

જગ્યાનું નામ : સંયુક્ત તાંત્રિક સલાહકાર (પી.આઇ.), વર્ગ-૧

ભાગ-૧ અને ભાગ-૨ ના ૧૮૦ મિનિટના સંયુક્ત પ્રશ્નપત્રની પ્રાથમિક કસોટીનો અભ્યાસક્રમ

ભાગ-૧

પ્રાથમિક કસોટીનો અભ્યાસક્રમ પ્રશ્નપત્ર-૧	
માધ્યમ: ગુજરાતી	કુલ ગુણ : ૧૦૦
૧	ભારતની ભૂગોળ- ભૌગોલિક, આર્થિક, સામાજિક, કુદરતી સંસાધન અને વસ્તી અંગેની બાબતો- ગુજરાતના ખાસ સંદર્ભ સાથે
૨	ભારતનો સાંસ્કૃતિક વારસો- સાહિત્ય, કલા, ધર્મ અને સ્થાપત્યો- ગુજરાતના ખાસ સંદર્ભ સાથે
૩	ભારતનો ઇતિહાસ- ગુજરાતના ખાસ સંદર્ભ સાથે
૪	ભારતની અર્થવ્યવસ્થા અને આયોજન
૫	ભારતીય રાજનીતિ અને ભારતનું બંધારણ: (૧) આમુખ (૨) મૂળભૂત અધિકારો અને ફરજો (૩) રાજ્યનીતિના માર્ગદર્શક સિદ્ધાંતો (૪) સંસદની રચના (૫) રાષ્ટ્રપતિની સત્તા (૬) રાજ્યપાલની સત્તા (૭) ન્યાયતંત્ર (૮) અનુસૂચિત જાતિ, અનુસૂચિત જનજાતિ અને સમાજના પછાત વર્ગો માટેની જોગવાઈઓ (૯) એટર્ની જનરલ (૧૦) નીતિ આયોગ (૧૧) પંચાયતી રાજ (૧૨) નાણા પંચ (૧૩) બંધારણીય તથા વૈધનિક સંસ્થાઓ- ભારતનું ચૂંટણી પંચ, સંઘ લોક સેવા આયોગ, રાજ્ય લોક સેવા આયોગ, કોમ્પ્ટ્રોલર એન્ડ ઓડિટર જનરલ; કેન્દ્રીયસતર્કતા આયોગ, લોકપાલ તથા લોકાયુક્ત અને કેન્દ્રીય માહિતી આયોગ
૬	સામાન્ય બૌદ્ધિક ક્ષમતા કસોટી
૭	સામાન્ય વિજ્ઞાન, પર્યાવરણ અને ઇન્ફર્મેશન એન્ડ કોમ્યુનિકેશન ટેકનોલોજી
૮	ખેલ જગત સહિત રોજબરોજના પ્રાદેશિક, રાષ્ટ્રીય અને આંતરરાષ્ટ્રીય મહત્વના બનાવો

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Syllabus of Preliminary Test	
Paper-1	
Medium: Gujarati	Total Marks- 100
1	Geography of India-Physical, Economic, Social, Natural Resources and population related topics- with special reference to Gujarat
2	Cultural heritage of India-Literature, Art, Religion and Architecture- with special reference to Gujarat
3	History of India with special reference to Gujarat
4	Indian Economy and Planning
5	<u>Indian Polity and the Constitution of India:</u> (1) Preamble (2) Fundamental Rights and Fundamental Duties (3) Directive Principles of State Policy (4) Composition of Parliament (5) Powers of the President of India (6) Powers of Governor (7) Judiciary (8) Provisions for Scheduled Castes, Scheduled Tribes and backward classes of the society (9) Attorney General (10) NITIAayog (11) Panchayati Raj Institutions (12) Finance Commission (13) Constitutional and Statutory Bodies: Election Commission of India, Union Public Service Commission, State Public Service Commission, Comptroller and Auditor General; Central Vigilance Commission, Lokpal and Lokayukta, Central Information Commission
6	General Mental Ability
7	General Science, Environment and Information & Communication Technology
8	Daily events of Regional, National and International Importance including Sports

**PART- II (SUBJECT RELATED SYLLABUS)**

**Syllabus for the Preliminary Test for the Post of  
Joint Technical Advisor (Precision Instrument), Class-I**

**Advt. No. : 42/2017-18**

**Total Question: 200**

**Total Marks : 200**

**Medium: English**

**1. Important Engineering Materials:**

Properties of materials, Ferrous & Nonferrous materials and other important engineering materials such as Timber, Abrasive material, silica, ceramics, glass, graphite, diamond, plastic, polymer and composite material. Basic concepts of Water Technology, Metals and alloys, Fuels and Combustion, Lubricants, Cements, Rubber, Natural and Synthetic Fibers, Protective Coatings, Paints and varnishes etc.

**2. Elements of Mechanical Engineering:**

Introduction, Prime movers, Sources of energy, Types of prime movers, Force and mass, Pressure, Work, Power, Energy, Heat, Temperature, Units of heat, Specific heat capacity, Interchange of heat, Change of state, Mechanical equivalent of heat, Internal energy, Enthalpy, Entropy, Efficiency, Statements of Zeroth Law, First law and Second Law of Thermodynamics.

