ಡಿಪ್ಲೊಮಾ ಮಟ್ಟದ ಮತ್ತು ತತ್ಸಮಾನ ವಿದ್ಯಾರ್ಹತೆ ಹಾಗೂ ಪಠ್ಯಕ್ರಮ ಒಂದೇ ಇರುವ ಹುದ್ದೆಗಳ ವಿವರ (ತಾಂತ್ರಿಕ)

ಕ್ರ. ಸಂ.	ಇಲಾಖೆಯ ಹೆಸರು	ಹುದ್ದೆಯ ಹೆಸರು	ಖಾಲಿ ಹುದ್ದೆಗಳ ವಿವರ		
			ಉಳಿಕೆ ಮೂಲ ವೃಂದ	ಕಲ್ಯಾಣ ಕರ್ನಾಟಕ ಸ್ಥಳೀಯ ವೃಂದ	ಒಟ್ಟು
1.	ನಗರ ಮತ್ತು ಗ್ರಾಮಾಂತರ ಯೋಜನಾ ಇಲಾಖೆ	ಸಹಾಯಕ ನಗರ ಯೋಜಕರು	105	14	119
2.	ಗ್ರೇಟರ್ ಬೆಂಗಳೂರು ಪ್ರಾಧಿಕಾರ	ಜೂನಿಯರ್ ಇಂಜಿನಿಯರ್(ಸಿವಿಲ್)	46	04	50
3.	ಕರ್ನಾಟಕ ಗೃಹ ಮಂಡಳಿ	ಜೂನಿಯರ್ ಇಂಜಿನಿಯರ್(ಸಿವಿಲ್)	15	05	20
4.	ಕರ್ನಾಟಕ ಗ್ರಾಮೀಣ ಮೂಲ ಸೌಕರ್ಯ ಅಭಿವೃದ್ಧಿ ನಿಯಮಿತ	ಜೂನಿಯರ್ ಇಂಜಿನಿಯರ್(ಸಿವಿಲ್)	12	03	15
5.	ಅಂತರ್ಜಲ ನಿರ್ದೇಶನಾಲಯ	ಜೂನಿಯರ್ ಇಂಜಿನಿಯರ್(ಸಿವಿಲ್)	05	-	05
6.	ಕರ್ನಾಟಕ ಕೊಳಗೇರಿ ಅಭಿವೃದ್ಧಿ ಮಂಡಳಿ	ಪ್ರಾರೂಪಕರು	02	-	02
7.	ಗಣಿ ಮತ್ತು ಭೂ ವಿಜ್ಞಾನ ಇಲಾಖೆ	ಜೂನಿಯರ್ ಇಂಜಿನಿಯರ್(ಗಣಿ ಮತ್ತು ಭೂ ವಿಜ್ಞಾನ)	-	04	04
8.	ಕೃಷಿ ಮಾರಾಟ ಇಲಾಖೆ	ಜೂನಿಯರ್ ಇಂಜಿನಿಯರ್(ಸಿವಿಲ್)	-	01	01
ಒಟ್ಟು ಹುದ್ದೆಗಳು			**185**	**31**	**216**

ಷರಾ:- ಇಲಾಖೆಗಳ ವಿವರ ಹಾಗೂ ಹುದ್ದೆಗಳ ಸಂಖ್ಯೆ ಬದಲಾವಣೆಗೆ ಒಳಪಟ್ಟಿರುತ್ತದೆ.

