



INDICATIVE SYLLABUS AND SCHEME OF EXAM

POST NO. 16.11.5-JUNIOR TECHNICIAN-CHEMICAL ENGINEERING

Ref: Notification No. IITH/2024/NF/16 dated 19.10.2024.

1. Selection Process: The selection process would comprise of two stages viz., (a) Skill test (b) Written test. Skill Test is qualifying in nature and does not carry any weightage in final selection. Candidates must qualify in the skill test for consideration in final selection. Final Selection will be based on the performance in the Written Test.

2. Syllabus and topic wise weightages.

01. 10 % Arithmetic
02. 10 % General English
03. 80 % for work-related topics.

1. Syllabus for Written Test:

- i. Fluid Mechanics: Properties of fluids, Flow through pipeline systems, Flow meters, pumps and compressors, Frictional loss, Weirs
- ii. Mechanical Operations: Size reduction, Bonds law, Rittingers law and Kicks Law, Size analysis, Free and hindered settling, cyclones, centrifuge, filtration
- iii. Heat transfer: Steady and unsteady conduction, convection, radiation. Evaporation, condensation, heat exchangers
- iv. Mass transfer: Fick's law, Distillation, Adsorption, Absorption, Extraction
- v. 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
- vi. Reaction Engineering: Theories of reaction rates, single and multiple reactions in Ideal reactors; Non ideal reactors, RTD studies

2. Skill Test

- i. Communication skills
- ii. Practical handling of laboratory equipment and facilities