Part—II : Personality test carrying a maximum of 100 marks O the such of the candidates who quality on the basis of written examination.

2. The following will be the subjects for the written examination :

Subject	Duration	Maximum marks
SECTION--I		
1. General ability test (Part A—General English) (Part B –General knowledge)	2 Hours	100
Note : Equal number allotted to each part of this paper.	2 Hours	200
2. Electrical/Mechanical/Electronics/Tele-Communication/Computor Engineering.		
	Total :	300

3. In personality test, special attention will be paid to assessing the candidate's capacity for leadership, initiative and intellectual curiosity, tect and other social qualities, mental and physical energy and integrity of character.

4. Conventional papers must be answered in **English**. All question papers will be set in English only.

5. Candidates must write the papers in their own hand. In no circumstances, will they be allowed the help of a scribe to write the answers for them.

6. Standard of the questions of General English will be that Senior Secondary (10+2) standard whereas that of conventional papers in various subjects would be that of conventional papers in various subjects would be that of Diploma level in relevant Engineering disciplines. There shall be no practical examination in any of the subjects.

7. The Commission have descretion to fix qualifying marks in any or all the subjects of the examination.

APPENDIX

Syllabus

1. **General ability Test :**

Part (A) : **General English**—The question paper in General English will be designed to test the candidate's understanding of English and workmanlike use of words—Level-Senior Secondary (10+2).

Part (B) : **General knowledge**—The paper in General studies will include knowlegde of current events and of such matters as of everybody observation and experience in their scientific aspects. The paper will also include questions on History of India and Geography.

2. **Conventional paper in relevant Engineering Subjects :**

ELECTRONICS AND COMMUNICATION ENGINEERING

PART—I

1. Electrical Material

Conducting Material : Atomic structure, properties, composition and application of conductor, semiconductor and insulator.

Magnetic Material : Type and uses, B H Curve, hysteries loop, Ferrite coues.

Insulating Material : Electrical, thermal and mechanical properties of various insulators, air, transformer oil, SF6, PVC, bitumens, quartz etc.

Electrical Components : Different types of resistors, capacitor choke and reactors, electromagnetic and electrostatic shielding.

2. Fundamental of Electronics and Measurements :

Electronics components : Types, colour codes, ratings of resistors, inductor and capacitors. Introduction to semi conductor diodes and transistors.

Electronic devices : Introduction to rectifiers, voltage regulators, amplifiers, oscillators.

Binary number system : Logic gate, truth table.

Instruments : Systems of units of measurements, standards, working principle of Ammeter and voltmeters, ohmmeters, Use of multimeter and CRO.

3. Digital Electronics :

Binary number codes logic gates, simplification of logic gates concepts of error correction, working of display devices, Fundamentals of TTL logic counters, registers, shift registers.

Study of logic families, A to D and D to A converters. Arithmatic circuits, ICL7106/7107, ALU and its operations, Binary multiplications. Introduction of Computer, Organisation of Computers, Microprocessors Architecture, peripherals.

4. Fundamentals of Networks, Filters and Transmission Lines :

Network Theorems : Superposition, Thevenin's Nortons Maximum power transfer.

Networks : One part and two part, balanced and unbalanced active and passive T-pie, Lattice, ladder.

Concepts and significance of characteristic impedence, loss, propagation constant, phase shift constant. Star delta transformation, equivalent T and pi networks, characteristics impendence of T and pi networks.

Attenuator : Symmetrical and other types.

Filter : Brief idea of their use and types and characteristics simple design problem.

Transmission lines : Types, induction to characteristics and application.

PART—II

1. **Industrial Electronics :**

Power Diodes Transistors, Thyristor principle and various characteristics, Power conversion, Electronic relay and timer circuits, Electronic motor control. Servomechanism. Transducer, signal processing, Electronic instrumentation, Data recorders, Microprocessor applications in industry.

2. **Trouble shooting of Electronic Systems :**

Electronic components and systems-Symbols, indentification of terminals, ratings and limitations, Types of troubles cause and effects of troubles.

Circuit Assembly : Type of printed circuit Boards, precautions in handling disctete and I.Cs.

Technical Manuals : Understanding technical and operating manuals different diagrams and applications.

Measuring and test equipments : Multimeters, other meters for current, voltage, frequency, radio and microwave frequency measurements.

Testing and Alignment : Of rectifiers audio, video, DC and radio amplifiers.

Trouble shooting procedure for receivers : Radio and Video. Reliability and safty : condition affecting reliability and serviceability of electronic components and equipments, Electrical safety.

3. **Audio Systems :**

Review black and white TV, Colour TV : Relative sensitivity of eye to different colours. NTSC SECAM and PAL, their advantages and disadvantages. Delta gun and PIL type of colour picture tubes. Sub carrier frequency. Synchronous quadratic modulation and representation of colour by a vector. Block diagram of PAL TV.

Audio System : Acoustics, loudness, pitch and quality of the sound wave, recording and reproduction of sound wave spectra, tape recorder, recorder player, PA system.

4. **Communication Engineering :**

Analog signals—types and representation, Amplitude modulation, Frequency modulation and phase modulation.

Typical digital communication system design, sampling theorem. Time multiplexing of signals, A/D conservation and quantization noise. Delta modulation time Division multiplexing of digital signals. Error detection correction or partial response coding. Basic on Binary communication by on-off keying frequency shift keying.

Introduction to modulation techniques for digital communication.