- ಅಧಿಸೂಚನೆಯನ್ನು ಸೆಪ್ಟಂಬರ್ ಮಾಹೆಯಲ್ಲಿ ಹೊರಡಿಸಲಾಗುವುದು ಹಾಗೂ ಪರೀಕ್ಷೆಯನ್ನು ನವೆಂಬರ್ ಮತ್ತು ಡಿಸೆಂಬರ್ ಮಾಹೆಯಲ್ಲಿ ನಡೆಸಲಾಗುವುದು
- **ಪಠ್ಯಕ್ರಮದ ವಿವರ**:
  - ಪದವಿ ಮಟ್ಟದ ಮತ್ತು ತತ್ಸಮಾನ ವಿದ್ಯಾರ್ಹತೆ ಹೊಂದಿರುವ ಹಾಗೂ ಪಿಯುಸಿ ಮಟ್ಟದ ಮತ್ತು ತತ್ಸಮಾನ ವಿದ್ಯಾರ್ಹತೆ ಹೊಂದಿರುವ ತಾಂತ್ರಿಕೇತರ ಹುದ್ದೆಗಳಿಗೆ ಕರ್ನಾಟಕ ನಾಗರಿಕ ಸೇವಾ (ನೇರ ನೇಮಕಾತಿ) (ಸಾಮಾನ್ಯ) ನಿಯಮಗಳು, 2021 ರಲ್ಲಿ ತಿಳಿಸಿರುವಂತೆ ಪತ್ರಿಕೆ-1 ಮತ್ತು ಪತ್ರಿಕೆ-2 ರ ಪಠ್ಯಕ್ರಮ ಇರುತ್ತದೆ.
  - ಡಿಪ್ಲೊಮಾ ಮಟ್ಟದ ಮತ್ತು ತತ್ಸಮಾನ ವಿದ್ಯಾರ್ಹತೆ ಹಾಗೂ ಒಂದೇ ಪಠ್ಯಕ್ರಮ ಹೊಂದಿರುವ ತಾಂತ್ರಿಕ ಹುದ್ದೆಗಳಿಗೆ ಕರ್ನಾಟಕ ನಾಗರಿಕ ಸೇವಾ (ನೇರ ನೇಮಕಾತಿ) (ಸಾಮಾನ್ಯ) ನಿಯಮಗಳು, 2021 ರಲ್ಲಿ ತಿಳಿಸಿರುವಂತೆ ಪತ್ರಿಕೆ-1 ರ ಪಠ್ಯಕ್ರಮ ಇರುತ್ತದೆ ಹಾಗೂ ಪತ್ರಿಕೆ-2 (ನಿರ್ದಿಷ್ಟ ಪತ್ರಿಕೆ) ರ ಪಠ್ಯಕ್ರಮವನ್ನು ಪ್ರತ್ಯೇಕವಾಗಿ ಪ್ರಕಟಿಸಲಾಗಿದೆ.

ಕಾರ್ಯನಿರ್ವಾಹಕ ನಿರ್ದೇಶಕರು,
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Paper-2 -Syllabus for Junior Engineer (Civil) posts

1. Materials of construction

Stones Classification of rocks, Tests on stones, quarrying of stones. Bricks Types, Indian Standard classification, manufacturing process, types and tests, water absorption, Refractory bricks. Cement Compounds, clinker Composition, types, tests setting times, strength. Timber Classification, defects, dry and wet rots, preservation, seasoning, market forms of timber Plywood. Metals mild steel, copper, aluminum alloy, steel alloy. Paints, varnish & distemper Ingredients, types

2. Surveying

Principles, Classification of surveys, prismatic compass, local attraction; triangulations and traversing Leveling Terms in leveling, Bench mark, types of leveling. Reduction of levels, L/S, C/S, Contour, characteristics of contour, computation of area, volumes, Capacity reservoir, Theodolite surveying measurement of horizontal & vertical angles, deflection angle, latitude, departure, Bowditch's & Transit rule measurements and adjustment of observations. Trigonometric leveling height & distance for different cases. Tacheometry definition, stadia, system of tacheometry. Curves types, elements of curve, designation, setting out curves, GIS, GPS global positioning system, remote sensing,

3. Engineering Mechanics and Strength of materials

Moment & Couples, resolving of forces, Centre of gravity, Moment of Inertia, radius of gyration, Parallel & Perpendicular axis theorem, Stress & strain - Types of stress, Hook's law, factor of safety, lateral & linear strain, stress strain diagram, Poisson's ratio, Bending moment & Shear force Types of supports, beam & load, Shear force & Bending Moment Calculation for cantilever, Simply supported & Over hanging beam with point load & UDL, Point of contra flexure. Simple Bending bending stress, equation, flexural rigidity, section modulus, modulus of rupture. Slope & Deflection-definition of slope, deflection & curvature, calculation of Slope & deflection for cantilever, simply supported beams with point load & UDL (moment area method). Columns & strut Definition of column & Strut, types, effective length for different end conditions, slenderness ratio, Buckling load.

