

Notations :

1.Options shown in **green** color and with  icon are correct.

2.Options shown in **red** color and with  icon are incorrect.

Question Paper Name :	Chemical Engineering 31st May 2023 Shift 1
Subject Name :	Chemical Engineering
Creation Date :	2023-05-31 13:36:39
Duration :	120
Total Marks :	120
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No

Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Chemical Engineering

Group Number :	1
Group Id :	28393668
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	120
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Mathematics

Section Id :	283936186
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	10
Section Marks :	10
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0

Sub-Section Number : 1
Sub-Section Id : 283936186
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 1 Question Id : 2839369521 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

Options :

1. ✖ 0

2. ✔ 1

3. ✖ 2

4. ✖ infinite

Question Number : 2 Question Id : 2839369522 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

Let $-1, 1, 2, 1$ be eigenvalues of a matrix of order 4 and let $B = A^3 + 2I$, where I is the identity matrix of order 4. The determinant of B is

Options :

1. ✔ 90

2. ✖ 8

3. ✖ 30

4. ✖ -90

Question Number : 3 Question Id : 2839369523 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $u = \frac{y+z}{x}$, then $xu_x + yu_y + zu_z =$

Options :

1. ✖ 3

2. ✖ 2

3. ✔ 0

4. ✖ -2

Question Number : 4 Question Id : 2839369524 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\int_0^{\pi} \int_0^{\sin \theta} r \, dr \, d\theta =$$

Options :

1. ✔

$$\frac{\pi}{4}$$

2. ✖ 0

3. ✖ $\frac{\pi}{2}$

4. ✖ $\frac{\pi^2}{4}$

Question Number : 5 Question Id : 2839369525 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of solutions for $y'' + k^2 y = 0$, $y(0) = y(\pi) = 0$, $k \neq 0$ is

Options :

1. ✖ 0

2. ✔ 1

3. ✖ 4

4. ✖ infinite

Question Number : 6 Question Id : 2839369526 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The solution of $u_x - 4u_y = 0$ satisfying $u(0, y) = 8e^{-3y}$ is given by $u(x, y) =$

Options :

1. ✓ $8e^{-12x-3y}$

2. ✗ $8e^{-x-3y}$

3. ✗ $8e^{4x-3y}$

4. ✗ $8e^{-x-4y}$

Question Number : 7 Question Id : 2839369527 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The value of the integral $\int_{|z|=1} \sec z \, dz$ is

Options :

1. ✗ πi

2. ✗ $2\pi i$

3. ✓ 0

4. ✗ 1

Question Number : 8 Question Id : 2839369528 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A continuous random variable ' X ' has the p.d.f. $f(x) = \begin{cases} 2e^{-2x}, & x > 0 \\ 0 & , x \leq 0 \end{cases}$.

Then $Var(2X) =$

Options :

1. ✓ 1

2. ✗ $\frac{1}{4}$

3. ✗ $\frac{1}{2}$

4. ✗ $\frac{1}{8}$

Question Number : 9 Question Id : 2839369529 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $y = ax + 4$ and $x = 4y + 5$ are the two regression lines, then

Options :

1. ✗ $a < 0$

2. ✓ $0 \leq a \leq \frac{1}{4}$

3. ✖ $\frac{1}{4} < a \leq 1$

4. ✖ $-1 \leq a < 0$

Question Number : 10 Question Id : 2839369530 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The interval of unit length which contains the largest positive root of $x^3 - 5x + 3 = 0$ is

Options :

1. ✖ $(2, 3)$

2. ✖ $(0, 1)$

3. ✖ $(-1, 0)$

4. ✔ $(1, 2)$

Chemical Engineering

Section Id :	283936187
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	110

Number of Questions to be attempted :	110
Section Marks :	110
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	283936187
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 11 Question Id : 2839369531 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The average molecular weight of air is

Options :

1. ✖ 21

2. ✔ 29

3. ✖ 42

4. ✖ 27

Question Number : 12 Question Id : 2839369532 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the fuel gas undergoes combustion with air and if the air/fuel ratio is increased, then the adiabatic flame temperature will

Options :

1. ✓ Decrease
2. ✗ Increase
3. ✗ Increase or decrease based on type of fuel
4. ✗ Not change

Question Number : 13 Question Id : 2839369533 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

COX chart is a graph drawn between logarithm of vapor pressure versus

Options :

1. ✗ Pressure
2. ✓ Temperature
3. ✗ Concentration
4. ✗ Enthalpy

Question Number : 14 Question Id : 2839369534 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of gram equivalents dissolved in 1 litre of solution is

Options :

1. ✖ Molarity
2. ✔ Normality
3. ✖ Mole %
4. ✖ Molality

Question Number : 15 Question Id : 2839369535 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is used to estimate heat capacity of a solid compound?