**3. Elements of Electrical Engineering:**

D.C. Circuits: - Effect of Temperature upon Resistance, Solutions of series, parallel in brief, star-delta combination of Resistances, KVL & KCL.

**Electrical Wiring:** Connectors & switches, system of wiring, domestic wiring installation, sub circuits in domestic wiring, simple control circuit in domestic installation, industrial electrification.

**Illumination:** Types of lamps, fixtures & reflectors, illumination schemes for domestic, industrial & commercial premises, Lumen requirements for different categories.

**Safety & protection:** Safety, electric shock, first aid for electric shock other hazards of electrical laboratories & safety rules, use of multi meters, grounding,

importance of grounding, equipment of grounding for safety. Circuit protection devices, fuses, MCB, ELCB & relays.

- 4. Power Electronics:** Power Semiconductor Devices, Construction and Characteristics of Power diodes, Power Transistors, Power MOSFET, Insulated Gate Bipolar transistors (IGBTs), Introduction to Thyristor family, Phase Controlled (AC to DC) Converters, DC to DC Converters, DC Drives with phase controlled converters, DC drives with DC-DC converters.
- 5. Energy:** types, classification and resources; Clean energy resources; Destruction and Conservation.
- 6. Elements of Computer and IT Engineering:** Introduction, Basic block Diagram and functions of various components of computer. Concept of Hardware and Software. Concept of basic types of software. Introduction to programming and programming languages. Flow charts and algorithms.
- 7. Principles of Management**  
Historical Development, Definition of Management, Management and Administration, Functions of Management, Types of Business Organization, Concept of Business Ethics and Social Responsibility, Tools of Ethics: Planning, Organising, Directing, Controlling.
- 8. Production & Operations Management**  
Operations Strategy and Competitiveness, Product Design and Process Selection – Manufacturing, Facility Location, Facility Layout, Forecasting, Inventory Management, MRP, Aggregate Planning, Operations Scheduling, Project Management, Queuing - The Management of Waiting Lines, Supply Chain Management, Quality Management and Statistical Quality Control.

**9. Economic System and Business**

Economic System: capitalism, socialism and mixed economy, National Income, Monetary and Fiscal Policy (finance commission), Industrial Policy, Union Budget, Social Environment, Technological Environment, International Business Environment.

**10. Financial Management**

Meaning of Financial Management, Financial System, Working Capital Management as a Decision to Create Value for the Business, Investment Decision and Various Steps Involved Financing Decision and Various Sources of Finance, Dividend Decision, Theory and Practice.

**11. Environmental Science:** Definition and Inter-relationships between Components of Environment, Impact of Technology on the environment, Depletion of Natural Resources; Environmental Pollution and degradation, Greenhouse effect, acid rain, Ozone depletion, Photochemical smog. Policies and Treaties for the protection of environment at the national and the international level. National Action plans on Climate Change and Disaster management.

**12. Awareness of Common Effluent Treatment Plant (CETP), Electronics & Quality Development Centre (EQDC), Ahmedabad Textile Industry's Research Association (ATIRA).**

**13. Small Business & Management of MSMEs**

Concept & Definition, Role of Small Business in the modern Indian Economy, Small entrepreneur in International business; Steps for starting a small industry, registration as SSI, Role of SIDBI; advantages and problems of SSIs; Institutional Support mechanism in India; Incentives & Facilities, Govt. Policies for SSIs, Setting MSMEs- location of enterprise - steps in setting - Problems of entrepreneurs - Sickness in small industries - reasons and remedies - Incentives

and subsidies - Evaluating entrepreneurial performance - Rural entrepreneurship  
- Women Entrepreneurship.

**14. Organizational setup and functions of various departments/ divisions/ institutions/ boards under Ministry of Commerce and Industry, Ministry of Micro, Small and Medium Enterprises, Ministry of New and Renewable Energy, Ministry of Power and Ministry of Food Processing Industries.**

**15. Various Government Policies and Acts:**

New Industrial Policy, 2015 of Government of Gujarat, State Government's Cluster Development Policy and various R & D institutions, State Government's Cottage and Rural Industries Policy 2016, Comprehensive Agro Business Policy (2016-21) of Government of Gujarat, The Micro, Small and Medium Enterprises Development Act, 2006, The Gujarat Special Economic Zones Act, 2004, The Gujarat Industrial Development Act, 1962 etc. Central and State Government's Various Policies of energy sector including Solar Power Policies. National Policy on Electronics (NEP). Modified Special Incentive Package Scheme (M-SIPS). Electronics Manufacturing Clusters (EMC). Electronics Development Fund (EDF) Policy. Promotion of Exports of Electronics Products with reference to Foreign Trade policy and Merchandise exports From India scheme (MEIS). Make in India strategy for Electronics Product Manufacturing.

**16. Various Schemes for Industrial Development of Central Government and Gujarat State Government.**

**17. Current Trends and Recent Advancements in Industrial Development.**