



STAFF SELECTION COMMISSION

NOTICE



JUNIOR ENGINEERS (CIVIL, MECHANICAL, ELECTRICAL, & QUANTITY SURVEYING & CONTRACT) EXAMINATION, 2016

Date of Computer Based Written Exam: 03-12-2016 to 05-12-2016
Closing Date:- 31-10-2016

“GOVERNMENT STRIVES TO HAVE A WORKFORCE WHICH REFLECTS GENDER BALANCE AND WOMAN CANDIDATES ARE ENCOURAGED TO APPLY.”

F.No. 3/7/2016- P&P-II: Staff Selection Commission will hold on 3rd December 2016 to 05th December 2016, an open competitive Computer Based Examination for recruitment of Junior Engineers, Group ‘B’ Non-Gazetted posts in the Pay Band of Rs.9300-34800/- plus Grade Pay Rs.4200/- (pre-revised).

2. Posts and vacancies:

S.No.	Organisation	Post
1.	Central Water Commission	Junior Engineer (Civil)
2.	Central Water Commission	Junior Engineer (Mechanical)
3.	CPWD	Junior Engineer (Civil)
4.	CPWD	Junior Engineer (Electrical)
5.	Department of Post	Junior Engineer (Civil)
6.	MES	Junior Engineer(Civil)
7.	MES	Junior Engineer (Electrical and Mechanical)
8.	MES	Junior Engineer (Quantity Surveying and Contract)
9.	Farrakka Barrage (Project)	Junior Engineer (Civil)
10.	Farrakka Barrage (Project)	Junior Engineer (Mechanical/Electrical)
11.	Central Water Power Research Station.	Junior Engineer (Civil)
12.	Central Water Power Research Station.	Junior Engineer (Electrical)
13.	Dte. Of Quality Assurance(Naval)	Junior Engineer (Naval Quantity Assurance) –(Mechanical)
14.	Dte. Of Quality Assurance(Naval)	Junior Engineer (Naval Quantity Assurance)-(Electrical)

3. Reservation:

Reservation for SC/ ST/ OBC/ ExS / PH etc. categories is available as per extant Govt. Orders and as communicated by the departments reporting vacancies.

The posts have been identified suitable for the persons suffering from disabilities of forty percent (40%) and above of One Arm (OA), One Leg (OL), Hearing Handicapped (HH).

4. Nationality / citizenship:

A candidate must be either:

- (a) a citizen of India, or
- (b) a subject of Nepal, or
- (c) a subject of Bhutan, or
- (d) a Tibetan refugee who came over to India before the 1st January 1962 with the intention of permanently settling in India, or
- (e) a person of Indian origin who has migrated from Pakistan, Burma, Sri Lanka, East African countries of Kenya, Uganda, the United Republic of Tanzania (Formerly Tanganyika and Zanzibar), Zambia, Malawi, Zaire, Ethiopia and Vietnam with the intention of permanently settling in India.

Provided that a candidate belonging to categories (b), (c), (d) and (e) above shall be a person in whose favour a certificate of eligibility has been issued by the Government of India.

A candidate in whose case a certificate of eligibility is necessary may be admitted to the Examination but the offer of appointment will be given only after the necessary eligibility certificate has been issued to him by the Government of India.

4-A. Age Limit as on 1st August 2016.

S.No.	Organisation Name	Post name	Age
1.	Central Water Commission	Junior Engineer (Civil)	Upto 32 years
2.	Central Water Commission	Junior Engineer (Mech)	Upto 32 years
3.	CPWD	Junior Engineer (Civil)	Upto 32 years.
4.	CPWD	Junior Engineer (Electrical)	Upto 32 years
5.	Department of Post	Junior Engineer (Civil)	18-27 years
6.	MES	Junior Engineer (Civil)	Upto 30 years.
7.	MES	Junior Engineer (Electrical and Mechanical)	Upto 30 years.
8.	MES	Junior Engineer (Surveying and Contract)	18-27 years
9.	Farrakka Barrage (Project)	Junior Engineer (Civil)	Upto 30 years
10.	Farrakka Barrage (Project)	Junior Engineer (Electrical / Mechanical)	Upto 30 years
11.	Central Water Power Research Station	Junior Engineer (Civil)	Upto 30 years
12.	Central Water Power Research Station	Junior Engineer (Electrical)	Upto 30 years.
13.	Dte of Quality Assurance (Naval)	Junior Engineer (Naval Quality Assurance)-Mechanical)	Upto 30 years.
14.	Dte of Quality Assurance (Naval)	Junior Engineer (Naval Quality Assurance)-(Electrical)	Upto 30 years.

Candidates should note that the Date of Birth as recorded in the Matriculation / Secondary Examination Certificate or an equivalent certificate only will be accepted by the Commission for determining the age and no subsequent request for its change will be considered or granted.

Candidates are advised to opt only for such posts for which they have the qualification and are within the prescribed age limits. Permissible relaxation of upper age limit prescribed under para 4-A above and Category Codes for claiming age relaxation as on date of reckoning:-

Code	Category	Age-Relaxation Permissible beyond the Upper age limit
1	SC/ST	5 years
2	OBC	3 years
3	PH (OH/HH)	10 years
4	PH (OH/HH) + OBC	13 years
5	PH (OH/HH) + SC/ST	15 years
6	Ex-Servicemen (Unreserved / General)	03 years after deduction of the military service rendered from the actual age as on the closing date.
7	Ex-Servicemen (OBC)	06 years (3 years + 3 years) after deduction of the military service rendered from the actual age as on the closing date.
8	Ex-Servicemen (SC/ ST)	08 years (3 years + 5 years) after deduction of the military service rendered from the actual age as on the closing date.
12	Central Govt. Civilian Employees (General/Unreserved) who have rendered not less than 3 years regular and continuous service as on Closing date.	05 Years
13	Central Govt. Civilian Employees (OBC) who have rendered not less than 3 years regular and continuous service as on Closing date.	08 (5+3) years
14	Central Govt. Civilian Employees (SC/ST) who have rendered not less than 3 years regular and continuous service as on Closing date	10 (5+5) years
21	Candidates who had ordinarily been domiciled in the State of Jammu & Kashmir (Unreserved/General)	5 years
22	Candidates who had ordinarily been domiciled in the State of Jammu & Kashmir (OBC)	8 years
23	Candidates who had ordinarily been domiciled in the State of Jammu & Kashmir (SC/ST)	10 years
27	Defence Personnel disabled in operation during hostilities with any foreign country or in a disturbed area and released as a consequence thereof (Unreserved/General)	5 years
28	Defence Personnel disabled in operation	8 (5+3) years

	during hostilities with any foreign country or in a disturbed area and released as a consequence thereof (OBC)	
29	Defence Personnel disabled in operation during hostilities with any foreign country or in a disturbed area and released as a consequence thereof (SC/ST)	10 (5+5) years

4-B Ex-Servicemen who have already secured employment in civil side under Central Government on regular basis after availing of the benefits of reservation given to ex-servicemen for their re-employment are NOT eligible for fee concession. However, he/she can avail the benefit of reservation as Ex-Serviceman for subsequent employment if he/she immediately after joining civil employment, given self declaration/undertaking to the concerned employer about the date-wise details of application for various vacancies for which he/she had applied for before joining the initial civil employment as mentioned in the OM No.36034/1/2014-Estt (Res) dated 14th August 2014 issued by DOP&T.

The period of "Call up Service" of an Ex-Serviceman in the Armed Forces shall also be treated as service rendered in the Armed Forces for purpose of age relaxation, as per rules.

The post of Junior Engineer being a Group 'B' post, there is no reservation for Ex-Servicemen category. However, benefit of age-relaxation will be admissible to Ex-Servicemen candidates, as per extant Govt. Orders.

An ex-serviceman means a person:-

- (i) who has served in any rank whether as a combatant or non combatant in the Regular Army, Navy and Air Force of the Indian Union, and
 - (a) who either has been retired or relieved or discharged from such service whether at his own request or being relieved by the employer after earning his or her pension, or
 - (b) who has been relieved from such service on medical grounds attributable to military service or circumstances beyond his control and awarded medical or other disability pension; or
 - (c) who has been released from such service as a result of reduction in establishment.

or
- (ii) who has been released from such service after completing the specific period of engagement, otherwise than at his own request, or by way of dismissal, or discharge on account of misconduct or inefficiency and has been given a gratuity, and includes personnel of the Territorial Army, namely pension holders for continuous embodied service or broken spells of qualifying service.

or
- (iii) personnel of the Army Postal Service who are part of Regular Army and retired from the Army Postal Service without reversion to their parent service with pension, or are released from the Army Postal service on medical grounds attributable to or aggravated by military service or circumstance beyond their control and awarded medical or other disability pension.

or
- (iv) Personnel, who were on deputation in Army Postal Service for more than six months prior to the 14th April, 1987.

or

(v) Gallantry award winners of the Armed forces including personnel of Territorial Army.

or

(vi) Ex-recruits boarded out or relieved on medical ground and granted medical disability pension.