Options :

1. ✖ Trouton's rule
2. ✖ Gibbs equation
3. ✖ Clapeyron equation
4. ✔ Kopp's rule

Question Number : 16 Question Id : 2839369536 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If there is no transfer of mass or energy across the boundary of a system, then it is

Options :

1. ✖ Open system
2. ✖ Closed system
3. ✔ Isolated system
4. ✖ Adiabatic system

Question Number : 17 Question Id : 2839369537 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is an extensive property?

Options :

1. ✖ Pressure
2. ✔ Volume
3. ✖ Temperature
4. ✖ Specific volume

Question Number : 18 Question Id : 2839369538 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A substance above its critical temperature exists as

Options :

1. ✖ Liquid
2. ✖ Saturated vapor
3. ✔ Gas
4. ✖ Solid

Question Number : 19 Question Id : 2839369539 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Melting of ice is example for

Options :

1. ✖ Adiabatic process
2. ✔ Constant temperature process
3. ✖
4. ✖ Isochoric process

Question Number : 20 Question Id : 2839369540 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

At the triple point of a pure substance, the degrees of freedom is

Options :

1. ✖ 1

2. ✔ 0

3. ✖ 4

4. ✖ 3

Question Number : 21 Question Id : 2839369541 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following has dimensions

Options :

1. ✖ Activity coefficient

2. ✔ Fugacity

3. ✖ Activity

4. ✖ Fugacity coefficient

Question Number : 22 Question Id : 2839369542 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For endothermic reaction, the equilibrium constant is

Options :

1. ✓ Decreases with increase in temperature
2. ✗ Increases with increase in temperature
3. ✗ Decreases linearly with decrease in temperature
4. ✗ Not effected by change in temperature

Question Number : 23 Question Id : 2839369543 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The enthalpy change of mixing for ideal gases is

Options :

1. ✗ one
2. ✗ Infinity
3. ✓ zero

4. ✖ Five

Question Number : 24 Question Id : 2839369544 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The equation $f_i^{\text{id}} = f_i x_i$ is known as, where f_i^{id} = fugacity of species 'i' in ideal Solution,
 f_i = fugacity of species 'i'

Options :

1. ✖ Henry's law
2. ✔ Lewis – Randall rule
3. ✖ Raoult's law
4. ✖ Dalton's law

Question Number : 25 Question Id : 2839369545 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Throttling process is

Options :

1. ✖ reversible & constant enthalpy process
2. ✔ irreversible & constant enthalpy process
- 3.

✖ reversible & constant entropy process

4. ✖ reversible & isothermal process

Question Number : 26 Question Id : 2839369546 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For an ideal fluid flow the Reynolds number is

Options :

1. ✔ Infinity

2. ✖ Zero

3. ✖ One

4. ✖ 2100

Question Number : 27 Question Id : 2839369547 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a duct of square cross section of side 'a', the hydraulic radius is

Options :

1. ✖ $\frac{a}{2}$

2. ✖

$$\frac{a}{8}$$

3. ✖ $\frac{a}{6}$

4. ✔ $\frac{a}{4}$

Question Number : 28 Question Id : 2839369548 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Pitot tube is used for measuring

Options :

- 1. ✖ Flow rate of the fluid
- 2. ✖ Pressure of the fluid
- 3. ✖ Viscosity
- 4. ✔ Point velocity of the flow of fluid

Question Number : 29 Question Id : 2839369549 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If stoke is the unit of kinematic viscosity, then one stoke is

Options :

1. ✖ $1 \text{ m}^2/\text{s}$

2. ✖ $1 \text{ ft}^2/\text{s}$

3. ✔ $1 \text{ cm}^2/\text{s}$

4. ✖ $1 \text{ mm}^2/\text{s}$

Question Number : 30 Question Id : 2839369550 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is an example for dilatent fluid?

