்விற்கான பாடத்திட்டம்

(கொள்குறி வினாவிற்கான தலைப்புகள்)

பத்தாம் வகுப்பு தாம்

1. பிரித்தெழுதுதல் / சேர்த்தெழுதுதல்.
2. எதிர்ச் சொல்லை எடுத்தெழுதுதல்.
3. பொருந்தாச் சொல்லைக் கண்டறிதல்.
4. பிழை திருத்தம் (i) சந்திப்பிழையை நீக்குதல் (ii) மரபுப்பிழைகள், வழுவச் சொற்களை நீக்குதல் / பிறமொழிச் சொற்களை நீக்குதல்.
5. ஆங்கிலச் சொல்லுக்கு நேரான தமிழ்ச்சொல்லை அறிதல்.
6. ஒலி மற்றும் பொருள் வேறுபாடறிந்து சரியான பொருளையறிதல்.
7. ஒரு பொருள்தரும் பலசொற்கள்.
8. வேர்ச்சொல்லைத் தேர்வு செய்தல்.
9. வேர்ச்சொல்லைக் கொடுத்து / வினைமுற்று, வினையெச்சம், வினையாலணையும் பெயர், தொழிற் பெயரை / உருவாக்கல்.
10. அகரவரிசைப்படி சொற்களை சீர்செய்தல்.
11. சொற்களை ஒழுங்குப்படுத்தி சொற்றொடராக்குதல்.
12. இருவினைகளின் 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 விளக்கப் பெறும் பொருத்தமான பொருளைத் தேர்ந்தெழுதுதல்
16. அலுவல் சார்ந்த சொற்கள் (கலைச்சொல்)
17. விடை வகைகள்.
18. பிறமொழிச் சொற்களுக்கு இணையான தமிழ்ச் சொற்களைக் கண்டறிதல்  
(எ.கா.) கோட்டுபிஸ்கட் - தங்கக்கட்டி.
19. ஊர்ப்பெயர்களின் மரூஉவை எழுதுக (எ.கா.) தஞ்சாவூர் - தஞ்சை
20. நிறுத்தற்குறிகளை அறிதல்.

21. பேச்சு வழக்கு, எழுத்து வழக்கு (வாரான் - வருகிறான்).
22. சொற்களை இணைத்து புதியசொல் உருவாக்கல்.
23. பொருத்தமான காலம் அமைத்தல்  
(இறந்த காலம், நிகழ் காலம், எதிர் காலம்).
24. சரியான வினாச்சொல்லைத் தேர்ந்தெடு.
25. சரியான இணைப்புச்சொல்  
(எனவே, ஏனெனில், ஆகையால், அதனால், அதுபோல).
26. அடைப்புக்குள் உள்ள சொல்லைத் தகுந்த இடத்தில் சேர்க்க.
27. இருபொருள் தருக.
28. குறில் - நெடில் மாற்றம், பொருள் வேறுபாடு.
29. கூற்று, காரணம் - சரியா? தவறா?
30. கலைச் சொற்களை அறிதல் :-  
எ.கா. - Artificial Intelligence - செயற்கை நுண்ணறிவு  
Super Computer - மீத்திறன் கணினி
31. பொருத்தமான பொருளைத் தெரிவுசெய்தல்
32. சொற்களின் கூட்டுப் பெயர்கள் (எ.கா.) புல் - புற்கள்
33. சரியான தொடரைத் தேர்ந்தெடுத்தல்
34. பிழைதிருத்துதல் (ஒரு-ஓர்)
35. சொல் - பொருள் - பொருத்துக
36. ஒருமை-பன்மை பிழை
37. பத்தியிலிருந்து வினாவிற்கான சரியான விடையைத் தேர்ந்தெடு.

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**Paper-II****Code No.003****Part-B**  
**General Studies (ITI 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 NITI Aayog.
- 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 AbulKalam 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 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.

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