5. Process of certification and format of certificates:

Candidates who wish to be considered against vacancies reserved or seek age-relaxation must submit requisite certificate from the competent authority, in the prescribed format, whenever such certificates are sought by concerned Regional / Sub Regional Offices at the time of Document Verification. Otherwise, their claim for SC/ST/OBC/PH/ExS status will not be entertained and their candidature/applications will be considered under General (UR) category. The formats of the certificates are annexed. Certificates in any other format will not be accepted. **OBC certificate in the creamy layer should have been obtained within three years before the closing date for receipt of applications. The Commission has also decided to accept OBC certificate in prescribed format issued after the closing date of receipt of application but issued upto 180 days after the closing date. Accordingly the OBC certificate issued between 01-11-2013 and upto 29-04-2017 only will be accepted. In case date of issuance of OBC certificate is before 01-11-2013 or after 29-04-2017 the candidate will simply be treated as unreserved (UR) candidate.**

Candidates are warned that they may be permanently debarred from the examination conducted by the Commission in case they fraudulently claim SC/ST/OBC/ExS/PH status.

6. Essential Educational Qualifications (as on 01-08-2016):

S. No.	Post	Educational and Other Qualification
1	Junior Engineer (Civil), CPWD	Diploma in Civil Engineering from a recognized University or Institute.
2	Junior Engineer (Electrical) CPWD	Diploma in Electrical or Mechanical Engineering from a recognised University or Institute.
3	Junior Engineer (Civil), Department of Posts	Three years Diploma or equivalent in Civil Engineering from an institution recognized by the Central Government or State Government.
4	(a) Junior Engineer (Civil), MES (b) Junior Engineer (Electrical & Mechanical), MES	Degree in Civil Engineering from a recognised University OR I) Three years Diploma in Civil Engineering from a recognised Institute or University or Board; <u>and</u> (II) Two years experience in Planning, Execution and Maintenance of Civil Engineering works. Degree in Electrical or Mechanical Engineering from a recognised University; OR (I) Three years diploma in Electrical or Mechanical Engineering from a recognised Institute or University or Board; and (II) Two years experience in Planning, Execution and Maintenance of Electrical or Mechanical Engineering works.

	(c) Junior Engineer (QS&C), MES	(i) 3 years Diploma in Civil engineering from a recognised institute / University / Board or equivalent; OR (ii) Passed Intermediate examination in Building and Quantity Surveying Sub Divisional-II of the institute of Surveyors (India).
5.	Junior Engineer (Civil) in Central Water Commission	Degree or Diploma in Civil Engineering from a recognised University or Institution.
6.	Junior Engineer (Mechanical) in Central Water Commission	Degree or Diploma in Mechanical Engineering from a recognised University or Institution.
7.	Junior Engineer (Civil) in Farrakka Barrage Project	Diploma in Civil Engineering from a recognised University or Institute.
8.	Junior Engineer (Mechanical) in Farrakka Barrage Project.	Diploma in Mechanical Engineering from a recognised University or Institute.
9.	Junior Engineer (Electrical) in Farrakka Barrage Project.	Diploma in Electrical Engineering from a recognised University or Institute.
10.	Junior Engineer (Civil) in Central Water Power Research Station.	Diploma in Civil Engineering from a recognised University.
11.	Junior Engineer (Electrical) in Central Water Power Research Station	Diploma in Electrical Engineering from a recognised University.
12.	Junior Engineer (Mechanical) Dte of Quality Assurance Naval	Diploma in Mechanical Engineering from any recognised University / Institution; and Two years experience in respective fields i.e. - Either of the field quality assurance / quality control/ production/manufacturing and testing of marine engineering propulsion systems including turbines, power generation equipment, hydraulic system, as conditioning / refrigeration, pumps valves, gears and gear trains, boilers, cranes/winches/load handling devices etc. including knowledge of various standard and their interpretation.
13.	Junior Engineer (Electrical) Dte of Quality Assurance Naval	Diploma in Electrical Engineering from any recognised University/Institution; and Two years experience in respective fields i.e.- Either of the field quality assurance / quality control / production / manufacturing and testing of switch gears, cables, converters, light and light fittings, motors, generators, drives and control systems, airfield lighting equipment, Electronics / Radar / Radio / Telecommunication equipment,

		electro hydraulic system, programmable logic controller based systems, printed circuit boards / instrumentation, software development and validation, network control system etc. including knowledge of various standard and their interpretation.
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As per Ministry of Human Resource Development Notification No.44 dated 01.03.1995 published in Gazette of Indian edition dated 08.04.1995, the qualifications acquired by the individuals through open Universities / Distance Education Mode needs to be recognized by Distance Education Council, IGNOU New Delhi and wherever necessary by All India Council for Technical Education (AICTE), New Delhi.

All candidates who are called for documents verification will be required to produce the relevant Certificates in Original such as Mark sheets, Provisional Degree / Diploma Certificate, etc. as proof of having acquired the minimum educational qualification on or before 01-08-2016 failing which the candidature of such candidate will be cancelled by the Commission. The candidates who are able to prove, by documentary evidence that the result of the qualifying examination was declared on or before the cut off date and he/she has been declared passed, will also be considered to have met the required Educational Qualification.

ExS who have done various courses from Armed Forces which are certified by Competent Authority to be equivalent to Diploma in Civil/Mechanical/Electrical Engineering are eligible to appear in the Examination.

7. Mode of payment of fee payable Rs.100/- (Rupees One Hundred only):

Candidate may note that only online applications will be accepted at <http://ssconline.nic.in>.

Fee paid in respect of online applications through SBI Challan / Net banking and any credit and debit cards will be accepted.

Women candidates and candidates belonging to Scheduled Caste, Scheduled Tribes, Physically handicapped and Ex-Servicemen eligible for reservation are exempted from paying fee, as per rules / instructions of Department of Personnel and Training, Government of India.

Fee once paid will not be refunded under any circumstances.

8. Centres of Examination

A candidate must indicate clearly the centres of examination in the Application Form.

S.No.	Centre of Examination & Centre Code	Regional/Sub-Regional office
1	Dehradun-2002, Delhi-2201, Jaipur-2405,	Regional Director (NR), Staff Selection Commission, Block No. 12, CGO Complex, Lodhi Road, New Delhi-110504.

2	Hyderabad-8601, Vishakhapatnam-8007, Chennai-8201, Pondicherry-8401,	Regional Director (SR), Staff Selection Commission, EVK Sampath Building, 2 nd Floor, College Road, Chennai, Tamil Nadu- 600006.
3	Gangtok-4001, Ranchi-4205, Kolkata-4410, Bhubaneswar- 4604, Port Blair-4802,	Regional Director (ER), Staff Selection Commission, Nizam Palace, Ist M.S.O. Building (8 th Floor), 234/4 A. J. C. Bose Road, Kolkata, West Bengal – 700020
4.	Ahmedabad -7001 Mumbai-7204, Nagpur-7205, Panaji-7801,	Regional Director (WR), Staff Selection Commission, Ist Floor, South Wing, Pratishta Bhawan, 101 Maharshi Karve Road, Mumbai Maharashtra – 408020.
5.	Allahabad-3003, Lucknow-3010 Patna-3206,	Regional Director (CR), Staff Selection Commission, 21-23 Lowther Road, Allahabad, Uttar Pradesh – 211002.
6.	Itanagar- 5001, Guwahati (Dispur)-5105, Imphal-5501, Kohima-5302, Shillong-5401, Churachandpur- 5502, Agartala-5601, Aizwal- 5701,	Regional Director (NER), Staff Selection Commission, Housefed Complex, West End Block, Last Gate, Beltola Basistha Road, Dispur Guwahati, Assam-781006.
7.	Bengaluru-9001, Thiruvananthapuram-9211, Kavaratti-9401	Regional Director (KKR), Staff Selection Commission, 1 st Floor, “E” Wing, Kendriya Sadan, Koramangala, Bangalore, Karnataka- 560034.
8.	Bhopal-6001, Jagdalpur-6203, Raipur-6204,	Dy. Director (MPR), Staff Selection Commission, J-5 Anupam Nagar, Raipur Chhatisgarh-492001.
9.	Baramula-1002, Jammu-1004, Srinagar (J&K)-1007, Shimla- 1203, Chandigarh-1601,	Dy. Director (NWR), Staff Selection Commission, Block No. 3, Ground Floor, Kendriya Sadan Sector-9, Chandigarh-167017.