Options :

1. ✖ Rubber latex

2. ✔ Quick sand

3. ✖ Non-colloidal solution

4. ✖ Sewage emulsion

Question Number : 31 Question Id : 2839369551 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Weber number is the ratio of inertial forces to

Options :

1. ✖ pressure forces
2. ✔ surface tension
3. ✖ gravity forces
4. ✖ viscous forces

Question Number : 32 Question Id : 2839369552 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Cavitation in centrifugal pumps is due to

Options :

1. ✖ Low barometric pressure
2. ✖ High suction pressure
3. ✔ Low suction pressure
4. ✖ High velocity of fluid at suction

Question Number : 33 Question Id : 2839369553 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In fluidized bed, with the increase in expansion of the bed, up to solids carry over from the bed, the pressure drop across the bed will be

Options :

1. ✖ increases rapidly
2. ✖ decreases rapidly
3. ✖ first increases and then decreases
4. ✔ remains constant

Question Number : 34 Question Id : 2839369554 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Hagen-Poiseuille equation is applicable for

Options :

1. ✖ Laminar flow of non-Newtonian fluids
2. ✖ Newtonian & Non-Newtonian fluids
3. ✖ Turbulent flow
4. ✔ Laminar flow of Newtonian fluids

Question Number : 35 Question Id : 2839369555 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Globe valve is most suitable when

Options :

1. ✖ The valve is required to be either fully open or fully closed
2. ✔ Flow control is required
3. ✖ The fluid contains dispersed particles
4. ✖ One-way flow is required

Question Number : 36 Question Id : 2839369556 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In ball mill size reduction is done by

Options :

1. ✖ Cutting
2. ✔ Impact and attrition
3. ✖ Attrition
4. ✖ Impact

Question Number : 37 Question Id : 2839369557 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In filtration operation, the filter aids are used to

Options :

1. ✖ decrease the porosity of cake
2. ✔ increase the porosity of cake
3. ✖ increase the compressibility coefficient of cake
4. ✖ decrease the compressibility coefficient of cake

Question Number : 38 Question Id : 2839369558 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In Taylor standard screens, the ratio of the actual mesh dimension of any screen to that of the next smaller screen is

Options :

1. ✔ 1.414
2. ✖ 1.732
3. ✖ 2.5
4. ✖ 1.6

Question Number : 39 Question Id : 2839369559 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Energy requirement per unit mass of material crushed is highest for

Options :

1. ✖ Rod mill
2. ✔ Fluid energy mill
3. ✖ ball mill
4. ✖ Jaw crusher

Question Number : 40 Question Id : 2839369560 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In agitation, power consumption in turbulent flow is proportional to the

Options :

1. ✔ density of liquid
2. ✖ viscosity of liquid
3. ✖ interface tension of liquid
4. ✖ thermal conductivity of liquid

Question Number : 41 Question Id : 2839369561 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The dimensions of specific cake resistance are

Options :

1. ✓ $M L^{-2}$

2. ✗ $L^{-1} M^{-1}$

3. ✗ $L^{-1} M$

4. ✗ M^{-1}

Question Number : 42 Question Id : 2839369562 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The devices which separate particles of different densities are known as

Options :

1. ✗ cyclones

2. ✗ thickeners

3. ✓ Sorting classifiers

4. ✗ filters

Question Number : 43 Question Id : 2839369563 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When granular solids are piled up on a flat surface, the sides of the pile are at a definite reproducible angle with horizontal, then angle is

Options :

1. ✖ Angle of incidence
2. ✖ Angle of internal friction
3. ✖ Angle of nip
4. ✔ Angle of repose

Question Number : 44 Question Id : 2839369564 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The ratio of inertial stress to the gravitational force per unit area acting on the fluid is

Options :

1. ✖ Weber number
2. ✖ Reynolds number
3. ✔ Froude Number

4. ✖ Power number

Question Number : 45 Question Id : 2839369565 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In screen analysis, the notation 50/100 means

Options :

