Unit 2 - Week 1

Course outline

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WEEKLY FEEDBACK

Assignment 1

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

Due on 2019-08-14, 23:59 IST.

1) Which amongst the followings is not a unit operation? *1 point*

- Distillation
- Hydrogenation
- Homogenization
- Crystallization

No, the answer is incorrect.
Score: 0
Accepted Answers:
Hydrogenation

2) Success and failure of the products depends on *1 point*

- Size of particle
- Flow ability of particle
- Shape of particle
- Density of particle

No, the answer is incorrect.
Score: 0
Accepted Answers:
Size of particle

3) In sedimentation *1 point*

- Solid particles are collected
- Phase separation occurs
- Both of the above
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Phase separation occurs

4) Sedimentation depends on *1 point*

- Pressure
- Viscosity
- Shape
- All of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
All of the above

5) Free settling occurs when concentration of slurry is *2 points*

- 0.9%
- 1.2%
- 1.7%
- 2.1%

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.9%

6) For larger height of the sedimentor *1 point*

- Higher concentration sludge will be found
- Lesser concentration sludge will be found
- Concentration of sludge will not affected
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Higher concentration sludge will be found

7) Which statement is not true for batch sedimentation test *1 point*

- Test is carried out at constant temperature
- Initially height of compression zone increases and then decreases
- Transition zone stay for longer
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Transition zone stay for longer

8) In critical sedimentation time *2 points*

- All particles enter in compression zone
- Settling zone disappear
- All of the above
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
All of the above

9) Continuous sedimentation is used in *1 point*

- Filtration
- Coal beneficiation
- Transportation of solids
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Coal beneficiation

10)300m^3/h of feed, consists of 4% by weight of coal (s gravity = 1.3), is to be clarified by continuous sedimentation. *6 points*
The effluent stream contains 15% solids. For the following batch sedimentation data find the area of the thickener.

Time (min)	0	5	15	30	50	100	200
Height of interface (cm)	50	30	15	8	5	3	2

- 169.03 m^2
- 250.54 m^2
- 400.13 m^2
- 40.57 m^2

No, the answer is incorrect.
Score: 0
Accepted Answers:
169.03 m^2

11)Separation of solids is fastest in *1 point*

- Gravity sedimentor
- Centrifuge
- Rotary drum filter
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Centrifuge

12)A centrifuge having diameter and height as 50 cm and 1m, respectively, is being operated at 1000 rpm. 5 cm thick liquid *3 points*
layer is formed inside the bowl. Compute the volumetric flow rate of slurry if 80 % of particles can be separated in
this centrifuge. Specification: Density of solid particle = 2500 kg/m^3, Density of liquid = 1.2 kg/m^3,
Viscosity of liquid 0.0032 kg/m s. The particle size distribution is

Particle size (mm)	Mass fraction
-0.426+0.301	0.08
-0.301+0.213	0.14
-0.213+0.151	0.23
-0.151+0.107	0.32
-0.107+0.075	0.13
-0.075+0.053	0.07
-0.053+0.044	0.03

- 12.58 m^3/s
- 4.67 m^3/s
- 15.45 m^3/s
- 5.76 m^3/s

No, the answer is incorrect.
Score: 0
Accepted Answers:
15.45 m^3/s

13)The purpose of rakes in sedimentation is *1 point*

- Direct sludge to the center of the tank
- Remove sludge from the center of the tank
- Both of the above
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Direct sludge to the center of the tank

14)Why feed enters to the tank at a depth from the top? *1 point*

- To remove the sludge easily
- To hinder settling of particles
- To avoid turbulence
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
To avoid turbulence

15)Tube settlers are used when *2 points*

- Thick sludge is the desired product
- Clear liquid is the desired product
- Both of the above
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Clear liquid is the desired product