

## SYLLABUS

Junior Technician – Chemical Engineering

<b>Chemical Engineering</b>	
01. 10 % Arithmetic 02. 10 % General English 03. 80 % for work-related topics.	
<b>Junior Technician</b>	<b>Recommended Syllabus</b>  Fluid Mechanics: Properties of fluids, Flow through pipeline systems, Flow meters, pumps and compressors, Frictional loss, Weirs  Mechanical Operations: Size reduction, Bonds law, Rittingers law and Kicks Law, Size analysis, Free and hindered settling, cyclones, centrifuge, filtration  Heat transfer: Steady and unsteady conduction, convection, radiation. Evaporation, condensation, heat exchangers  Mass transfer: Fick's law, Distillation, Adsorption, Absorption, Extraction  Process control: Response of first order and second order systems, Block diagrams, Open loop and closed loop transfer function, P, PI, and PID controllers, tuning of controllers using Cohen and Coon, and Ziegler Nichols  Reaction Engineering: Theories of reaction rates, single and multiple reactions in Ideal reactors; Non ideal reactors, RTD studies