1. ✔ Passing through 50 mesh and retained on 100 mesh
2. ✖ Passing through 100 mesh and retained on 50 mesh
3. ✖ 50 gm fines and 100 gm coarse
4. ✖ 100 gm fines and 50 gm coarse

Question Number : 46 Question Id : 2839369566 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The critical radius of insulation of a sphere in terms of Thermal conductivity k and
Heat transfer coefficient h is

Options :

1. ✔ $\frac{2k}{h}$
2. ✖

$$\frac{k}{h}$$

3. ✖ $\frac{k}{2h}$

4. ✖ $\frac{h}{k}$

Question Number : 47 Question Id : 2839369567 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Biot number is important in solving the problems of

Options :

1. ✖ Heat transfer by radiation
2. ✖ Heat transfer by natural convection
3. ✖ Heat transfer by forced convection
4. ✔ Transient heat conduction

Question Number : 48 Question Id : 2839369568 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The thermal conductivity is maximum for

Options :

1. ✓ Silver
2. ✗ Copper
3. ✗ Mild steel
4. ✗ Stainless steel

Question Number : 49 Question Id : 2839369569 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Grashof number is defined as the ratio of

Options :

1. ✗ Buoyancy to inertial forces
2. ✗ buoyancy to surface tension forces
3. ✗ Inertial to viscous forces
4. ✓ buoyancy to viscous forces

Question Number : 50 Question Id : 2839369570 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The heat transfer coefficient by Dittus-Boelter equation is valid for

Options :

1. ✖ Laminar flow
2. ✖ For liquid metals
3. ✔ Turbulent flow
4. ✖ Natural convection

Question Number : 51 Question Id : 2839369571 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In thermal radiation, for a black body

Options :

1. ✖ The absorptivity is equal to one
2. ✖ The Emissivity is equal to one
3. ✖ Absorptivity & Emissivity are not equal to one
4. ✔ Absorptivity & Emissivity are equal to one

Question Number : 52 Question Id : 2839369572 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The presence of small amounts of non-condensing gas in a condensing vapour

Options :

1. ✖ increases rate of condensation
2. ✔ Reduces rate of condensation
3. ✖ Does not affect rate of condensation
4. ✖ Increases condensing film coefficient

Question Number : 53 Question Id : 2839369573 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Heat transfer by radiation is described by

Options :

1. ✖ Fick's law
2. ✖ Fourier's law
3. ✖ Newton's law
4. ✔ Steffan-Boltzman's law

Question Number : 54 Question Id : 2839369574 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The capacity of an evaporator is defined as

Options :

1. ✓ Number of kgs of solvent vaporized per hour
2. ✗ Number of kgs of solvent vaporized per kg of steam fed to the evaporator
3. ✗ Number of kgs of steam consumed per hour
4. ✗ Number of kgs of steam consumed per kg of solvent vaporized

Question Number : 55 Question Id : 2839369575 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Duhring's rule is useful in solving problems of

Options :

1. ✗ Distillation
2. ✓ Evaporation
3. ✗ Crystallization
4. ✗ Drying

Question Number : 56 Question Id : 2839369576 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The molecular diffusivity of a liquid is

Options :

1. ✓ Increases with temperature
2. ✗ decreases with temperature
3. ✗ increase or decrease with temperature
4. ✗ independent of temperature

Question Number : 57 Question Id : 2839369577 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Mass transfer coefficient, k , according to penetration theory varies with mass diffusivity as

Options :

1. ✓ $D^{0.5}$
2. ✗ D
3. ✗ $\frac{1}{D}$
4. ✗ $D^{1.2}$

Question Number : 58 Question Id : 2839369578 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Sherwood number in mass transfer is analogous to the following dimensionless group in heat transfer

Options :

1. ✘ Graetz number
2. ✘ Grashof number
3. ✔ Nusselt number
4. ✘ Prandtl number

Question Number : 59 Question Id : 2839369579 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Absorption factor is defined as where L = liquid flow rate, G = gas flow rate and m = slope of equilibrium line

Options :

1. ✔ $\frac{L}{mG}$
2. ✘ $\frac{G}{mL}$
3. ✘

$$\frac{\text{mL}}{\text{G}}$$

4. ✖ $\frac{\text{LG}}{\text{m}}$

Question Number : 60 Question Id : 2839369580 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the value of q for saturated liquid feed in a distillation column, where q is defined as the moles of liquid flow in the stripping section per mole of feed introduced

