



ગુજરાત જહેર સેવા આયોગ

સેક્ટર - ૧૦-એ, છ-૩ સર્કલ પાસે, છ રોડ,
ગાંધીનગર - ૩૮૨૦૧૦

જહેરાત ક્રમાંક: ૩૦/૨૦૨૪-૨૫, મદદનીશ ઇજનેર (સીવીલ), વર્ગ-૨ (GMC) ની જગ્યા પર
ભરતી માટેની પ્રાથમિક કસોટીમાં ભાગ-૧ અને ભાગ-૨ ના ૧૮૦ મિનિટના સંયુક્ત
પ્રશ્નપત્રનો અભ્યાસક્રમ

સીધી પરંદગીથી ભરતીની પ્રાથમિક કસોટીનો અભ્યાસક્રમ

ભાગ-૧

માધ્યમ: ગુજરાતી અને અંગ્રેજી.

કુલ ગુણા : ૧૦૦

મુદ્દા	વિષય	ગુણા
૧	ભારતની ભૂગોળ- ભૌગોલિક, આર્થિક, સામાજિક, કુદરતી સંસાધન અને વર્તતી અંગેની બાબતો- ગુજરાતના ખાસ સંદર્ભ સાથે	
૨	ભારતનો સાંક્રાન્તિક વારસો- સાહિત્ય, કલા, ધર્મ અને રથાપત્યો- ગુજરાતના ખાસ સંદર્ભ સાથે	
૩	ભારતનો ઇતિહાસ- ગુજરાતના ખાસ સંદર્ભ સાથે	
૪	ભારતની અર્થવ્યવર્થા અને આયોજન	
૫	<p>ભારતીય રાજનીતિ અને ભારતનું બંધારણા:</p> <p>(૧) આમુખ</p> <p>(૨) મૂળભૂત અધિકારો અને ફરજો</p> <p>(૩) રાજ્યનીતિના માર્ગદર્શક સિદ્ધાંતો</p> <p>(૪) સંસદની રચના</p> <p>(૫) રાષ્ટ્રપતિની સત્તા</p> <p>(૬) રાજ્યપાલની સત્તા</p> <p>(૭) ન્યાયતંત્ર</p> <p>(૮) અનુચ્ચચિત જાતિ, અનુચ્ચચિત જનજાતિ અને સમાજના પણાત વર્ગો માટેની જોગવાઈઓ</p> <p>(૯) નીતિ આયોગ</p> <p>(૧૦) બંધારણીય તથા વૈધાનિક સંક્ષેપીય પંચ, કોમ્પ્ટોલર એન્ડ ઓડિટર જનરલ, માહિતી આયોગ</p>	30
૬	સામાન્ય વિજ્ઞાન, પર્યાવરણ અને ઈન્જિનીઝિન્ફેશન ટેકનોલોજી	90
૭	ખેલ જગત સહિત શોજબશોજના પ્રાણીકરણ, રાષ્ટ્રીય અને આંતરરાષ્ટ્રીય મહત્વના બનાવો	90
૮	<p>સામાન્ય જૌદ્ધિક ક્ષમતા કસોટી</p> <p>(૧) તાકિક અને વિશ્લેષણાત્મક ક્ષમતા</p> <p>(૨) સંખ્યાઓની શ્રેણી સ્કેલ અને તેનો ઉકેલ.</p> <p>(૩) સંબંધ વિષયક પ્રક્રિયા.</p> <p>(૪) આકૃતિઓ અને તેના પેટા વિભાગ, વેળ આકૃતિઓ</p> <p>(૫) ઘડીયાળ, કેલેજર અને ઉમર સંબંધિત પ્રક્રિયા.</p> <p>(૬) સંખ્યા વ્યવર્થા અને તેના ગાનધી.</p>	30

