SYLLABUS FOR DEPARTMENTAL EXAMINATION IN ENGINEERING
(ELECTRICAL) FOR AE/SDO AND ABOVE
(PAPER-I)

1. Salient feature for construction of Diesel Generation Plant, Hydro-Electric Generation Plant, Thermal Generation Plant including survey, design, project report etc.


3. Operation and Maintenance of Power Station (Diesel, Hydro-Electric and Thermal Generation etc.)


5. Survey, Design and Construction of Transformation Sub-Station including related equipments and protection.


7. Testing, Commissioning, Operation, Maintenance and Repair of Transformation Sub-Station including all related equipments like Transformers, Circuit Breakers, CT, PT Cables Protection system, control and relay panel etc.

8. Testing, initial changing (Commissioning) operation, maintenance and repair of Control Battery banks and Battery Charger, DCOB etc.

9. T&D loss, voltage regulation etc.

10. Survey, Design and Construction of LT Distribution lines and Sub-Station with their associated equipments including RE Works.

11. Testing, Commissioning, Operation, Maintenance and Repair of LT Distribution Lines and Sub-Stations with their associated equipments.

12. Earthing-method of earth resistivity measurement and testing.

SYLLABUS FOR DEPARTMENTAL EXAMINATION IN ENGINEERING (ELECTRICAL) FOR AE/SDO AND ABOVE

PAPER-II (ENGINEERING) (WITH BOOKS)

1. Indian Electricity Rules, 1956.
4. Terms and condition of Supply of Electrical Energy (Mizo).
5. Relevant ISI Specification of Electrical equipments/instrument commonly applied to power supply system in Mizoram.
6. Land Acquisition Act, 1894.
7. Worksman Compensation.
SYLLABUS FOR DEPARTMENTAL EXAMINATION IN ENGINEERING PAPER
FOR AE/SDO (CIVIL)

(PAPER-I)

1. Geo-technical Engineering:
   Type of Soil, Classification of soil, Darcey’s Law, permissibility, Terzaghi’s theory of
   one dimensional consolidation, compaction of soil fined compaction. Earth pressure at
   rest, active and passive pressure at rest, active and passive pressure, Rankine’s theory.
   Immediate consolidation and secondary settlement, stability of slope.

2. Structural Engineering:
   Design of reinforced concrete structure-working stress and limit stress method based on
   IS Code, design of RCC cantilever and counterfort retaining wall. Design of stell
   structures, factor of safety and loan factor, tension and compression member, mearns
   and plate.

3. Quality Control:
   Quality of materials, test, test checking, knowledge of TRC specification.


5. Statutory Clearances mandatory of Hydel Projects, Environment Impact Assessment
   (EIA) and Environment Impact Management (EIM) reports.
SYLLABUS FOR DEPARTMENTAL EXAMINATION IN ENGINEERING PAPER
FOR AE/SDO (CIVIL)
(PAPER-II)

1. **Hydrology**:
   Date collection, water availability, assessment and stream gauging, preparation analysis, design flood estimation.

2. **Field Investigation**:
   (a) Silt collection
   (b) Topographical survey for run-of-the-river and storage schemes.
   (c) Geological survey
   (d) Construction materials survey

3. **Assessment of Power Potential and Optimization or installed capacity**:
   (a) Power Potential
   (b) Determination of net head
   (c) Assessment of power potential for run of the river and storage schemes.
   (d) Assessment of power potential with scanty data.
   (e) Optimization studies for determination of installed capacity.
   (f) Energy generation and sale.

4. **Design of Civil works**:
   Design of (for Small Hydel Schemes) –
   (a) Diversion structures
      1) Trench weir and raised type weir
      2) Gravity Dam
      3) Earthen Dam
      4) Rockfill Dam
   (b) Power channel/water conductor system
   (c) Desilting Tank
   (d) Forebay Structure
   (e) Penstock
   (f) Power House
   (g) Tail race

5. **Electro-Mechanical Equipments**:
   (a) General knowledge on type of turbines, ranges, selection of type of turbine.
   (b) General knowledge on hydro-mechanical equipments for run-of-the-river Small Hydel Projects.