Options :

1. ✖ $q > 1$

2. ✖ $q = -1$

3. ✔ $q = 1$

4. ✖ $q = 0$

Question Number : 61 Question Id : 2839369581 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In distillation under minimum reflux conditions, the number of theoretical stages are

Options :

1. ✖ one

2. ✖ two

3. ✔ Infinite

4. ✖ five

Question Number : 62 Question Id : 2839369582 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the temperature of atmosphere increases at constant absolute humidity, the wet-bulb temperature would

Options :

1. ✖ Decrease

2. ✖ remain constant

3. ✔ increase

4. ✖ Decreases and then increases

Question Number : 63 Question Id : 2839369583 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The type of tray which gives greatest flexibility in distillation column is

Options :

1. ✖ sieve tray
2. ✖ bubble cap tray
3. ✔ valve tray
4. ✖ Linde tray

Question Number : 64 Question Id : 2839369584 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Absorption towers are operated under conditions of

Options :

1. ✖ low pressure, high temperature
2. ✖ high pressure, high temperature
3. ✔ high pressure, low temperature
4. ✖ low pressure, low temperature

Question Number : 65 Question Id : 2839369585 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Lewis number plays an important role in problem(s) of

Options :

1. ✖ heat transfer only
2. ✖ mass transfer only
3. ✔ Simultaneous heat and mass transfer
4. ✖ momentum transfer only

**Question Number : 66 Question Id : 2839369586 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 1 Wrong Marks : 0

Moisture contained by a substance in excess of equilibrium moisture is

Options :

1. ✖ Unbound moisture
2. ✔ free moisture
3. ✖ critical moisture
4. ✖ bound moisture

**Question Number : 67 Question Id : 2839369587 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 1 Wrong Marks : 0

At a given equilibrium pressure the concentration of adsorbed gas on adsorbent solid is

Options :

1. ✖ remains constant with change in temperature
2. ✖ increases with increased temperature
3. ✔ decreases with increased temperature
4. ✖ increases linearly with decrease temperature

Question Number : 68 Question Id : 2839369588 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In binary distillation, the separation of the components is not possible if the relative volatility (α) is

Options :

1. ✖ $\alpha = 2$
2. ✔ $\alpha = 1$
3. ✖ $\alpha = 1.5$
4. ✖ $\alpha = 4$

Question Number : 69 Question Id : 2839369589 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A batch of material is dried under constant drying conditions. When drying is taking place from all the surfaces, the rate of drying during the constant rate period is

Options :

1. ✘ directly proportional to the solid thickness
2. ✔ independent of solid thickness
3. ✘ inversely proportional to the solid thickness
4. ✘ directly proportional to the square of solid thickness

Question Number : 70 Question Id : 2839369590 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The SI units of diffusion coefficient is

Options :

1. ✘ $\frac{m}{s}$
2. ✘ $\frac{m}{s^2}$
3. ✔ $\frac{m^2}{s}$

4. ✖ N-m

Question Number : 71 Question Id : 2839369591 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The dimensions of the rate constant for reaction $A \rightarrow B$ are lit/mol min , then the order of the reaction is

Options :

1. ✖ Zero

2. ✖ One

3. ✔ Two

4. ✖ Three

Question Number : 72 Question Id : 2839369592 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

From Arrhenius law, a plot of $\ln k$ versus $1/T$ gives straight line with slope of

Options :

1. ✖ $\frac{E}{R}$

2. ✖ $\frac{R}{E}$

3. ✓ $-\frac{E}{R}$

4. ✗ $-\frac{R}{E}$

Question Number : 73 Question Id : 2839369593 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A reaction is of zero order when the rate of reaction is

Options :

1. ✗ proportional to the concentration of the reactant
2. ✗ inversely proportional to the concentration of the reactant
3. ✗ independent of pressure
4. ✓ independent of the concentration of the reactant

Question Number : 74 Question Id : 2839369594 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The energy balance equation over a tubular reactor under transient conditions is

Options :