	<p>(૭) ફેબ્રિક સમીકરણ (એક કે બે ચલમાં)</p> <p>(૮) પ્રમાણા, ઠિક્સો અને ચલ.</p> <p>(૯) સરેરાશ ચા મદ્યક, મદ્યરથ અને બહુલક, ભારિત સરેરાશ. .</p> <p>(૧૦) ઘાત અને ઘાતાંક, વર્ગ, વર્ગમૂળ, ઘનમૂળ, ગુ.સા.અ. અને લ.સા.અ</p> <p>(૧૧) ટકા, સાટુ અને અક્ષ્યુદ્દિધ વ્યાજ, નક્ષે અને નુકશાન.</p> <p>(૧૨) સમય અને કાર્ય, સમય અને અંતર, ઝડપ અને અંતર.</p> <p>(૧૩) સરળ ભૌતિક આકૃતિઓના ક્ષેત્રફળ અને પરિમિતિ, જુથ્થો અને સપાટીનો વિરતાર (૩ સમાંતર બાજું ઘરાપતો ઘન, ઘન, સિલિન્ડર, શંકુ આકાર, ગોળાકાર).</p> <p>(૧૪) રેખા, ખૂણા અને સામાન્ય ભૌમિતિક આકૃતિઓ-સાદી કે ત્રાંશી સમાંતર રેખાઓના ગુણધર્મો, ત્રિકોણની સ્વાપેક્ષ બાજુઓના માપનના ગુણધર્મો, પાયથાગોરસનો પ્રમેય, અતુલ્ભૂજ, લંબગોળ, સમાંતર બાજુ અતુષ્કોણ, સમભૂજ અતુષ્કોણ.</p> <p>(૧૫) બીજગણિતનો પરિચય-BODMAS-કાનાભાગુપાઓ-દિચિત્ર પ્રતિકોની સરળ સમજૂતિ.</p> <p>(૧૬) માઠિતીનું અર્થધટન, માઠિતીનું વિશ્લેષણ, માઠિતીની પર્યામતા, સંભાવના.</p>
૬	<p>ગુજરાતી વ્યાકરણ (ગુજરાતી માદ્યમ-Gujarati Medium Only)</p> <p>(૧) જોડણી</p> <p>(૨) સમાનાર્થી-વિરુદ્ધાર્થી શાબ્દો</p> <p>(૩) ઝાંખ્યોગો અને કહેવતો</p> <p>(૪) સમાચસ</p> <p>(૫) સંધિ</p> <p>(૬) અલંકાર</p> <p>(૭) છંદ</p>
૧૦	<p>English Grammar (અંગ્રેઝ માદ્યમ- English Medium Only)</p> <p>(૧) Articles, Pronouns, Adjectives, Prepositions, Conjunctions and Question tag.</p> <p>(૨) Verb and Tense, Agreement between subject and verb, Gerund, Participles.</p> <p>(૩) Modal auxiliaries. Usage of can, may, could, should, etc.</p> <p>(૪) Use of some, many, any, few, a little. Since and for.</p> <p>(૫) Active and passive voice</p> <p>(૬) Degrees of adjectives.</p> <p>(૭) Common errors of usage.</p>

❖ મુદ્દા કમાંક ૮ થી ૧૦ માટેનો અન્યાન્ય ધોરણ- ૧૨ સમકાણ રહેશે.

Syllabus for preliminary test for recruitment from Direct Selection

Part-1

Medium: Gujarati and English

Total Marks: 100

Point No	Subject	Marks
1	Geography of India – Geographical, Economic, Social, Natural Resources and Population related topics – With Special reference to Gujarat	
2	Cultural Heritage of India – Literature, Arts, Religion and Architecture - With Special reference to Gujarat	
3	History of India- With Special reference to Gujarat	
4	Indian Economy and Planning	
5	Indian Politics and Constitution of India: (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 Casts, Scheduled Tribes and Backward Classes of the society (9) NITI Aayog (10) Constitutional and Statutory Bodies: Election Commission of India, Comptroller and Auditor General, Information Commission	30
6	General Science, Environment and Information & Communication Technology	10
7	Daily events of Regional, National and International Impotence including Sports	10
8	General Mental Ability Test (1) Logical Reasoning and Analytical Ability (2) Number Series, Coding-Decoding (3) Questions about relationship. (4) Shapes and their Sub-sections, Venn Diagram (5) Questions based on Clock, Calendar and Age (6) Number system and order of Magnitude (7) Linear Equations - in one or two Variables (8) Ratio, Proportion and Variation (9) Average of Mean, Median, Mode- including weighted Mean (10) Power and Exponent, Square, Square Root, Cube Root, H.C.F. & L.C.M. (11) Percentage, Simple and Compound Interest, Profit and Loss (12) Time and Work, Time and Distance, Speed and Distance (13) Area and Perimeter of Simple Geometrical Shapes, Volume and Surface Area of Sphere, Cone, Cylinder, Cubes and Cuboids (14) Lines, Angles and Common geometrical figures - properties of transverse or parallel lines, properties related to measure sides of a triangle, Pythagoras theorem, quadrilateral, rectangle, Parallelogram and rhombus. (15) Introduction to algebra-BODMAS, simplification of weird Symbols. (16) Data interpretation, Data Analysis, Data sufficiency, Probability	30

