Unit 4 - Week 2

Assignment 2

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

Due on 2020-09-30, 23:59 IST.

1) 1 point

Select the correct option about safety factor.

I. Safety factors represent the amount of overdesign that accounts for the changes in the operating performance with time and also for the uncertainties in the design process.

II. The indiscriminate application of safety factors should be avoided.

(a) Only statement – I is true
(b) Only statement-II is true
(c) Both the statements are true
(d) Both the statements are false

a)
b)
c)
d)

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

2) 1 point

A cylindrical storage tank for ethanol is to be designed for a plant producing 5,000 Tonnes of a product per year. 0.25 kg of ethanol is required for each kg of product and a 15-day storage capacity is specified for ethanol. The plant operates 8,300 hours per year. The density of ethanol can be taken as 789 kg/m^3. Assume that the length of storage tank is 3 times the diameter (L/D = 3) and it will only be filled to a maximum of 90% of the capacity.

The diameter of the storage tank (in m) will be _____.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 3.3.5

3) 1 point

Select the correct option.

I. Solids are usually heated or cooled by direct heat transfer.
II. Gas and liquid streams are usually heated or cooled by indirect heat exchange with another fluid.
III. For a large scale chemical industry, use of steam energy is generally more economical than electrical energy.

(a) Only statement I and II are true
(b) Only statement II and III are true
(c) Only statements I and III are true
(d) All the statements are true

a)
b)
c)
d)

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

4) 1 point

The Plant locations A, B, and C are assigned rating with respect to four factors. The weights to the factors are also mentioned. Find the best Plant Location using Factor Rating method. The best Plant Location is

(a) Location A
(b) Location B
(c) Location C
(d) All locations are equivalent

Factor	Weight	A	B	C
Cost	0.3	10	9	7
Transportation	0.2	7	3	10
Taxes	0.1	7	5	10
Labour	0.4	6	8	5

a)
b)
c)
d)

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

5) 1 point

Select the correct option.

I. By-products formed in an irreversible reaction must be separated away, otherwise it will build up in the process and the process has to be shut down.

II. For by-products formed in a reversible reaction, it is possible to achieve an equilibrium conversion at steady state by recycling product species without removing them from the process.

(a) Only statement I is true
(b) Only statement II is true
(c) Both the statements are true
(d) Both the statements are false

a)
b)
c)
d)

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

6) 1 point

Match the following Equipment Type with the corresponding Major Variable that characterize their design:

1. Agitated Batch Crystallizer	A. Temperature and Viscosity
2. Reboilers	B. Size Reduction
3. Packed Columns	C. Bulk Density
4. Hammer Mills	D. Superficial Vapour Velocity
5. Screw Conveyors	E. Solubility-Temperature Relation

(a) 1-B, 2-C, 3-D, 4-A, 5-E
(b) 1-B, 2-C, 3-D, 4-E, 5-A
(c) 1-E, 2-A, 3-D, 4-C, 5-B
(d) 1-E, 2-A, 3-D, 4-B, 5-C

a)
b)
c)
d)

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

7) 1 point

Match the following Industry with their most suitable location.

Industry/Process	Suitable Location
1. Thermal Power Plants	A. Near Hydroelectric Installations
2. Food, Beverages, Pharmaceuticals	B. Near the source of Water Supply
3. Extraction or Metal Refining	C. Near the source of Fuel Supply

(a) 1-A , 2-B, 3-C
(b) 1-B, 2-C, 3-A
(c) 1-C, 2-B, 3-A
(d) 1-C, 2-A, 3-B

a)
b)
c)
d)

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

8) 1 point

For which of the following industry dry climate is not helpful?

(a) Automobile industry
(b) Steel industry
(c) Cotton industry
(d) None of the above

a)
b)
c)
d)

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

9) 1 point

Match the following:

Type of fluid	Normal range of velocity in pipes (ft/s)
A) Water	P) 100-200
B) Low-pressure steam (25 psig)	Q) 3-10
C) High pressure steam (100 psig and above)	R) 50-100
D) Air at ordinary pressure (25-50 psig)	

a) A-P, B-Q ,C-R, D-Q
b) A-R, B-P, C-Q, D-P
c) A-Q, B-R, C-P, D-R
d) A-Q, B-Q, C-R, D-R

a)
b)
c)
d)

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

10) 1 point

Urea formation takes place in the ……

(a) Packed Bed
(b) Prilling Tower
(c) Boilers
(d) Cooling Towers

a)
b)
c)
d)

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