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 :**

DIPLOMA ELECTRICAL ENGINEERING

PART : I

1. Electrical Material

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

Magnetic Materials : Type and uses, B H Curve, hystersis loop, Ferrite cores.

Insulating Material : Electrical, thermal and mechnical 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. Electrical Circuits :

Electromagnetism : Laws and rules, Single phase and 3 phase circuits, phase algebra, Q-factor, resonance, Balanced and unbalanced polyphase circuits, Mesh current and node voltage analysis, Thevenin, Star-delta transformation, Network theorems.

Electromagnetic Circuits, Amperes law, induced emf self inductance, mutual inductance.

3. Electrical Measurement :

Principles of measurement classification accuracy and sensitivity damping and control forces, shunt and multipler, losses, measurement of resistance, DC Potentiometer, AC Potentiometer, AC Bridge, multimeter, PF meters, frequency meters, synchroscope, basllistic galvanometer and flux meter.

4. Electrical Machines :

Electrical machine classification, Generalised treatment of electrical machines.
Transformer : Induced emf equivalent circuits , regulation, different efficiencies.

Auto and instrument transformers, paralleling, phase transformer.

DC Machines : Construction, emf torque excitation, motor performance, speed power size consideration speed control, efficiency.

PART—II

1. Generation, Transmission and Distribution :

Generation : Layout, site, auxilliaries of conventional power plants. Conventional power plants, ratings of prime movers and alternators.

Transmission : Voltage levels, mechanical consideration of tower, sag, line conductors, electrical line parameters of short lines, voltage regulation corona.

Distribution : DC and AC system, voltage levels type of distribution feeders and distributors voltage drop and effects, power factor improvement plant, distribution substation, planning of residential and industrial systems.

2. Electrical Machines II :

Three phase Induction Machines : Rotating field, torque characteristics, starting, circle diagram, equivalent circuits, Induction generator.

Three phase synchronous machines, generation, voltage regulation, parallel operation synchronous motor, starting and V-curves.

Single phase motors : Relevant field theories types, starting characteristics.

3. **Instrumentation :**

Accuracy, precision types : Classification and probability of errors, Gaussion error curve– sensitivity resolution and stability.

Mathematical model for instrumentation, calibration transducers.

Measurement of temperature, flow, pressure, vibratic and strain, Nucleonic measurement.

Fundamentals of RF telemetry, basic telemetry system components, methods of coding. modulation.

Bio-Electronics : Equipment and principles.

4. **Power Electronics :**

Power diodes and Darlington pair.

Thyristor : Principle, thyristor family, triggering, communication and characteristics of SCR, firing circuits applications.

Selenium rectifiers, uncontrolled and controlled rectification.

Electronic spped control of D.C. shut motor.

Time delay relay A.C. operated photo-tube relay, electronic timers and switches applications. Inverters cycloconverters, choppers and their applications.

5. **Rural Electrification :**

Rural electrification in India, regulation, transmission and distribution of electricity in farms, installation of motors, safety rules etc. 3-phase energy meter and lightening systems, SWER systems,