4. Construction Technology

Types of foundation & suitability, SBC of soil, Technical terms in Brick & stone masonry, Types of damp proofing materials, types of Doors & windows, fixtures for doors & windows, Lintel & arches, Scaffolding, shoring & under pining, Technical terms in stair, types of stairs, Types of roof, Plastering & pointing, types of floors, Ventilation.

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5. Water supply Engineering

Ecological chain and balance, Sources of water, Intakes water requirements, Estimation of demand, per capita demand, Water quality standards, impurities, tests, purification of water, Primary and secondary treatment, sedimentation, coagulation, chlorination, Conveyance and distribution system, appurtenance, water conservation.

6. Sanitary Engineering

Definition of sewage, sewer, garbage, sullage, types of sewerage system, Characteristics of sewage, quantity of sewage, sewer appurtenance, sewage treatment & disposal, house drainage system, collection & disposal of solid waste. Sources and effects of air pollution, Noise pollution and standards

7. Hydraulics

Fundamentals properties of fluids, total pressure, centre of pressure for circular, rectangular & triangular vertical plates. Flow of fluids Types of flow, Bernoulli's equation, continuity equation. Hydraulic jump. Flow through orifice Types of orifice, Vena contracta, Hydraulic co-efficients & their relationships. Flow through Notches discharge over rectangle & triangular notches. Flow over weir Types of weir, discharge over rectangular weir, end contraction. Flow through canals Types, Chezy's & manning's formula, Most economical section. Flow through pipes - Types of Major & minor losses, water hammer, surge tanks.

8. Water Resources Engineering

Hydrology Hydrological cycle, precipitation, Evaporation and transpiration, runoff, computation of average rainfall. Irrigation Base period, Crop period, Duty, Delta & Relationship, hydrographs, types of irrigation, methods of irrigation, Reservoirs & Dams-gravity & earthen dams, spillways, gates. Distribution & cross drainage works Types of canals, Canal alignment, canal lining, aqueduct sluices. Diversion & river training works- Weirs, barrages, canal head regulator, marginal bunds, guide banks. Ground water Types of Aquifers, porosity, ground water yield, specific yield, specific retention, permeability, transmissibility.

9. Concrete Technology

Ingredients of concrete, Admixture-mineral and chemical, W/C ratio, Grade of concrete & steel, calcium silicate hydrate, Transition zone, Workability, Segregation, bleeding, Strength, Maturity concept, characteristic strength, Modulus of elasticity, Permeability, durability, Shrinkage, Creep, chloride attack, sulphate attacks, NDT, Design mix concepts, Curing. Special concrete, High strength concrete & steel for Pre stressing, Post tensioning, Pre tensioning.

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10. Design of RCC

RCC Limit state Limit state of collapse, limit state of serviceability, as per IS 456-2000 Characteristic strength of materials, partial safety factors, stress block, Neutral axis, Moment of resistance.

Analysis and design requirements for Singly reinforced, doubly reinforced sections for flexure and shear, lintels, T-Beam, one way slab, Two way slab, Continuous slab, sun shade and cantilever slab, short column for axial load, square footing, dog legged stair case spanning longitudinally.

11. Design of Steel structures

Analysis and design requirements for Bolted & welded joint, main & secondary beams, effective length & slenderness ratio for column, slab base & gusseted base plate, strut, end conditions.

12. Transportation Engineering

Roads Importance of transportation, classification of roads, geometrics, types of pavements, road drainage, traffic engineering. Railways- Permanent way, rails, sleepers, ballast, points & crossings, station & yards. Bridges- Elements of bridges, types of bridges.

13. Construction management

Construction Team, Construction stages, Bar chart, CPM, PERT, Organization in PWD, Contract, Types of Contract, Tender, EMD, SMD, measurement book, Indents, Bin cards, payment of bills, Safety in construction.

14. Estimation & costing

Units of measurements, types of estimate, specification, analysis of rates, BOQ, schedule of rates, valuation, rent fixation, depreciation, scrape value, market value, book value, earth work quantities.

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