1. ✗ an ordinary nonlinear differential equation

2. ✖ an algebraic equation
3. ✖ a linear partial differential equation
4. ✔ a non-linear partial differential equation

Question Number : 75 Question Id : 2839369595 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Thiele modulus is defined as

Options :

1. ✖ D/k
2. ✖ k/D
3. ✔ $L(k/D)^{0.5}$
4. ✖ Lk/D

Question Number : 76 Question Id : 2839369596 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the gaseous reaction $2A \rightarrow B$, where feed consists of 50 mol% A and 50 mol% inerts, then the fractional change in volume (ϵ_A) is

Options :

1. ✖ -0.5

2. ✖ 1.2

3. ✔ -0.25

4. ✖ 0

Question Number : 77 Question Id : 2839369597 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For same feed composition, flow rate, conversion and for all positive orders, the ratio of volumes of the mixed reactor to the PFR is

Options :

1. ✖ Always less than one

2. ✖ Always equal to one

3. ✔ Always greater than one

4. ✖ Equal to the order of the reaction

Question Number : 78 Question Id : 2839369598 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For perfect mixed flow, the dispersion number (D/uL) is

Options :

1. ✖ Zero
2. ✔ Infinity
3. ✖ One
4. ✖ Two

Question Number : 79 Question Id : 2839369599 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The exit age distribution of the fluid leaving a reactor is used

Options :

1. ✖ to study reaction mechanism
2. ✔ to study the non-ideal flow in the reactor
3. ✖ to know the rate constant
4. ✖ to find activation energy

Question Number : 80 Question Id : 2839369600 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the irreversible elementary 1st order reactions in parallel $A \rightarrow R, A \rightarrow S$, a plot of C_R versus C_S gives straight line with a slope of

Options :

1. ✖ $k_1 + k_2$

2. ✔ $\frac{k_1}{k_2}$

3. ✖ $k_1 - k_2$

4. ✖ $\frac{k_2}{k_1}$

Question Number : 81 Question Id : 2839369601 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A reaction in which one of the products of the reaction acts as a catalyst, then the reaction is called as

Options :

1. ✖ Catalytic reaction

2. ✖ Photochemical reaction

3. ✔ Autocatalytic reaction

4. ✖ Biochemical reaction

Question Number : 82 Question Id : 2839369602 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a steady state CSTR, the space time and holding time are same for

Options :

1. ✖ variable density system
2. ✔ Constant density system
3. ✖ non-isothermal reaction system
4. ✖ Gas phase reaction with changing number of moles

Question Number : 83 Question Id : 2839369603 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When a catalyst increases the rate of a chemical reaction, then the value of rate constant is

Options :

1. ✔ Increases
2. ✖ Decreases
3. ✖ Remains constant
4. ✖ Becomes infinity

Question Number : 84 Question Id : 2839369604 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The rate of a chemical reaction is a function of

Options :

1. ✖ temperature of the system
2. ✖ Pressure of the system
3. ✖ Concentration of the system
4. ✔ Temperature, pressure and concentration of the system

Question Number : 85 Question Id : 2839369605 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If a non-catalytic gas-solid reaction takes place at very high temperature, then the rate controlling step is

Options :

1. ✖ pore diffusion
2. ✖ Ash layer diffusion
3. ✖ chemical reaction

4. ✓ Film diffusion

Question Number : 86 Question Id : 2839369606 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is a desirable static characteristic of an instrument?

Options :

1. ✗ static error
2. ✓ reproducibility
3. ✗ drift
4. ✗ Dead zone

Question Number : 87 Question Id : 2839369607 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

McLeod gauge is used to measure

Options :

1. ✗ pressure more than 30 psia
2. ✗ pressure less than 30 psia
3. ✓ high vacuum

4. ✖ atmospheric pressure

Question Number : 88 Question Id : 2839369608 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Composition of alloys is determined by

Options :

1. ✖ mass spectrometer

2. ✖ thermal conductivity cell

3. ✖ polarimeter

4. ✔ polarograph

Question Number : 89 Question Id : 2839369609 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following instrument is used to measure the temperature of furnaces?

Options :

1. ✖ bimetallic thermometer

2. ✖ Iron-constantan thermocouple

3. ✓ radiation pyrometer

4. ✗ Resistance thermometer

Question Number : 90 Question Id : 2839369610 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is a dynamic characteristic of an instrument?