No request for change of centre of Examination will be entertained under any circumstances. Hence, the candidates should select the centres carefully and indicate the same correctly in their applications. The Commission considers only applications supported by documentary evidence from those serving in Armed Forces or Central Armed Police Forces for change of centre, if they are posted out due to operational reasons.

The Commission reserves the right to cancel any Centre and ask the candidates of that centre to appear from another centre. Commission also reserves the right to divert candidates of any centre to some other Centre to take the examination.

9. Scheme of Examination:-

Papers	Mode of Examination	Subject	Maximum Marks	Duration & Timings
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Examination premises. Possession of these items, whether in use or not, will be considered as “use of unfair means” in the Examination and candidature of such candidates will be cancelled forthwith. Such candidates are also liable for debarment upto a period of 3 years and/or criminal prosecution.

There will be negative marking of 0.25 marks for each wrong answer in Paper-I. Candidates are, therefore, advised to keep this in mind while answering the questions.

Commission will place the answer keys of Paper-I on its website after the examination. Objections and claims if any, received within the time limit specified while placing answer keys will be examined by the Commission with the help of experts, if necessary. Commission’s decision in this regard will be final.

10. Indicative Syllabus:-

The standard of the questions in Engineering subjects will be approximately of the level of Diploma in Engineering (Civil/Electrical/Mechanical) from a recognized Institute, Board or University recognized by All India Board of Technical Education. All the questions will be set in SI units. The details of the syllabus are given below:

Paper-I

(i) General Intelligence & Reasoning: The Syllabus for General Intelligence would include questions of both verbal and non-verbal type. The test may include questions on analogies, similarities, differences, space visualization, problem solving, analysis, judgement, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning, verbal and figure classification, arithmetical number series etc. The test will also include questions designed to test the candidate’s abilities to deal with abstract ideas and symbols and their relationships, arithmetical computations and other analytical functions.

(ii) General Awareness: Questions will be aimed at testing the candidate’s general awareness of the environment around him/her and its application to society. Questions will also be designed to test knowledge of current events and of such matters of everyday observations and experience in their scientific aspect as may be expected of any educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining to History, Culture, Geography, Economic Scene, General Polity and Scientific Research, etc. These questions will be such that they do not require a special study of any discipline.

(iii) General Engineering (Civil and Structural), (Electrical & Mechanical):

Part-A

Civil Engineering

Building Materials, Estimating, Costing and Valuation, Surveying, Soil Mechanics, Hydraulics, Irrigation Engineering, Transportation Engineering, Environmental Engineering.

Structural Engineering: Theory of Structures, Concrete Technology, RCC Design, Steel Design.

Part-B

Electrical Engineering

Basic concepts, Circuit law, Magnetic Circuit, AC Fundamentals, Measurement and Measuring instruments, Electrical Machines, Fractional Kilowatt Motors and single phase induction Motors, Synchronous Machines, Generation, Transmission and Distribution, Estimation and Costing, Utilization and Electrical Energy, Basic Electronics.

Part-C

Mechanical Engineering – Theory of Machines and Machine Design, Engineering Mechanics and Strength of Materials,

Properties of Pure Substances, 1st Law of Thermodynamics, 2nd Law of Thermodynamics, Air standard Cycles for IC Engines, IC Engine Performance, IC Engines Combustion, IC Engine Cooling & Lubrication, Rankine cycle of System, Boilers, Classification, Specification, Fitting & Accessories, Air Compressors & their cycles, Refrigeration cycles, Principle of Refrigeration Plant, Nozzles & Steam Turbines.

Properties & Classification of Fluids, Fluid Statics, Measurement of Fluid Pressure, Fluid kinematics, Dynamics of Ideal fluids, Measurement of Flow rate, basic principles, Hydraulic Turbines, Centrifugal Pumps, Classification of steels.

Paper II (Part-A) : Civil & Structural Engineering

Civil Engineering

Building Materials : Physical and Chemical properties, classification, standard tests, uses and manufacture/quarrying of materials e.g. building stones, silicate based materials, cement (Portland), asbestos products, timber and wood based products, laminates, bituminous materials, paints, varnishes.

Estimating, Costing and Valuation: estimate, glossary of technical terms, analysis of rates, methods and unit of measurement, Items of work – earthwork, Brick work (Modular & Traditional bricks), RCC work, Shuttering, Timber work, Painting, Flooring, Plastering. Boundary wall, Brick building, Water Tank, Septic tank, Bar bending schedule, Centre line method, Mid-section formula, Trapezoidal formula, Simpson's rule. Cost estimate of Septic tank, flexible pavements, Tube well, isolates and combined footings, Steel Truss, Piles and pile-caps. Valuation – Value and cost, scrap value, salvage value, assessed value, sinking fund, depreciation and obsolescence, methods of valuation.

Surveying : Principles of surveying, measurement of distance, chain surveying, working of prismatic compass, compass traversing, bearings, local attraction, plane table surveying, theodolite traversing, adjustment of theodolite, Levelling, Definition of terms used in levelling, contouring, curvature and refraction corrections, temporary and permanent adjustments of dumpy level, methods of contouring, uses of contour map, tachometric survey, curve setting, earth work calculation, advanced surveying equipment.

Soil Mechanics : Origin of soil, phase diagram, Definitions-void ratio, porosity, degree of saturation, water content, specific gravity of soil grains, unit weights, density index and interrelationship of different parameters, Grain size distribution curves and their uses. Index properties of soils, Atterberg's limits, ISI soil classification and plasticity chart. Permeability of soil, coefficient of permeability, determination of coefficient of

permeability, Unconfined and confined aquifers, effective stress, quick sand, consolidation of soils, Principles of consolidation, degree of consolidation, pre-consolidation pressure, normally consolidated soil, e-log p curve, computation of ultimate settlement. Shear strength of soils, direct shear test, Vane shear test, Triaxial test. Soil compaction, Laboratory compaction test, Maximum dry density and optimum moisture content, earth pressure theories, active and passive earth pressures, Bearing capacity of soils, plate load test, standard penetration test.

Hydraulics : Fluid properties, hydrostatics, measurements of flow, Bernoulli's theorem and its application, flow through pipes, flow in open channels, weirs, flumes, spillways, pumps and turbines.

Irrigation Engineering: Definition, necessity, benefits, 2II effects of irrigation, types and methods of irrigation, Hydrology – Measurement of rainfall, run off coefficient, rain gauge, losses from precipitation – evaporation, infiltration, etc. Water requirement of crops, duty, delta and base period, Kharif and Rabi Crops, Command area, Time factor, Crop ratio, Overlap allowance, Irrigation efficiencies. Different type of canals, types of canal irrigation, loss of water in canals. Canal lining – types and advantages. Shallow and deep to wells, yield from a well. Weir and barrage, Failure of weirs and permeable foundation, Slit and Scour, Kennedy's theory of critical velocity. Lacey's theory of uniform flow. Definition of flood, causes and effects, methods of flood control, water logging, preventive measure. Land reclamation, Characteristics of affecting fertility of soils, purposes, methods, description of land and reclamation processes. Major irrigation projects in India.

Transportation Engineering: Highway Engineering – cross sectional elements, geometric design, types of pavements, pavement materials – aggregates and bitumen, different tests, Design of flexible and rigid pavements – Water Bound Macadam (WBM) and Wet Mix Macadam (WMM), Gravel Road, Bituminous construction, Rigid pavement joint, pavement maintenance, Highway drainage, Railway Engineering- Components of permanent way – sleepers, ballast, fixtures and fastening, track geometry, points and crossings, track junction, stations and yards. Traffic Engineering – Different traffic survey, speed-flow-density and their interrelationships, intersections and interchanges, traffic signals, traffic operation, traffic signs and markings, road safety.

