



मोतीलालनेहरूराष्ट्रीयप्रौद्योगिकीसंस्थानअलीगढ़
प्रयागराज-211004 (भारत)
Motilal Nehru National Institute of Technology Allahabad
Prayagraj - 211 004 (India)

<Chemical Engineering>,
End Semester Examination, Session 2022-23 (Even)

Programme: <B.Tech> Branch: <Chemical> Semester: <6>
Course Name: <PROCESS EQUIPMENT DESIGN>
Course Code: <CHN16114> Max. Marks: <25>
Time: <1.5> HRS Registration No.:

Instructions (related to question paper):
1. <ALL QUESTIONS ARE COMPULSORY>

		Marks
Q.1	Explain the anatomy of Chemical Process and make the structure of Chemical Engineering Project.	05
Q.2	Make the Symbol of (a) Batch reactor with cooling coil (b) Fluidised bed reactor (c) Roller crusher (d) Filter press (e) Bag filter (f) Centrifugal pump (g) Fixed bed packed column (h) Positive displacement pump (i) Gas Holder (j) Rotary Drier	05
Q.3	Comment on different types of valves along with the diagram.	05
Q.4	Make a basic flowsheet of polymer production. Explain what type of information is provided to make the flowsheet	05
Q.5	Explain different type of agitators used in Chemical Industry along with diagram. How do we calculate the power of agitator?	05



<Chemical Engineering>,
End Semester Examination, Session 2024-25 (Even)

Programme: <B.Tech>

Branch: <Chemical>

Semester: 6th

Course Name: <PROCESS EQUIPMENT DESIGN>

Course Code: <CHN16114>

Max. Marks: <50>

Time: <2.5> HRS

Registration No.: 2 0 2 2 2 0 6 8

Instructions (related to question paper):

1. <ALL QUESTIONS ARE COMPULSORY>

		Marks
Q.1.	Make the Symbol of a) CSTR with COIL b) Fixed Bed reactor (catalytic reactor) c) Autoclave d) Jaw crusher e) Ball Mill f) Gravity Filter g) Batch tray Drier h) Spray Column i) Gas Holder (water seal) j) Plate Heat Exchanger k) Rotary pump l) Centrifugal compressor m) Ball Valve n) Globe Valve	07 (0.5 each)
Q.2.	Explain different types of ways in which two pipes can be joined together along with diagram.	05
Q.3.	Make a basic flowsheet of Nitric Acid Production. Explain the material balance.	05
Q.4.	Comment on :- a) Bend b) Elbow c) Tee d) Nipple	05 (01 each)

	e) Socket	
Q.5.	<p>Comment on :-</p> <ul style="list-style-type: none"> a) Maximum Working Pressure b) Design Pressure c) Design Temperature d) Factor of safety e) Corrosion Allowance 	05 (01 each)
Q.6.	Make a diagram of different types of formed Head and attachments to flat heads & write the formulae of thickness of plate.	(03)
Q.7.	What is a difference between static and dynamic mixer? Make diagram of five types of anchor mixer.	(04)
Q.8.	<p>Comment on :-</p> <ul style="list-style-type: none"> a) Turbine agitator along with diagram b) Propellor Agitator c) Helical Screw Agitator 	(03)
Q.9.	What are different types of special Heat Exchangers? Explain in detail?	(03)
Q.10.	Make a detail diagram of Shell and Tube Heat Exchanger. Explain how the tubes are arranged in a Heat Exchangers and why is it important to use baffles?	(05)
Q.11.	Make a detailed diagram of Packed Distillation Column. Also explain variuos types of packings used in distillation coloumn.	(05)