

# ASSAM PUBLIC SERVICE COMMISSION

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## **ASSISTANT ENGINEER (ELECTRICAL)**

### **SYLLABUS** **(Degree Standard)**

Syllabus for Screening Test for Recruitment to the post of *Assistant Engineer (Electrical)* under Irrigation Department of Govt. of Assam. The Educational Qualification is Degree Standard.

#### **General Studies:**

**Full Marks** : 100 Marks

Multiple Choice Objective Type Questions.

**Time** : 2:00 hours

- (i) Current Events of National & International Importance.
- (ii) History of India & History of Assam.
- (iii) Physical & Political Geography.
- (iv) Indian Economy, Indian National Movement.
- (v) Mental Ability
- (vi) Role and Impact of Science and Technology in India.
- (vii) Indian Polity, Political System in India.
- (viii) Indian Culture & Literature.

#### **Electrical Engineering:**

**Full Marks** : 100 Marks

Multiple Choice Objective Type Questions.

**Time** : 2:00 hours

Primary and Secondary cell, Dry-accumulators, Solar Cells, Steady state analysis of D.C and A.C Network, Network Theorems, Network functions, Laplace techniques, transient response, frequency response, three-phase network, inductively couple circuits.

Mathematical modeling of dynamic linear systems, transfer functions, block diagrams, stability of control systems.

Electrostatic and magnetostatic field analysis, Maxwell's equations, Wave equations and electromagnetic waves.

Basic methods of measurements, standard error analysis, indicating instruments, cathoderay oscilloscope, measurement of voltage, current, power resistance, inductance, capacitance, frequency, time and flux, electronic motors.

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Vacuum based and Semiconductor devices and analysis of electronic circuits, single and multistage audio and radio, small signal and large signal amplifiers, oscillators and feedback amplifiers, waveshaping circuits and time based generators, multivibrators and digital circuits, modulation and demodulation circuits. Transmission line at audio, radio and U.H frequencies, Wire and Radio Communication.

Generation of e.m.f and torque in rotation machine, motor and generator characteristics os d.c. synchronous and induction machines, equivalent circuits, commutation starters, phaser diagram, losses, regulation, power transformers.

Modeling of transmission lines, steady stae and transient stability, surge phenomena and insulation coordination, protective devices and schemes for power system equipment.

Conversion of a.c to d.c and d.c to a.c, controlled and uncontrolled power, sped control techniques for drives.

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