Environmental Engineering: Quality of water, source of water supply, purification of water, distribution of water, need of sanitation, sewerage systems, circular sewer, oval sewer, sewer appurtenances, sewage treatments. Surface water drainage. Solid waste management – types, effects, engineered management system. Air pollution – pollutants, causes, effects, control. Noise pollution – cause, health effects, control.

Structural Engineering

Theory of structures: Elasticity constants, types of beams – determinate and indeterminate, bending moment and shear force diagrams of simply supported, cantilever and over hanging beams. Moment of area and moment of inertia for rectangular & circular sections, bending moment and shear stress for tee, channel and compound sections, chimneys, dams and retaining walls, eccentric loads, slope deflection of simply supported and cantilever beams, critical load and columns, Torsion of circular section.

Concrete Technology: Properties, Advantages and uses of concrete, cement aggregates, importance of water quality, water cement ratio, workability, mix design, storage, batching, mixing, placement, compaction, finishing and curing of concrete, quality control

of concrete, hot weather and cold weather concreting, repair and maintenance of concrete structures.

RCC Design: RCC beams-flexural strength, shear strength, bond strength, design of singly reinforced and double reinforced beams, cantilever beams. T-beams, lintels. One way and two way slabs, isolated footings. Reinforced brick works, columns, staircases, retaining wall, water tanks (RCC design questions may be based on both Limit State and Working Stress methods).

Steel Design: Steel design and construction of steel columns, beams roof trusses plate girders.

Part-B (Electrical Engineering):

Basic concepts : Concepts of resistance, inductance, capacitance, and various factors affecting them. Concepts of current, voltage, power, energy and their units.

Circuit law : Kirchoff's law, Simple Circuit solution using network theorems.

Magnetic Circuit : Concepts of flux, mmf, reluctance, Different kinds of magnetic materials, Magnetic calculations for conductors of different configuration e.g. straight, circular, solenoidal, etc. Electromagnetic induction, self and mutual induction.

AC Fundamentals: Instantaneous, peak, R.M.S. and average values of alternating waves, Representation of sinusoidal wave form, simple series and parallel AC Circuits consisting of R.L. and C, Resonance, Tank Circuit. Poly Phase system – star and delta connection, 3 phase power, DC and sinusoidal response of R-L and R-C circuit.

Measurement and measuring instruments: Measurement of power (1 phase and 3 phase, both active and re-active) and energy, 2 wattmeter method of 3 phase power measurement. Measurement of frequency and phase angle. Ammeter and voltmeter (both moving coil and moving iron type), extension of range wattmeter, Multimeters, Megger, Energy meter AC Bridges. Use of CRO, Signal Generator, CT, PT and their uses. Earth Fault detection.

Electrical Machines : (a) D.C. Machine – Construction, Basic Principles of D.C. motors and generators, their characteristics, speed control and starting of D.C. Motors. Method of braking motor, Losses and efficiency of D.C. Machines. (b) 1 phase and 3 phase transformers – Construction, Principles of operation, equivalent circuit, voltage regulation, O.C. and S.C. Tests, Losses and efficiency. Effect of voltage, frequency and wave form on losses. Parallel operation of 1 phase /3 phase transformers. Auto transformers. (c) 3 phase induction motors, rotating magnetic field, principle of operation, equivalent circuit, torque-speed characteristics, starting and speed control of 3 phase induction motors. Methods of braking, effect of voltage and frequency variation on torque speed characteristics.

Fractional Kilowatt Motors and Single Phase Induction Motors: Characteristics and applications.

Synchronous Machines - Generation of 3-phase e.m.f. armature reaction, voltage regulation, parallel operation of two alternators, synchronizing, control of active and reactive power. Starting and applications of synchronous motors.

Generation, Transmission and Distribution – Different types of power stations, Load factor, diversity factor, demand factor, cost of generation, inter-connection of power stations. Power factor improvement, various types of tariffs, types of faults, short circuit current for symmetrical faults. Switchgears – rating of circuit breakers, Principles of arc extinction by oil and air, H.R.C. Fuses, Protection against earth leakage / over current, etc. Buchholtz relay, Merz-Price system of protection of generators & transformers, protection

of feeders and bus bars. Lightning arresters, various transmission and distribution system, comparison of conductor materials, efficiency of different system. Cable – Different type of cables, cable rating and derating factor.

Estimation and costing : Estimation of lighting scheme, electric installation of machines and relevant IE rules. Earthing practices and IE Rules.

Utilization of Electrical Energy : Illumination, Electric heating, Electric welding, Electroplating, Electric drives and motors.

Basic Electronics : Working of various electronic devices e.g. P N Junction diodes, Transistors (NPN and PNP type), BJT and JFET. Simple circuits using these devices.

Part- C (Mechanical Engineering):

Theory of Machines and Machine Design

Concept of simple machine, Four bar linkage and link motion, Flywheels and fluctuation of energy, Power transmission by belts – V-belts and Flat belts, Clutches – Plate and Conical clutch, Gears – Type of gears, gear profile and gear ratio calculation, Governors – Principles and classification, Riveted joint, Cams, Bearings, Friction in collars and pivots.

Engineering Mechanics and Strength of Materials

Equilibrium of Forces, Law of motion, Friction, Concepts of stress and strain, Elastic limit and elastic constants, Bending moments and shear force diagram, Stress in composite bars, Torsion of circular shafts, Buckling of columns – Euler's and Rankin's theories, Thin walled pressure vessels.

Thermal Engineering

Properties of Pure Substances : p-v & P-T diagrams of pure substance like H₂O, Introduction of steam table with respect to steam generation process; definition of saturation, wet & superheated status. Definition of dryness fraction of steam, degree of superheat of steam. H-s chart of steam (Mollier's Chart).

1st Law of Thermodynamics : Definition of stored energy & internal energy, 1st Law of Thermodynamics of cyclic process, Non Flow Energy Equation, Flow Energy & Definition of Enthalpy, Conditions for Steady State Steady Flow; Steady State Steady Flow Energy Equation.

2nd Law of Thermodynamics : Definition of Sink, Source Reservoir of Heat, Heat Engine, Heat Pump & Refrigerator; Thermal Efficiency of Heat Engines & co-efficient of performance of Refrigerators, Kelvin – Planck & Clausius Statements of 2nd Law of Thermodynamics, Absolute or Thermodynamic Scale of temperature, Clausius Integral, Entropy, Entropy change calculation of ideal gas processes. Carnot Cycle & Carnot Efficiency, PMM-2; definition & its impossibility.

Air standard Cycles for IC engines : Otto cycle; plot on P-V, T-S Planes; Thermal Efficiency, Diesel Cycle; Plot on P-V, T-S planes; Thermal efficiency.

IC Engine Performance, IC Engine Combustion, IC Engine Cooling & Lubrication.

Rankine cycle of steam : Simple Rankine cycle plot on P-V, T-S, h-s planes, Rankine cycle efficiency with & without pump work.

Boilers; Classification; Specification; Fittings & Accessories : Fire Tube & Water Tube Boilers.

Air Compressors & their cycles; Refrigeration cycles; Principle of a Refrigeration Plant; Nozzles & Steam Turbines Fluid Mechanics & Machinery.

Properties & Classification of Fluid : ideal & real fluids, Newton's law of viscosity, Newtonian and Non-Newtonian fluids, compressible and incompressible fluids.

Fluid Statics: Pressure at a point.

Measurement of Fluid Pressure: Manometers, U-tube, Inclined tube.

Fluid Kinematics: Stream line, laminar & turbulent flow, external & internal flow, continuity equation.

Dynamics of ideal fluids : Bernoulli's equation, Total head; Velocity head; Pressure head; Application of Bernoulli's equation.

Measurement of Flow rate Basic Principles: Venturimeter, Pilot tube, Orifice meter.

Hydraulic Turbines: Classifications, Principles.

Centrifugal Pumps: Classifications, Principles, Performance.

Production Engineering

Classification of Steels : mild steel & alloy steel, Heat treatment of steel, Welding – Arc Welding, Gas Welding, Resistance Welding, Special Welding Techniques i.e. TIG, MIG, etc. (Brazing & Soldering), Welding Defects & Testing; NDT, Foundry & Casting – methods, defects, different casting processes, Forging, Extrusion, etc, Metal cutting principles, cutting tools, Basic Principles of machining with (i) Lathe (ii) Milling (iii) Drilling (iv) Shaping (v) Grinding, Machines, tools & manufacturing processes.