Options :

1. ✗ drift

2. ✗ reproducibility

3. ✓ time lag

4. ✗ span

Question Number : 91 Question Id : 2839369611 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Laplace transform of the function $f(t) = t^{0.5}$ is

Options :

1. ✓ $\frac{\sqrt{\pi}}{2s^{3/2}}$

2. ✖ $\frac{\sqrt{\pi}}{s^{3/2}}$

3. ✖ $\frac{2\sqrt{\pi}}{2s^{3/2}}$

4. ✖ $\frac{\sqrt{\pi}}{4s^{3/2}}$

Question Number : 92 Question Id : 2839369612 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 1 Wrong Marks : 0

The inverse Laplace transform of the function $f(s) = \frac{1}{s(s+1)}$ is

Options :

1. ✔ $1 - e^{-t}$

2. ✖ $1 + e^{-t}$

3. ✖ $1 - e^t$

4. ✖ $1 + e^t$

Question Number : 93 Question Id : 2839369613 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The % overshoot of an un-damped 2nd order system is

Options :

1. ✖ 30%

2. ✔ 100%

3. ✖ 60%

4. ✖ 80%

Question Number : 94 Question Id : 2839369614 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The step response of two tank interacting system is

Options :

1. ✖ Underdamped system

2. ✔ overdamped system

3. ✖ undamped system

4. ✖ critically damped system

Question Number : 95 Question Id : 2839369615 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Offset is zero for

Options :

1. ✖ P-controller
2. ✖ PD controller
3. ✖ P and PD controllers
4. ✔ PI and PID controllers

Question Number : 96 Question Id : 2839369616 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is an example for underdamped 2nd order system?

Options :

1. ✖ mixed reactor
2. ✔ U-tube manometer
3. ✖ liquid level system
4. ✖ Thermal well

Question Number : 97 Question Id : 2839369617 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Bode diagrams are obtained from the output response of the system subjected to the input

Options :

1. ✖ Step
2. ✔ sinusoidal
3. ✖ Ramp
4. ✖ impulse

Question Number : 98 Question Id : 2839369618 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The open loop poles, zeros of the transfer function $G(s) = \frac{(2s+1)}{(s+1)}$ are

Options :

1. ✖ -0.5, 1
2. ✖ -1, 0.5
3. ✔ -1, -0.5
4. ✖ 0.5, 1

Question Number : 99 Question Id : 2839369619 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The negative phase margin indicates that the control system is

Options :

1. ✖ stable
2. ✖ oscillatory
3. ✖ non-oscillatory
4. ✔ unstable

Question Number : 100 Question Id : 2839369620 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following control strategy is useful when the disturbances are associated with manipulated variables?

Options :

1. ✔ Cascade control
2. ✖ feed forward control
3. ✖ ratio control
- 4.

Question Number : 101 Question Id : 2839369621 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In manufacturing industry, break-even point occurs when

Options :

1. ✖ the total annual rate of production equals the assigned valued
2. ✔ the total annual product cost equals the total annual sales
3. ✖ the annual profit equals the expected value
4. ✖ the annual sales equal the fixed costs

Question Number : 102 Question Id : 2839369622 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Turnover ratio is defined as the ratio of gross annual sales to the

Options :

1. ✖ total income
2. ✖ total product cost
3. ✔ fixed capital investment

4. ✖ Rate of production

Question Number : 103 Question Id : 2839369623 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following equation is used to calculate the simple interest, where, S = amount after n interest periods, P = principal, i = interest rate, n = number of interest periods

Options :

1. ✖ $S = P(1+in)^2$

2. ✔ $S = P(1+in)$

3. ✖ $S = \frac{P}{(1+in)^2}$

4. ✖ $S = \frac{(1+in)}{P}$

Question Number : 104 Question Id : 2839369624 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Six-tenths factor rule is used for

Options :

1. ✖ cost index

2. ✓ cost scaling

3. ✗ depreciation

4. ✗ Break even analysis

Question Number : 105 Question Id : 2839369625 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is a component of working capital investment?

