

University of Mumbai
Examination 2020 under cluster- PCOE

Program: Chemical Engineering

Curriculum Scheme: Rev 2016

Examination: Second Year Semester IV

Course Code: CHC405 and Course Name: Mechanical Equipment Design

Time: 1hour

Max. Marks: 50

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For the students: - All the Questions are compulsory and carry equal marks.

Q1.	Which of the following is not the theory of failure?
Option A:	Maximum failure theory
Option B:	Maximum normal stress theory
Option C:	Maximum strain energy theory
Option D:	Maximum principle strain theory
Q2.	Cylinder having inner diameter to wall thickness ratio less than 15 are
Option A:	Thin cylinders
Option B:	Thick Cylinders
Option C:	Moderate cylinders
Option D:	Drum
Q3.	Bucking of column means
Option A:	Lateral deflection
Option B:	Axial deflection
Option C:	Torsional deflection
Option D:	Gradual deflection
Q4.	In agitation system, a stabilizer ring _____
Option A:	resist the liquid swirl
Option B:	reduce vibration and deflection of shaft
Option C:	avoids vortexing
Option D:	drives the system
Q5.	IS 2825 is the Indian Standard code for _____
Option A:	Unfired Pressure Vessel
Option B:	Storage tank
Option C:	Distillation Column
Option D:	Heat Exchanger
Q6.	Which of the following is not the component of flanged joint?
Option A:	Gasket
Option B:	Nozzle
Option C:	Bolt
Option D:	Flange
Q7.	For the pressure vessel subjected to the internal pressure, design pressure will be normally
Option A:	50% - 60 % above working pressure
Option B:	5% - 10 % above atmospheric pressure

University of Mumbai
Examination 2020 under cluster- PCOE

Option C:	5% - 10 % above working pressure
Option D:	15% - 20 % above working pressure
Q8.	The joint efficiency factor for the tank for the double weld joint is
Option A:	0.8
Option B:	0.85
Option C:	0.9
Option D:	0.95
Q9.	For standard pressure vessel, safety margin of design temperature is greater than working temperature by ____
Option A:	25 °C
Option B:	20 °C
Option C:	15 °C
Option D:	10 °C
Q10.	Which radius is formed to avoid the corners in torispherical head?
Option A:	Crown radius
Option B:	Knuckle radius
Option C:	Guage radius
Option D:	Fillet radius
Q11.	Standard dished head is also called as _____
Option A:	Flat head
Option B:	Hemispherical head
Option C:	Torispherical head
Option D:	Shallow Dished head
Q12.	Which of the following is a type of variable volume storage tank for volatile liquid?
Option A:	Hortonsphere
Option B:	Open top tank
Option C:	Fixed roof tank
Option D:	Floating roof tank
Q13.	If pressure vessel thickness is more than 30 mm then, the value of corrosion allowance is
Option A:	2 mm
Option B:	neglected
Option C:	3 mm
Option D:	1.5 mm
Q14.	Which among the following are the best solutions for reducing the thickness of cylindrical shells under external and internal pressure?
Option A:	Stiffening Rings
Option B:	Gasket
Option C:	Nozzles
Option D:	Baffles

University of Mumbai
Examination 2020 under cluster- PCOE

Q15.	Which of the following is not the aim of agitation?
Option A:	Vortexing and Swirling
Option B:	Homogeneous mixing
Option C:	High heat transfer rate
Option D:	Improved reaction rate
Q16.	Power number is ratio of
Option A:	Imposed forced to inertial force
Option B:	Buoyant force to inertial force
Option C:	Gravitation force to inertial force
Option D:	Imposed force to gravitational force
Q17.	Paddle agitator
Option A:	Is suitable for mixing low viscosity liquids
Option B:	Produces axial flow
Option C:	Moves at very high speed
Option D:	Moves at very high speed with axial flow
Q18.	Skirt support is most suitable for _____
Option A:	Small horizontal vessel
Option B:	Tall vertical Vessels
Option C:	Horizontal Vessels
Option D:	Thick walled small vertical vessels
Q19.	Which one of the following jackets is best suited for agitated vessels?
Option A:	Half Coil Jacket
Option B:	Channel Jacket
Option C:	Plain Jacket
Option D:	Limpet Coil Jacket
Q20.	Bracket supports are most suitable for
Option A:	Thick walled vertical vessels
Option B:	Horizontal vessels
Option C:	Thin spherical vessels
Option D:	Vertical Vessels
Q21.	What is the dimple jacket plate thickness, if jacketed vessel has design pressure 0.8 N/mm^2 and maximum pitch between adjacent seam welds for dimple is 100 mm with allowable stress 120 N/mm^2 ?
Option A:	4.71 mm
Option B:	6.71 mm
Option C:	7.41 mm
Option D:	6.17 mm
Q22.	Horizontal vessels are mounted on _____
Option A:	Skirt support
Option B:	Bracket support

University of Mumbai
Examination 2020 under cluster- PCOE

Option C:	Saddle support
Option D:	Lug support
Q23.	While designing pipelines, which of the following basic design parameters are not taken as a basis?
Option A:	Atmospheric temperature and pressure
Option B:	Pipeline inlet and outlet points
Option C:	Medium composition, including viscosity and specific gravity
Option D:	Required throughput capacity
Q24.	Which of the following is not a metal forming technique?
Option A:	Rolling
Option B:	Drilling
Option C:	Forging
Option D:	Casting
Q25.	Which of the following is non-destructive examination technique?
Option A:	Radiographic testing
Option B:	Forging
Option C:	Drilling
Option D:	Stamping