11. General instructions to be complied by the candidates in the examination:

Candidates must write the papers/indicate the answers in their own hand.

Candidates are not permitted to use electronic gadgets except as specified in the Notice. They should not, therefore, bring the same inside the Examination Premises / Venue for papers for which their use is not permitted.

If any candidate is found to possess mobile phones or any other means of wireless communication in the working or switched off mode, his/her candidature shall be cancelled forthwith and he/she will be debarred from the Commission's examination for a period of three years.

Wherever applicable, the candidates must indicate /write the answer either in Hindi or in English. If answers are indicated/written partly in Hindi and partly in English and vice versa, the Answer script will not be evaluated.

In the question papers, wherever necessary, the Metric systems of weights and measures only will be used.

12. Mode of Selection:

Candidates will be shortlisted and recommended for appointment by the Commission on the basis of their total marks in the Paper – I & II and preference for the posts.

Provided that SC, ST, OBC and PH (PWD) candidates, who are selected on their own merit without relaxed standards, along with candidates belonging to other communities, will not be adjusted against the reserved share of vacancies. Such SC, ST, OBC and PH (PWD) candidates will be accommodated against the general/unreserved vacancies as per their position in the overall Merit List. The reserved vacancies will be filled up separately from amongst the eligible SCs, STs, OBCs and PH(PWD) candidates which will thus comprise of SC, ST, OBC and PH(PWD) candidates who are lower in merit than the last general candidate on merit list of unreserved category but otherwise found suitable for

appointment even by relaxed standard. A Physically Handicapped candidate who qualifies on the basis of relaxed standards viz., age limit, experience or qualifications, permitted number of chances in written examination, extended zone of consideration, etc. will be counted against reserved vacancies and not against general vacancies subject to fitness of such candidate for selection. Such candidates may also be recommended at the relaxed standards to the extent the number of vacancies reserved for them, to make up for the deficiency in the reserved quota, irrespective of their rank in the order of merit.

Success in the examination confers no right of appointment unless government is satisfied after such enquiry as may be considered necessary that the candidate is suitable in all respects of appointment to the service/post.

The candidates applying for the examination should ensure that they fulfil all the eligibility conditions for admission to the examination. Their admission at all the stages of examination will be purely provisional, subject to their satisfying the prescribed eligibility conditions. If, on verification, at any time before or after the written examination, it is found that they do not fulfil any of the eligibility conditions, their candidature for the examination will be cancelled by the Commission.

Candidates, who are appointed on the basis of this examination, shall be on probation for a period of two years and during the period of probation, the candidates would be required to undergo such training or pass such examinations as prescribed by the Controlling Authority. On successful completion of the period of probation, the candidates shall, if considered fit for permanent appointment, be confirmed to their post by the Controlling Authority.

13. Resolution of tie cases:

In cases where more than one candidate secure the equal aggregates marks, tie will be resolved by applying the following methods one after another:-

- (i) Total marks in Paper-II.
- (ii) Total marks in Paper-I.
- (iii) Date of birth, with older candidates placed higher.
- (iii) Alphabetical order in the first names of the candidates appeared.

14. In accordance with the directions issued by DOPT vide its O.M. No. 39020/1/2016-Estt.(B) dated 21.06.2016 for increasing access of the unemployed candidates to job opportunities in other sectors (private and public) it has been decided that in addition of the rank and marks of the candidates during the declaration of the final result, the details of the candidate i.e. names of parents/husband, educational qualification, date of birth, category, sex (male/female), total marks in qualifying examination, complete address including e-mail address will also be made public. However, the candidates will have the option of opting out from disclosure of this information publically at the time of filling up the application.

15. How to apply:

All applications must be submitted online only. Detailed instructions as in Annexure-IIA and Annexure-IIB may be referred to.

16. Preferences for Posts & Departments / Offices

A candidate is required to indicate at Sl. No. 16 in his/her Application Form, name of post for which he/she would like to be considered for final allotment in order of preferences in case he/she is recommended by the Staff Selection Commission. Allocation of Posts to the selected candidates will be made strictly keeping in view their position in the merit list and

the order of preference, subject to number of vacancies available in that post. The posts for the purpose are grouped and codes as below:-

Code.	Post
A	JE(Civil) Central Water Commission
B	JE(Mechanical) Central Water Commission
C	JE(Civil), CPWD
D	JE (Electrical), CPWD
E	JE (Civil), Department of Post
F	JE (Civil), Military Engineering Service
G	JE (Electrical and Mechanical), Military Engineering Service
H	JE (Quality Surveying and Contract), Military Engineering Service.
I	JE (Civil) Farrakka Barrage Project
J	JE (Electrical / Mechanical), Farrakka Barrage Project
K	Junior Engineer (Civil) in Central Water Power Research Station.
L	Junior Engineer (Electrical) in Central Water Power Research Station
M	Junior Engineer (Mechanical) (Naval Quality Assurance)in DGQA, Ministry of Defence
N	Junior Engineer (Electrical) (Naval Quality Assurance) in DGQA, Ministry of Defence

Candidates may note that options once exercised are final and no change will be allowed under any circumstance.

17. Admission to the Examination:-

All candidates who apply in response to this advertisement by the CLOSING DATE will be assigned Roll numbers. These will be communicated to them or placed on the website of the concerned Regional Office at least two weeks before the date of the examination. A candidate must write his/her Roll number along with his/her name, date of birth and name of the examination while addressing any communication to the concerned regional office of the Commission. Communication from the candidate not furnishing these particulars shall not be entertained.

Admission Certificates (ACs) for the Examination indicating the time table and also venues of examination for each candidate will be issued to all applicants about two weeks before the date of examination. Candidates are required to download the admission certificate from the website of the regional/sub regional office concerned. It will not be sent by post. If any candidate does not receive admission certificate for the examination one week before the date of examination, he/she must immediately contact the concerned regional/sub regional office(s) of the commission with details such as registration id, transaction id of SBI, copy of challan etc. for obtaining the admission certificates. Failure to do so will deprive him/her of any claim for consideration.

The photographs used by the candidates must be a recent, relaxed face, colour picture and the picture should be in colour, against a light-coloured, preferably white, background. If flash is used then ensure that there is no red-eye and, in case of glasses, your eyes should be visible. The face should not cover less than 80 % of the entire photo. Photograph should be of 8 bit JPG format and its size should be between 4kb to 12 kb with resolution of 100x120 (pixels).

It is compulsory to carry at least one original Photo ID such as Voter's ID, Aadhaar Card,

Driving License, ID cards issued by Government or other Offices where the candidates may be working. Candidates without such ID cards will not be allowed entry into the examination halls/venues.

Candidates should bring 3 passport size photographs for affixing it in the Commission's copy of Admission Certificate in the presence of Invigilator, if required. Candidates not carrying photographs will not be allowed to appear in the examination. Candidates are advised to keep 10 copies of the same photograph, which was uploaded/affixed in the application form, with them till the completion of entire examination process.

18. Commission's decision final:

The decision of the Commission in all matters relating to eligibility, acceptance or rejection of the applications, penalty for false information, mode of selection, conduct of examination(s), allotment of examination centres, selection and allotment of posts/organizations to selected candidates will be final and binding on the candidates and no enquiry/correspondence will be entertained in this regard.

19. Action against candidates found guilty of misconduct:

Candidates are warned that they should not furnish any particulars that are false or suppress any material information while filling in the application form. Candidates are also warned that they should in no case attempt to alter or otherwise tamper with any entry in a document or the attested certified copy submitted by them nor should they submit a tampered/fabricated document.

Without prejudice to criminal action/debarment from Commission's examination wherever necessary, candidature will be summarily cancelled at any stage of the recruitment in respect of candidates found have indulged in any of the following:-

- (i) In possession of mobile phone & accessories and other electronic gadgets within the premises of the examination centres, whether in use or in switched off mode and on person or otherwise.
- (ii) Using unfair means in the examination hall.
- (iii) Obtaining support for his/her candidature by any means.
- (iv) Impersonate / Procuring impersonation by any person.
- (v) Submitting fabricated documents or documents which have been tampered with.
- (vi) Making statements which are incorrect or false or suppressing material information.
- (vii) Resorting to any other irregular or improper means in connection with his/her candidature for the examination.
- (viii) Misbehaving in any other manner in the examination hall with the Supervisor, Invigilator or Commission's representatives.
- (ix) Taking away the Answer sheet with him/her from the examination hall, or passing it on to unauthorised persons during the conduct of the examination.
- (x) Intimidating or causing bodily harm to the staff employed by the Commission for the conduct of examination.
- (xi) Not fulfilling the eligibility condition mentioned in the Notice.
- (xii) Any other ground which the Commission considers to be sufficient cause.

