SYLLABUS FOR GENERAL POSTS – ENGINEERING ASSISTANT (GRADE-II)

<table>
<thead>
<tr>
<th>Written examination (Objective Type)</th>
<th>No. of Questions</th>
<th>Duration (minutes)</th>
<th>Maximum Marks</th>
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<tbody>
<tr>
<td><strong>Part- A:</strong> General Studies and mental ability</td>
<td>50</td>
<td>50</td>
<td>50</td>
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<tr>
<td><strong>PAPER-B:</strong> Civil/ Mechanical Engineering (Diploma standard)</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<td><strong>TOTAL</strong></td>
<td></td>
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<td><strong>150</strong></td>
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**Note:** For each correct answer 1 mark will be awarded and each wrong answer will carry negative mark.

SYLLABUS FOR EXIMANITION TO THE POST OF ENGINEERING ASSISTANT (GRADE-II)

**PART-A**

**GENERAL STUDIES AND MENTAL ABILITY**
1. General Mental ability and reasoning.
2. Quantitative aptitude including data interpretation.
3. General English.
5. General Science and its applications to the day to day life, Contemporary development in science and Technology and information Technology.
6. History & Culture of India with specific focus on AP.
7. Indian polity and governance: constitutional issues, 73/74th Amendments, public policy, reforms ad centre – state relations with specific reference to Andhra Pradesh.

PART-B

COMMON FOR CIVIL / MECHANICAL (Diploma Standard)


2. Engineering Mechanics: Statics, Resolution of force, Equilibrium of forces, Parallelogram law of forces, triangle law of forces, polygon law of forces and Lam'is theorem, Drawing the free body diagram, Centre of Gravity, Centre of Mass and centroid, Centroid of square, rectangle, triangle, semi-circle and trapezium, Centre of gravity of composite sections by analytical method only (T-Section, L-Section I-section and channel section). Moment of Inertia, Theorems of Moment of Inertia. i) Parallel axes theorem, ii) Perpendicular axes theorem. c) Moment of Inertia for simple Geometrical Sections, Rectangular, circular and triangular section and Radius of Gyration. Calculation of Moment of Inertia and Radius of Gyration of a) I – Section, b) Channel Section, c) T – Section. d) L – Section, e) Z - section f) Built up Sections.

Venturimeters, pitot-tube, current meters, Flow through pipes, Various losses when liquid flows through pipes, Laws of fluid friction, The equations for loss of head in pipes due to friction, Minor losses in pipe flow, Hydraulic gradient and total energy line for different pipes, Pipes in series (Compound pipe) and equivalent pipe, Impact of jets, Force of jet striking at the centre and at the top of a fixed curved blade and moving curved blade, velocity triangles, Work done, power and efficiency.


8. **Production Technology:** Working and operations of lathe, Drilling, shaper, slotter, planner, milling machines - Capstan and turret lathes - copying lathes - surface finishing operations - Honing, lapping, super finishing, electro plating, metal spraying. Equipment used in arc and gas welding. modern welding methods - Submerged arc, atomic, hydrogen, CO2, and ultrasonic welding, Forging processes and tools - cold and hot working processes. Pattern types - types of moulding sand and their properties - Defects in casting and welding.