SYLLABUS FOR DEPARTMENTAL EXAMINATION
IN ACCOUNTS FOR AE/SDO AND ABOVE (CIVIL / ELECTRICALS)

PAPER-I
(WITH BOOKS)

1. C.P.W.D Accounts Code
3. C.C.S (Conduct) Rules, 1964
4. C.C.A. Rules, 1965
5. Indian Contract Act, Sales of Goods 1894
6. Central Treasury Rules
7. Temporary Service Rules, 1964
Full Mark : 100  
Pass Mark : 40  
Time : 3 hrs  

SYLLABUS FOR DEPARTMENTAL EXAMINATION  
IN ACCOUNTS FOR AE/SDO AND ABOVE (CIVIL & ELECTRICALS)  

PAPER-II  
(WITHOUT BOOKS)  

1. Writing and Maintenance of Cash Book  
2. Writing and Maintenance of Contractors Ledger  
3. Materials at Site Account, Stock Returns, Register of Works, Preparations of Contractors Bill.  
4. Electricity Revenue Collection Accounts  
5. Writing of Materials Indent  
6. Maintenance of Muster Roll  
7. Imprest Account  
8. Schedule of Tariff  
9. Various Forms generally used in Power & Electricity Department  
10. Generation Data, Sales and Revenue Data  
11. Preparation of Tender / Quotation and Comparative Statement  
12. Dismantle Materials Accounts of Government Statements  
13. Measurement Books
SYLLABUS FOR DEPARTMENTAL EXAMINATION IN ENGINEERING
(ELECTRICAL) FOR JEs
(WITHOUT BOOKS)

1. Survey and alignment of 132kV and 33kV lines, etc. 11kV and LT Lines.

2. Preparation of estimates for construction of 132kV, 33kV, 11kV and LT Lines including distributions of Sub-Stations.


5. Operation and Maintenance of Hydel Power Station.

6. Survey and construction of Transmission lines.


8. Testing, Commissioning, Operation and repair of Control Battery Banks and Battery Charger.


10. Electrical measurement and measuring instruments.

11. Testing and calibration of energy meter at meter testing bench and rough testing at site by bulb method (with to associated calculation from meter constant.

12. Terms and conditions of supply of electrical energy (Mizoram).


14. T&D loss, voltage regulation etc.

15. Knowledge of REC specification.
SYLLABUS FOR DEPARTMENTAL EXAMINATION
IN ENGINEERING PAPER FOR JE (CIVIL)
(WITHOUT BOOKS)

1. Description, Care and use of Survey Instruments, Preparation of Plan, Elevation, Sectional drawings and reading & writing of design and architectural drawings.

2. Construction materials commonly used, their characteristics quality and properties, bricks, stone masonry, coarse and fine aggregate, re-inforcement steel, cement, timber etc. and common test for quality test control.


4. Basic theory and properties of RCC curtailment of steel re-inforcement, bond length, stress-compressive, tensile, sheer, neutral axis, stress strain diagram.


7. Stone masonry works, construction, procedures for retaining wall, size of stones etc.

8. Identification of site for Small Hydel Project, Selection of site for stream gauging, Measurement of water discharge using (1) V-notch (2) Rectangular notch (3) Current matter and (4) Floating method.

9. Power potential calculation and general knowledge gross head, net head, design head, rated head, head losses.


11. General Knowledge on live storage, dead storage, firm power, secondary power, load factor, installed capacity, peak load, average load, dependability.

12. Standard specifications for various items of work.
SYLLABUS FOR DEPARTMENTAL EXAMINATION
IN ACCOUNTS FOR JE (CIVIL / ELECTRICALS)

PAPER-I
(WITHOUT BOOKS)

1. Maintenance of Permanent Imprest and Temporary Advance
2. Maintenance of Materials Site Accounts
3. Knowledge of Maintaining Muster Roll
5. Knowledge of Maintaining of Vehicle Accounts
6. Transfer of Materials with adjustment by drawing T.E.O
7. Survey of unserviceable materials / plants.
8. Measurement Books GRS etc.
9. F.R. & S.R. (Leave Rules, dismissal/removal from services suspension, retirement, joining time and disciplinary proceedings)
10. Tariff.
SYLLABUS FOR DEPARTMENTAL EXAMINATION
IN ACCOUNTS FOR JE (CIVIL / ELECTRICALS)

PAPER-II
(WITH BOOKS)

1. Central Public Works Account Code
2. Central Public Works Department Code
4. Central Treasury Rules
   (Rules 147 to 194, 388 to 398 and 540 to 552)
5. C.C.S. (Conduct) Rules, 1964
7. Temporary Service Rules, 1964