20. Court Jurisdiction

Any dispute in regard to this recruitment will be subject to courts/tribunals having jurisdiction over the Headquarter of concerned Regional/Sub-Regional Office of the SSC where the candidate has submitted his/her application.

21. For detailed instructions relating to Application form, instructions for filling up the application form and for on-line payment/submission of application, candidates are advised to refer Annexure-I, II A and II B.

22. Important Instructions to Candidates:

(i) The Examination will comprise of a Computer Based Examination for Paper-I and written examination for Paper-II.

(ii) The Commission will not undertake detailed scrutiny of applications for the eligibility and other aspects at the time of written examination and, therefore, the application is accepted only provisionally. The candidates are advised to go through the requirements of educational qualification, age etc. and satisfy themselves that they are eligible before applying. Copies of supporting documents will be sought at the time of document verifications. When scrutiny is undertaken, if any claim made in the application is not found substantiated, the candidature will be cancelled and the Commission's decision shall be final.

(iii) Candidates seeking reservation benefits available for SC/ST/OBC/PH/EXS must ensure that they are entitled to such reservation as per eligibility prescribed in the Notice. They should also be in possession of the certificates in the prescribed format in support of their claim.

(iv) Candidates with physical disability of 40% and more only would be considered as PHYSICALLY HANDICAPPED (PH) and entitled to reservation for PH. The Posts are not identified suitable for VH persons.

(v) Central Government civilian employees claiming age relaxation should produce a certificate in the prescribed format from their office at the time of document verification in respect of the length of continuous service which should be for not less than three years during the period immediately preceding the closing date for receipt of application. They should remain Central Government civilian employees till the time of appointment in the event of their selection.

(vi) FEE: Rupees one hundred ONLY (Rs. 100/-)

Women candidates and candidates belonging to Scheduled Caste, Scheduled Tribe, Physically Handicapped, and Ex-Servicemen (eligible for reservation) are exempted from paying application fee as per extant Government Orders.

(vii) CLOSING DATE: 31.10.2016 (5.00 PM).

(viii) Only one online application is allowed to be submitted by a candidate for Junior Engineer (Civil, Mechanical & Electrical & Quantity Surveying & Contract) Examination – 2016. Therefore, the candidates are advised to exercise due diligence at the time of filling their application forms. At the time of appearing in examination the candidates will be required to submit an undertaking that he / she has submitted only one application.

(ix) Mobiles and other electronic gadgets are banned within the premises of the examination centres possession of such equipment whether in use or in switch off mode, during the examination will be considered as use of unfair means. Candidature of such candidates will be cancelled. They will be liable for further action including initiation of criminal proceedings and debarment from commission's examination upto 3 (three) years, as may be decided by the commission.

(x) Only online applications will be entertained for this examination. The facility of on-line application (including payment of fees through debit card) will be available from 01-10-2016 to 31-10-2016 (5.00 pm). However candidates who wish to make the payment through challan of SBI may be allowed to make the payment within the working hours of bank upto 03-11-2016 provided the challan has been generated by them before 5.00 PM of 31-10-2016. Candidates should retain the

Registration ID assigned to them online and details of payment of fee for further correspondence with the Commission. They should not submit print out of their application to the Commission.

(xi) Candidates should bring 3 passport size colour photographs. Candidates not carrying photographs may not be allowed to appear in the examination.

(xii) In case the scanned photograph(s) appearing in the Commission's copy of Admission Certificate and or on Attendance Sheet is not clear invigilators are required to verify the identity of the Candidate with reference to the photo ID Proof and get colour photographs pasted on the Commission's copy of Admission Certificate and or on Attendance Sheet. Accordingly, candidates should bring passport size colour photographs for affixing it in the Commission's copy of Admission Certificate in the presence of Invigilator. Candidates not carrying photographs will not be allowed to appear in the examination.

(xii) All the posts carry All India Service Liability (AISL) i.e. the candidate, on selection, may be asked to serve anywhere in the country.

(xiii) No admission certificates for aforesaid examination will be issued by post. Candidates are required to download admission certificate for the examination from the website of concerned Regional/Sub-Regional Offices.

(xiii) Candidates are advised to give their Aadhaar Number in the application form, though it is not mandatory for early redressal of grievance if any.

Under Secretary (P&P-II)

BROCHURE

INSTRUCTIONS FOR FILLING UP THE APPLICATION

I. The Commission uses standard application form for all its examinations. Therefore, in your own interest please read the instructions given in the Notice of Examination and also given below carefully before filling up the application form. .

II. Instructions have been given for most items in the application itself which should be gone through carefully before filling up the boxes. For items for which instructions are not available, further instructions given below may be gone through carefully.

III. Please go through the instructions given below for filling up each item numbered in the application form:-

Column 1 and 2: Name of the Examination Centre and 2. Centre Codes Refer to para8 of the Notice of the Examination.

Column 12 & 12.1: Code for seeking age relaxation.

Refer to para 4-A of the Notice of the Examination.

Column13: Subjects for general engineering- choose your subject carefully. It cannot be changed later on.

Column 14: Candidates should indicate whether they belong to one of the minority communities notified by Government namely Muslims, Christians, Sikhs, Buddhists, Zoroastrians (Parsis) or Jains.

Column 16 Preference for Posts: You are advised to opt for such posts/Departments (Refer Para 15) for which you have the requisite qualification. You are also advised to be careful in exercising your preference as in the event getting selected you will be considered for the post and Department in order of your merit and option for each post. Option once exercised will be final and no changes/additions will be allowed under any circumstances.

Column 19: Educational Qualification and Subject Code: See Annexure – VIII
Use ‘Others’ if any particular Educational Qualification or Subject is not assigned a code.

Column 19.1: Please see Para-14 of the Notice.

Column 21: Address for communication

Write your complete communication address including your Name in English in capital letters. Do not forget to write 6 digits PIN code in the boxes. All the correspondence will be made to this address. E-mail ids/mobile nos are used for communicating with the candidates in emergencies. It is in the interest of the candidates to furnish these details.

Column 22: Permanent Address: Write your complete permanent address including your Name in English capital letters. Do not forget to write 6 digits PIN in the boxes.

Column 23: Photograph: The digital size of the file of the photograph must be more than 4kb and less than 12 kb with resolution of 100 pixel width and 120 pixel height.

Column 24: Signature of Candidate: The Signature must be uploaded in JPG format. The digital size of the signature file must be more than 11kb and less than 12 kb with resolution of 40 pixel width by 60 pixel height.

Application with illegible/blurred Signature will be rejected summarily.

NOTE: Request for change/correction in any particulars in the Application Form, once submitted will not be entertained under any circumstances.

Procedure for Online Submission of Application

On-line application will be available as below:-

Part-I Registration:	Up to 5.00 PM on 28.10.2016
Part-II Registration:	Up to 5.00 PM on 31.10.2016

2. The online submission of the application may be made at website **<http://ssconline.nic.in>** candidate should read the instructions in this Notice carefully before making any entry or selecting options. Candidate should supply all the required details while filling up the online form. Mandatory fields are marked with * (asterisk) sign.

The filling of online application contains two parts:

Part I Registration

Part II Registration

3. In Part I registration, candidate will have to fill basic information. On submission of details, candidate shall be prompted to check the details and make any correction in the application.

4. Candidate should press “I agree” button after declaration once after he/she finds that information supplied by him/her is in order and no correction is required. Thereafter no correction/modification etc. shall be allowed.

5. Then a page with Registration No. shall be generated. Note down registration number or take out the print out of the page. The application procedure is incomplete without part II registration. Part II registration requires filling of payment details, uploading of photograph and scanned signature. Candidates may note that the Registration number given by the Commission and Transaction ID of the Bank should be properly entered in the relevant space, failing which it will not be possible to link the payment with Part I registration. On-line application will be complete only if scanned signature and photo are uploaded as per instructions.

6. Those who want to pay online through SBI net banking/debit card/credit cards, can go directly to part II registration after completion of part I. Candidate will have to supply registration number and date of birth to continue to Part II registration.