9	<p>Gujarati Grammar (ગુજરાતી માદયમ-Gujarati Medium Only)</p> <p>(૧) બેડળી (૨) સમાનાર્થી-વિકુદધાર્થી શાબ્દો (૩) ફિલેપ્રયોગો અને કહેવતો (૪) સમાર્થ (૫) ચંદ્રિકા (૬) અલંકાર (૭) છંદ</p>	10
10	<p>English Grammar (અંગ્રેજ માદયમ- English Medium Only)</p> <p>(1) Articles, Pronouns, Adjectives, Prepositions, Conjunctions and Question tag. (2) Verb and Tense, Agreement between subject and verb, Gerund, Participles. (3) Modal auxiliaries. Usage of can, may, could, should, etc. (4) Use of some, many, any, few, a little. Since and for. (5) Active and passive voice (6) Degrees of adjectives. (7) Common errors of usage.</p>	10

❖ The standard of the syllabus for point no. 8 to 10 will be equivalent to Standard 12.

Syllabus for the preliminary test for the recruitment on the post of Assistant Engineer (Civil), Class-II (GMC)

Marks – 200

Questions – 200

Medium - English

1. Building Materials:

Stone, Lime, Glass, Plastics, Steel, FRP, Ceramics, Aluminium, Fly Ash, Basic Admixtures, Timber, Bricks and Aggregates: Classification, properties and selection criteria; Cement: Types, Composition, Properties, Uses, Specifications and various Tests; Lime & Cement Mortars and Concrete: Properties and various Tests; Design of Concrete Mixes: Proportioning of aggregates and methods of mix design. Pre-cast and Pre-fabricating technology.

2. Solid Mechanics:

Elastic constants, Stress, plane stress, Strains, plane strain, Mohr's circle of stress and strain, Elastic theories of failure, Principal Stresses, Bending, Shear and Torsion.

3. Structural Analysis:

Basics of strength of materials, Types of stresses and strains, Bending moments and shear force, concept of bending and shear stresses; Analysis of determinate and indeterminate structures; Trusses, beams, plane frames; Rolling loads, Influence Lines, Unit load method & other methods; Free and Forced vibrations of single degree and multi degree freedom system; Suspended Cables; Concepts and use of Computer Aided Design.

4. Design of Steel Structures:

Principles of Limit State Methods, Design of tension and compression members, Design of beams and beam column connections, built-up sections, Girders, Industrial roofs, Principles of Ultimate load design.



5. Design of Concrete and Masonry structures:

Limit state design for bending, shear, axial compression and combined forces; Design of beams, Slabs, Lintels, Foundations, Retaining walls, Tanks, Staircases; Principles of pre-stressed concrete design including materials and methods; Earthquake resistant design of structures; Design of Masonry Structure.

6. Construction Practice, Planning and Management:

Construction - Planning, Equipment, Site investigation and Management including Estimation with latest project management tools and network analysis for different Types of works; Analysis of Rates of various types of works; Tendering Process and Contract Management, Quality Control, Productivity, Operation Cost; Land acquisition; Labour safety and welfare.

7. Building Construction

Brick and stone masonry walls, types of masonry, cavity walls, reinforced brickwork, building services, detailing of floors, roofs, ceilings, stairs, doors and windows, finishing, formwork, ground water control techniques, cofferdams, functional planning of building, orientations of buildings, low cost housings.

8. Flow of Fluids, Hydraulic Machines and Hydro Power:

(a) Fluid Mechanics, Open Channel Flow, Pipe Flow:

Fluid properties; Dimensional Analysis and Modeling; Fluid dynamics including flow kinematics and measurements; Flow net; Viscosity, Boundary layer and control, Drag, Lift, Principles in open channel flow, Flow controls. Hydraulic jump; Surges; Pipe networks.