Options :

1. ✗ process equipment

2. ✓ maintenance & repair inventory

3. ✗ utilities in plants

4. ✗ depreciation

Question Number : 106 Question Id : 2839369626 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a typical project, the cumulative cash flow is zero at the

Options :

1. ✗ end of the project life

2. ✖ start-up

3. ✔ break-even point

4. ✖ end of the design stage

Question Number : 107 Question Id : 2839369627 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Select the correct relation from the following

Options :

1. ✖ Profit = revenue –fixed cost
2. ✖ Profit = revenue –operating cost
3. ✔ Profit = revenue –total cost
4. ✖ Profit = revenue –book value

Question Number : 108 Question Id : 2839369628 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following equation is used to calculate annual depreciation amount (d) using straight line method, where, V = original value of the property at the start of the service period, V_s = Salvage value of the property at the end of service life, n = service life in years

Options :

1. ✖ $d = \frac{(V + V_s)}{n}$

2. ✖ $d = \frac{(V \times V_s)}{n}$

3. ✔ $d = \frac{(V - V_s)}{n}$

4. ✖ $d = \frac{V_s}{n \times V}$

Question Number : 109 Question Id : 2839369629 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If S represents the amount available after n interest periods for an initial principal P with the discrete compound interest rate i, then present worth can be determined by

Options :

1. ✔ $\frac{S}{(1+i)^n}$

2. ✖ $\frac{S}{(1+in)}$

3. ✖ $S(1+i)^n$

4. ✖ $\frac{(1+i)^n}{S}$

Question Number : 110 Question Id : 2839369630 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following method depth results in book values greater than those obtained with the straight-line method?

Options :

1. ✖ declining balance method
2. ✖ Sum of the years digits method
3. ✔ sinking fund method
4. ✖ multiple straight-line method

Question Number : 111 Question Id : 2839369631 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Oleum is represented by the formula

Options :

1. ✖ H_2SO_4

2. ✖ H_2SO_3

3. ✖ $\text{H}_2\text{S}_2\text{O}_6$

4. ✔ $\text{H}_2\text{S}_2\text{O}_7$

Question Number : 112 Question Id : 2839369632 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The constituents of water gas are

Options :

1. ✖ CO and H_2O

2. ✖ N_2 and CO_2

3. ✖ N_2 and CO

4. ✔ CO and H_2

Question Number : 113 Question Id : 2839369633 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following catalyst is used in Hydrogenation of oils?

Options :

1. ✔ Nickel

2. ✖ Silver

3. ✖ Copper

4. ✖ Iron

Question Number : 114 Question Id : 2839369634 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Identify the thermosetting plastic from the following

Options :

1. ✖ polyethylene

2. ✖ polypropylene

3. ✔ Bakelite

4. ✖ Teflon

Question Number : 115 Question Id : 2839369635 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Cumene is

Options :

1.

✖ isopropanol

2. ✖ isoprene

3. ✔ isopropyl benzene

4. ✖ ethyl benzene

Question Number : 116 Question Id : 2839369636 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In the Kraft process, the reagents used in the digester are

Options :

1. ✔ caustic soda, sodium sulphide, soda ash

2. ✖ caustic soda, mercaptans, ethylene oxide

3. ✖ baking soda, sodium sulphide, quick lime

4. ✖ slaked lime, salt cake, mercaptans

Question Number : 117 Question Id : 2839369637 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Super phosphate is made by reacting phosphate rock with

Options :

1. ✓ Dilute sulphuric acid
2. ✗ orthophosphoric acid
3. ✗ hydrochloric acid
4. ✗ gypsum

Question Number : 118 Question Id : 2839369638 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

LPG at normal atmospheric temperature and pressure is a

Options :

1. ✗ liquid heavier than water
2. ✓ gas heavier than air
3. ✗ gas lighter than air
4. ✗ liquid lighter than water

Question Number : 119 Question Id : 2839369639 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Cetane number is a measurement of the quality of

Options :

1. ✖ gasoline
2. ✖ kerosene
3. ✔ high speed diesel oil
4. ✖ fuel oil

Question Number : 120 Question Id : 2839369640 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Urea is a

Options :

1. ✖ mixed fertilizer
2. ✔ nitrogenous fertilizer
3. ✖ potassic fertilizer
4. ✖ phosphatic fertilizer