7. To pay fee in cash, candidate should take print-out of challan generated online after completion of part I registration. Deposit the requisite fee in pay branch of State Bank of India and then continue with the Part II registration.

8. Those who are exempted from payment of fee can skip steps 6 to 8.

9. Then upload a recently taken scanned photograph in 8 – bit JPG format. The digital size of the file must be less than 12 kb and greater than 4 kb and of resolution 100 pixel widths by 120 pixels height.

10. Then upload your scanned signature in 8 – bit JPG format. The digital size of the file must be less than 12 kb and greater than 1 kb and of resolution 140 pixel width by 60 pixels height. As per specifically mentioned in para 16 of the notice of the examination.

11. Candidates are advised to go through the instructions carefully before filling up the application form.

12. Request for change/correction in any particular in the Application Form shall not be entertained under any circumstances. The Staff Selection Commission will not be responsible for any consequence arising out of non acceptance of any correction/addition/deletion in any particular filled in application form whatever the reasons may be.

**FORM OF CERTIFICATE TO BE SUBMITTED BY CENTRAL GOVERNMENT
CIVILIAN EMPLOYEES SEEKING AGE-RELAXATION**

(To be filled by the Head of the Office or Department in which the candidate is working).
(Please see Para 4(B) of the Notice)

It is certified that *Shri/Smt./Km. _____ is a Central Government Civilian employee holding the post of _____ in the pay scale of Rs. _____ with 3 years regular service in the grade.

There is no objection to his appearing for the Junior Engineers (Civil, Electrical etc.) Examination 2016, and document verification for the said examination.

Signature _____
Name _____

Office seal

Place:

Date :

(*Please delete the words which are not applicable.)

Form of Certificate for serving Defence Personnel

I hereby certify that, according to the information available with me (No.)

_____ (Rank) _____

(Name)_____ is due to complete the specified term of his
engagement with the Armed Forces on the (Date)_____.

(Signature of Commanding Officer)

Office Seal:

Place:

Date:

FORMAT FOR SC/ST CERTIFICATE

A candidate who claims to belong to one of the Scheduled Caste or the Scheduled Tribes should submit in support of his claim an attested/certified copy of a certificate in the form given below, from the District Officer or the sub-Divisional Officer or any other officer as indicated below of the District in which his parents (or surviving parent) ordinarily reside who has been designated by the State Government concerned as competent to issue such a certificate. If both his parents are dead, the officer signing the certificate should be of the district in which the candidate himself ordinarily resides otherwise than for the purpose of his own education. Wherever photograph is an integral part of the certificate, the Commission would accept only attested photocopies of such certificates and not any other attested or true copy.

(The format of the certificate to be produced by Scheduled Castes and Scheduled Tribes candidates applying for appointment to posts under Government of India)

This is to certify that Shri/Shrimati/Kumari*
_____ son/daughter of
_____ of village/town/*in District/ Division*
_____ of the State/Union Territory*
_____ belongs to the
Caste/Tribe_____ which is recognized as a Scheduled
Castes/Scheduled Tribes* under:-

The Constitution (Scheduled Castes) order, 1950 _____

The Constitution (Scheduled Tribes) order, 1950 _____

The Constitution (Scheduled Castes) Union Territories order, 1951 * _____

The Constitution (Scheduled Tribes) Union Territories Order, 1951* _____

As amended by the Scheduled Castes and Scheduled Tribes Lists(Modification) order, 1956, the Bombay Reorganization Act, 1960 & the Punjab Reorganization Act, 1966, the State of Himachal Pradesh Act 1970, the North-Eastern Area(Reorganization) Act, 1971 and the Scheduled Castes and Scheduled Tribes Order(Amendment) Act, 1976.

The Constitution (Jammu & Kashmir) Scheduled Castes Order, 1956 _____

The Constitution (Andaman and Nicobar Islands) Scheduled Tribes Order, 1959 as amended by the Scheduled Castes and Scheduled Tribes order (Amendment Act), 1976*.

The Constitution (Dadra and Nagar Haveli) Scheduled Castes order 1962.

The Constitution (Dadra and Nagar Haveli) Scheduled Tribes Order 1962@.

The Constitution (Pondicherry) Scheduled Castes Order 1964@

The Constitution (Scheduled Tribes) (Uttar Pradesh) Order, 1967 @

The Constitution (Goa, Daman & Diu) Scheduled Castes Order, 1968@

The Constitution (Goa, Daman & Diu) Scheduled Tribes Order 1968 @

The Constitution (Nagaland) Scheduled Tribes Order, 1970 @

The Constitution (Sikkim) Scheduled Castes Order 1978@

The Constitution (Sikkim) Scheduled Tribes Order 1978@

The Constitution (Jammu & Kashmir) Scheduled Tribes Order 1989@

The Constitution (SC) orders (Amendment) Act, 1990@

The Constitution (ST) orders (Amendment) Ordinance 1991 @

The Constitution (ST) orders (Second Amendment) Act, 991@
The Constitution (ST) orders (Amendment) Ordinance 1996

%2. Applicable in the case of Scheduled Castes, Scheduled Tribes persons who have migrated from one State/Union Territory Administration.

This certificate is issued on the basis of the Scheduled Castes/ Scheduled tribes certificate issued to Shri/Shrimati _____ Father/mother _____ of Shri/Srimati/Kumari* _____ of village/town* _____ in District/Division* _____ of the State/ Union Territory* _____ who belong to the _____ Caste/Tribe which is recognized as a Scheduled Caste/Scheduled Tribe in the State /Union Territory* issued by the _____ dated _____.

%3. Shri/Shrimati/Kumari and /or * his/ her family ordinarily reside(s) in village/ town* _____ of _____ District/Division* _____ of the State/ Union Territory of _____

Signature _____ **
Designation _____
(with seal of office)
Place _____
Date _____

* Please delete the words which are not applicable
@ Please quote specific presidential order
% Delete the paragraph which is not applicable.

NOTE: The term “ordinarily reside(s)” used here will have the same meaning as in section 20 of the Representation of the People Act, 1950.

** List of authorities empowered to issue Caste/Tribe Certificates:

- (i) District Magistrate/ Additional District Magistrate/ Collector/ Deputy Commissioner/ Additional Deputy Commissioner/ Dy.Collector/ Ist Class Stipendiary Magistrate/Sub-Divisional Magistrate/Extra-Assistant Commissioner/Taluka Magistrate/Executive Magistrate.
- (ii) Chief Presidency Magistrate/Additional Chief Presidency Magistrate/Presidency Magistrate.
- (iii) Revenue Officers not below the rank of Tehsildar.
- (iv) Sub-Divisional Officers of the area where the candidate and/or his family normally resides.

NOTE: ST candidates belonging to Tamil Nadu state should submit caste certificate ONLY FROM THE REVENUE DIVISIONAL OFFICER.

ANNEXURE-VI

(FORMAT OF CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES APPLYING FOR APPOINTMENT TO POSTS UNDER THE GOVERNMENT OF INDIA)

This is to certify that Shri/Smt/Kumari _____son/
daughter of _____ of village

_____ District/Division _____ in the
State _____ belongs to the _____
Community which is recognized as a backward class under the Government of India,
Ministry of Social Justice and Employment's Resolution
No. _____ dated _____*

Shri/Smt/Kumari _____ and/or his/her family ordinarily
reside(s) in the _____ District/Division of the
_____ State/Union Territory. This is also to certify that he/she does not
belong to the persons/sections(creamy layer) mentioned in Column 3 of the Scheduled to
the Department of Personnel and Training Government of India OM No.36012/22/93-
Estt(SCT) dated 08-09-1993.**

District Magistrate _____

Deputy Commissioner etc _____

Dated _____

Seal _____

- The authority issuing the certificate may have to mention the details of Resolution of Government of India in which the caste of the candidate's is mentioned as OBC.
- ** As amended from time to time.

Note : The term "Ordinarily used here will have the same meaning as in Section 20 of the Representation of the People Act 1950.

Note: The term "Ordinarily used here will have the same meaning as in Section 20 of the Representation of the People Act 1950.

DISABILITY CERTIFICATE
(IN CASE OF AMPUTATION OR COMPLETE PERMANENT PARALYSIS OF
LIMBS AND IN CASES OF BLINDNESS)
(See rule 4)

(NAME AND ADDRESS OF THE MEDICAL AUTHORITY ISSUING THE
CERTIFICATE)

Recent PP size Attested
Photograph (showing
face only) of the person
with disability

Certificate No.

