

Unit 3 - Week 2

Course outline

How does an NPTEL online course work?

Week 1

Week 2

- Design of heads-1
- Design of heads-2
- Design of heads-3
- Compensation for Opening-1
- Compensation for Opening-2
- Quiz : Assignment 2
- Solution for Assignment 2

Week 3

Week 4

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Assignment 2

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-02-12, 23:59 IST.

1) Selection of heads depends on 1 point

- Position of vessel
- Support to the vessel
- Both of A and B
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Both of A and B

2) Which head is used to discharge the solid? 1 point

- Conical heads
- Ellipsoidal heads
- Hemispherical heads
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Conical heads

3) Bottom of sedimentation tank is made of 1 point

- Flat heads
- Conical heads
- Ellipsoidal heads
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Conical heads

4) To sustain 2MN/m² pressure, which head should be used 1 point

- Torispherical heads
- Conical heads
- Ellipsoidal heads
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Conical heads

5) For flat head with plates welded to the inside of the vessel, value of factor C is 1 point

- Equal to 0.55
- Greater than 0.55
- Both A and B
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Both A and B

6) For the same conditions of the vessel, maximum thickness is found in 1 point

- Flanged flat heads butt welded to the vessel
- Flathead with plates welded to the inside of the vessel
- Flat head with plates welded to the end of the shell
- All have equal thickness

No, the answer is incorrect.
Score: 0

Accepted Answers:
Flat head with plates welded to the end of the shell

7) Two thicknesses are computed for design of 1 point

- Torispherical heads
- Conical heads
- Ellipsoidal heads
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Conical heads

8) 6% is not added in minimum thickness for design of 1 point

- Flat heads
- Conical heads
- Ellipsoidal heads
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Flat heads

9) A pressure vessel with outer diameter of 3.5m and length of 15m is to be operated at maximum working pressure of 3.5 MN/m² 5 points
(g). The allowable stress of shell material at maximum working temperature is 150 MN/m². Corrosion allowance is 1.5mm and J is 0.85. What is the thickness of the conical head having 120° apex angle with r₁=0.06 D_o and ψ=45° at the junction?

- 45mm
- 56mm
- 71mm
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
71mm

10) For Question 9, what is the thickness of the conical head having 120° apex angle with r₁=0.06 D_o and ψ=45° away from the junction? 5 points

- 45mm
- 86mm
- 71mm
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
86mm

11) In opening in shell, compensation is provided by 1 point

- Additional material in shell
- Addition material in nozzle
- Both of the above
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
None of the above

12) If area of compensation is less than the area removed from the shell, then 1 point

- Ring pad is required
- Ring pad is not required
- Sometimes required and sometimes not required
- Head is required

No, the answer is incorrect.
Score: 0

Accepted Answers:
Ring pad is required

13) If thickness of ring pad is 10mm, what should be final thickness of pad 0 points

- 5mm
- 3mm
- 6mm
- 2mm

No, the answer is incorrect.
Score: 0

Accepted Answers:
5mm

14) If 300mm opening is made in shell, what should be final thickness of ring pad 1 point

- 2mm
- 5mm
- 6mm
- Ring pad is not required

No, the answer is incorrect.
Score: 0

Accepted Answers:
Ring pad is not required

15) A pressure vessel with outer diameter of 3m and length of 15m is to be operated at maximum working pressure of 3.5 MN/m² 6 points
(g). The allowable stress of shell material at maximum working temperature is 150 MN/m². Corrosion allowance is 1.5mm and J is 0.85. Compute the thickness of ring pad to compensate opening of 0.22m in shell. Allowable stresses for nozzle and ring are 150 MN/m². Inside protrusion of nozzle is 0.01m and nozzle length above surface is 0.03m.

- 45mm
- 56mm
- 63mm
- Compensation is not required

No, the answer is incorrect.
Score: 0

Accepted Answers:
45mm

16) For K'=0.9, examine whether compensation is required or not if 90mm opening is made on shell of vessel having outer diameter of 0.8 m and standard thickness of 10mm. 2 points

- Compensation is required
- Compensation is not required
- Cannot be examined
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Compensation is required