(b) Hydraulic Machines and Hydro power:

Various pumps, Air vessels, Hydraulic turbines – types, classifications & performance parameters; Power house – classification and layout, storage, pondage, control of supply.

9. Hydrology and Water Resources Engineering:

Hydrological cycle, Ground water hydrology, Well hydrology and related data analysis; Streams and their gauging; River morphology; Flood, drought and their management; Capacity of Reservoirs.

Water Resources Engineering : Multipurpose uses of Water, River basins and their potential; Irrigation systems, water demand assessment; Resources - storages and their yields; Water logging, canal and drainage design, Gravity dams, falls, weirs, Energy dissipaters, barrage Distribution works, Cross drainage works and head-works and their design; Concepts in canal design, construction & maintenance; River training, measurement and analysis of rainfall.

10. Environmental Engineering:

a) Water Supply Engineering:

Sources, Estimation, quality standards and testing of water and their treatment; Rural, Institutional and industrial water supply; Physical, chemical and biological characteristics and sources of water, Pollutants in water and its effects, Estimation of water demand; Drinking water Standards, Water Treatment Plants, Water distribution networks.

b) Waste Water Engineering:

Planning & design of domestic waste water, sewage collection and disposal; Plumbing Systems. Components and layout of sewerage system; Planning & design of Domestic Waste-water disposal system; Sludge management including treatment, disposal and re-use of treated effluents; Industrial waste waters and Effluent Treatment Plants including institutional and industrial sewage management.

c) Solid Waste Management:



Sources & classification of solid wastes along with planning & design of its management system; Disposal system, Beneficial aspects of wastes and Utilization by Civil Engineers.

d) Air, Noise pollution and Ecology:

Concepts & general methodology.

11. Geo-technical Engineering and Foundation Engineering:

a) Geo-technical Engineering:

Soil exploration - planning & methods, Properties of soil, classification, various tests and interrelationships; Permeability & Seepage, Compressibility, consolidation and Shearing resistance, Earth pressure theories and stress distribution in soil; Properties and uses of geo-synthetics.

b) Foundation Engineering:

Types of foundations & selection criteria, bearing capacity, settlement analysis, design and testing of shallow & deep foundations; Slope stability analysis, earthen embankments, Dams and Earth retaining structures: types, analysis and design, Principles of ground modifications.

12. Surveying and Geology:

a) Surveying:

Classification of surveys, various methodologies, instruments & analysis of measurement of distances, elevation and directions; Field astronomy, Global Positioning System; Map preparation; Photogrammetry; Remote sensing concepts; Survey Layout for culverts, canals, bridges, road/railway alignment and buildings, Setting out of Curves.

b) Geology:

13. Transportation Engineering

Highways - Planning & construction methodology, Alignment and geometric design; Traffic Surveys and Controls; Principles of Flexible and Rigid pavements design.

Tunnelling - Alignment, methods of construction, disposal of muck, drainage, lighting and ventilation.

Bridges - Fundamentals of Bridge Engineering , Bridge Site Investigations and Planning, Bridge Hydrology, Standards of Loadings for Bridge Design, Different Types of Bridges, Bridge Superstructure, Bearings and Substructure Design, Design of Bridge Foundations, Bridge Approaches, River Training Work & Protection Work, Methods of Bridge Construction, Inspection, maintenance & Repair of Bridges, Testing of Bridges, Bridge Architecture.

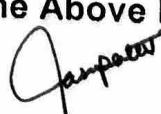
14. Civil Engineering in Gujarat- Important Buildings, Monuments and Construction- Historical as well as Modern. Important Reservoir-Its Storage, Catchment and Command Area, Technical features and important characteristics.

15. Concrete Technology

Cement, Aggregates and Water, Concrete, Concrete Mix Design and Testing of Concrete, Quality Control of Concrete: Chemical Admixture, Special Concrete and Extreme Weather concreting.

16. Road safety measures, use of plastic waste, recycled aggregates etc. in road construction.

17. Current Trends and Recent Advancements in the Above Fields.


(Praeun Patel)
DEPUTY SECRETARY
GUJARAT PUBLIC SERVICE COMMISSION