Date:

This is to certify that I have carefully examined
Shri/Smt/Kum _____ Son/wife/daughter of _____ Shri
_____ Date of Birth _____ Age
_____ years, male/Female _____ Registration No. _____
permanent resident of Home No. _____ Ward/Village/Street _____ Post
Office _____ District _____ State _____.

Whose photograph is affixed above, and am satisfied that:

(A) he/she is a case of:

- locomotor disability
- blindness

(Please tick as applicable)

(B) the diagnosis in his/her case _____

(A) He/She has _____% (in figure) _____
percent (in words) permanent physical impairment/blindness in relation to
his/her _____ (part of body) as per guidelines (to be specified).

2. The applicant has submitted the following document as proof of residence:-

Nature of Document	Date of Issue	Details of authority issuing certificate.

(Signature and Seal of Authorised Signatory of
notified Medical Authority)

Signature/Thumb
impression of the person in
whose favour disability
certificate is issued.

DISABILITY CERTIFICATE
(In Case of Multiple disabilities)

(NAME AND ADDRESS OF THE MEDICAL AUTHORITY ISSUING THE CERTIFICATE)

(See rule 4)

Recent PP size Attested
Photograph (showing
face only) of the person
with disability

Certificate No.

Date:

This is to certify that I have carefully examined
Shri/Smt/Kum_____Son/wife/daughter of_____Date of Birth _____
Age___ years, male/female_____Registration No._____ permanent resident
of Home No._____Ward/Village/Street_____Post Office_____
District_____State_____whose photograph is affixed above, and are satisfied that :

(A) He/She is a Case of **Multiple Disability**. His/her extent of permanent physical impairment/disability has been evaluated as per guidelines(to be specified) for the disabilities ticked below, and shown against the relevant disability in the table below:

S.N	Disability	Affected part of the body	Diagnosis	Permanent physical impairment/mental disabilities(in %)
1.	Locomotor disability	@		
2	Low vision	#		
3.	Blindness	Both Eyes		
4.	Hearing impairment	\$		
5.	Mental retardation	X		
6.	Mental-illness	X		

(B) In the light of the above, his/her over all permanent physical impairment as per guidelines (to be specified) is as follows:-

In figure _____ percent. In words _____ percent.

2. This condition is progressive/non progressive/likely to improve/not likely to improve.

3. Reassessment of disability is:

(i) not necessary

Or

(ii) _____ is recommended/after _____ years _____ months, and therefore this certificate shall be valid till _____

(DD)

(MM)

(YY)

@ e.g. Left/Right/both arms/Legs

e.g. Single eye/both eyes

\$ e.g. Left/Right/both ears.

4. The applicant has submitted the following document as proof of residence.

Nature of Document	Date of issue	Details of authority issuing certificate

Signature and seal of the Medical Authority

--	--	--

Name and seal of Member

Name and seal of Member

Name and seal of the Chairperson

Signature/Thumb impression of the person in whose favour disability certificate is issued.
--

Annexure-VII (FORM-IV)

DISABILITY CERTIFICATE

(In case other than those mentioned in Forms II and III)

(NAME AND ADDRESS OF THE MEDICAL AUTHORITY ISSUING THE CERTIFICATE)

(See rule 4)

**Recent PP size Attested
Photograph (showing
face only) of the person
with disability**

Certificate No. _____

Date: _____

This is to certify that I have carefully examined
Shri/Smt/Kum_____son/wife/daughter-----of-----
-----Shri-----Date of Birth_____ Age
_____ years, male/Female_____(DD/MM/YY)
Registration No._____ permanent resident of House
No._____Ward/Village/Street_____Post Office_____
District_____State_____Whose photograph is affixed above,
and satisfied that he/She is a Case of _____**disability**. His/her extent of
percentage physical impairment/disability has been evaluated as per guidelines (to be
specified) for the disabilities (to be specified) and is shown against the relevant disability
in the table below:-

S.No	Disability	Affected part of the body	Diagnosis	Permanent physical impairment/mental disabilities (in %)
1.	Locomotor disability	@		
2	Low vision	#		
3.	Blindness	Both Eyes		
4.	Hearing impairment	\$		
5.	Mental retardation	X		
6.	Mental-illness	X		

(Please strike out the disabilities which are not applicable)

(C) In the light of the above, his/her over all permanent physical impairment as per guidelines (to be specified) is as follows:-

In figure _____ percent.

In words: _____ percent.

2. This condition is progressive/non progressive/likely to improve/not likely to improve.

3. Reassessment of disability is:

(i) not necessary

Or

(ii) _____ is recommended/after _____ years _____
months, and therefore this certificate shall be valid till _____

(DD)

(MM)

(YY)

@ e.g. Left/Right/both arms/Legs

e.g. Single eye/both eyes

\$ e.g. Left/Right/both ears.

4. The applicant has submitted the following document as proof of residence.

Nature of Document	Date of issue	Details of authority issuing certificate

Signature and seal of the Medical Authority

--	--	--

Name and seal of Member

Name and seal of Member

Name and seal of the Chairperson

Signature / Thumb impression of the person in whose favour disability certificate is issued.
--

Educational Qualification Code

Educational Qualification	Code
Diploma	04
BE	13
B.Tech.	14
AMIE (Part A & Part B)	15
B.Sc. (Engg.)	16
Graduation Certificate issued by Defence (Indian Army, Air Force, Navy)	19
PG Diploma	24
MA	25
M.Com.	26
M. Sc.	27
M.Ed.	28
LLM	29
ME	30
M. Tech.	31
M. Sc. (Engg.)	32
MCA	33
MBA	34
Others	35
Intermediate Examination in Buildings and Quantity Surveying Sub-Div.II of the Institute of Surveyors(India)	36
Direct Final Examination in Buildings and Quantity Surveying Sub.Div.II of the Institute of Surveyors (India)	37

Subject Code for Educational Qualification

Subject of Educational Qualification	Code
Civil Engineering	16
Electrical Engineering	17
Mechanical Engineering	18
Electronics Engineering	19
Electronics & Power Engineering	20
Electronics & Communication Engineering	21
Electrical and Instrumentation Engineering	22
Agriculture Engineering	23
Computer Science	24
Computer Application	25
Information Technology	26
Others	48
Electrical & Electronics Engineering	49
Electrical/Power Engineering	50
Civil & Structural Engineering	51
Civil and Rural Engineering.	52
Mechanical Engineering with specialization in Production Engineering	53
Mechanical Engineering with specialization in Power Plant Engineering.	54
Mechanical Engineering with specialization in Tool Tech Engineering.	55
Civil Engineering with specialization in Architecture & Town Planning.	56
Civil Engineering with specialization in Public Health Engineering.	57
Civil Engineering (N.C)	58
Civil Engineering (Water & Power Resources)	59
Civil Engineering (Water Resources)	60
Civil Engineering (Construction)	61
Civil Engineering (Environmental Pollution & Control)	62
Mechanical Engineering (Production)	63
Mechanical Engineering (Maintenance)	64
Mechanical Engineering (Automobile)	65
Post Graduation in Engineering	66
Building & Quantity Surveying	67

List of Equivalent Qualifications-

S.No.	Subject (Degree/ Diploma)
1	AMIE (Section A&B) in Civil/Electrical/Mechanical Engg. of Instt. of Engineers (India)
2	Diploma in Electrical & Electronics Engineering
3	B.E. (Electrical/Power)
4	Diploma in Civil & Structural Engineering
5	Degree/Diploma in Civil and Rural Engineering.
6	B.Sc (Civil Engineering)
7	Diploma in Mechanical Engineering with specialization in Production Engineering.
8	Diploma in Mechanical Engineering with specialization in Power Plant Engineering.
9	Diploma in Mechanical Engineering with specialization in Tool Tech Engineering.
10	Diploma in Civil Engineering with specialization in Architecture & Town Planning.
11	Diploma in Civil Engineering with specialization in Public Health Engineering.
12	Diploma in Civil Engineering (N.C)
13	Diploma in Civil Engineering (Water & Power Resources)
14	Diploma in Civil Engineering (Water Resources)
15	Diploma in Civil Engineering (Construction)
16	Diploma in Civil Engineering (Environmental Pollution & Control)
17	Diploma in Mechanical Engineering (Production)
18	Diploma in Mechanical Engineering (Maintenance)
19	Diploma in Mechanical Engineering (Automobile)