ASSISTANT ENGINEER (MECHANICAL)

SYLLABUS
(Degree Standard)

Syllabus for Screening Test for Recruitment to the post of Assistant Engineer (Mechanical) under Public Health Engineering (PHE) Department of Govt. of Assam. The Educational Qualification is Degree Standard.

**General Studies:**

Multiple Choice Objective Type Questions

(i) Current Events of National & International importance.
(ii) History of India & History of Assam.
(iii) World Geography including India & Assam.
(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.

**Full Marks** : 100 Marks
**Time** : 2-00 hours

**Mechanical Engineering:**

Multiple Choice Objective Type Questions

**Full Marks** : 100 Marks
**Time** : 2-00 hours

**Statics**

: Simple application of equilibrium equations.

**Dynamics**

: Simple applications of equations of motion, simple harmonic motion, work energy, power.

**Theory of Machines**

: Simple examples of links and mechanism, Classification of gears, standard gear tooth profiles wheel types of governors, static(s) and dynamic balancing, Simple examples of vibration of bars, Whirling of shafts.

**Mechanics of Solids**

: Stress, strain, Hook’s Law, elastic modulii, bending moments and shearing force diagrams for beams, Simple bending and torsion of beams, Spring, Thinwalled cylinders, Mechanical properties and material testing.

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<table>
<thead>
<tr>
<th>Science</th>
<th>Manufacturing</th>
<th>Production Management(s)</th>
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</thead>
<tbody>
<tr>
<td>Thermodynamics</td>
<td>Fluid Mechanics</td>
<td>Heat Transfer</td>
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<tr>
<td>Hydrostatics, Continuity equation, Bemoullis theorem, Flow through pipes, Discharge measurement, Laminar and Turbulent flow, Concept of boundary layer.</td>
<td>One dimensional steady, state conduction through walls and cylinders, Fins, Concepts of thermal boundary layer, Heat transfer coefficient, Combined heat transfer, Coefficient, Heat exchangers.</td>
<td>Compression and spark ignition engineers, Compressors, Fans and blowers, Hydraulic pumps and turbines, Thermal turbo machines, Boilers, Flow of steam through nozzles, Layout of power plants.</td>
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<tr>
<td>Environmental Control</td>
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<td>Refrigeration cycles, refrigeration equipment, its operation and maintenance, Important refrigerants, Psychometrics comfort, Cooling and dehumidification.</td>
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