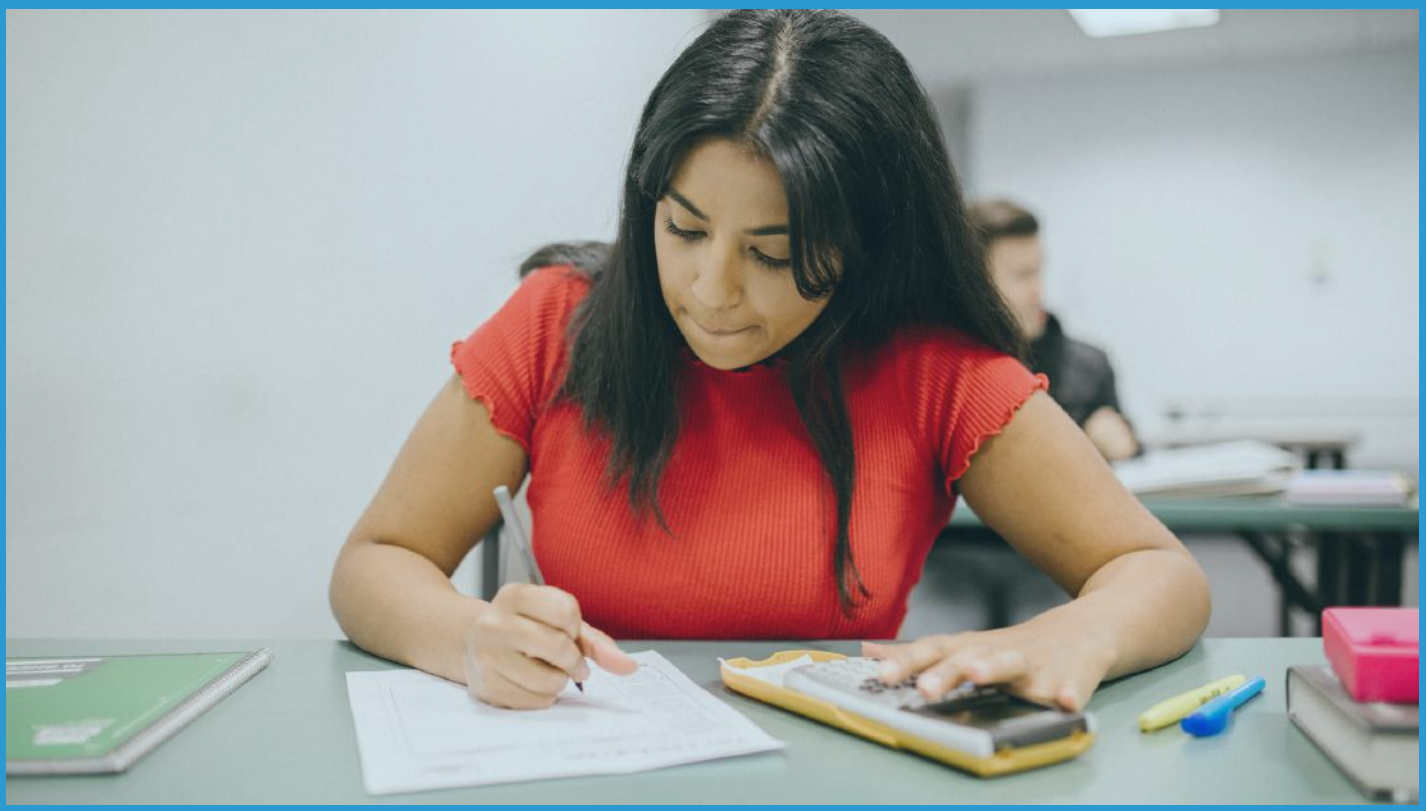
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Notations :

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 $y''+k^2y=0,\ y(0)=y(\pi)=0,\ k\neq 0$ 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. $f(x)=\begin{cases}2e^{-2x}, & x>0\\ 0, & x\le 0\end{cases}$.

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. ✔ $0 \le a \le \frac{1}{4}$

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 $f_i^{id} = f_i x_i$ 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. ✖ $1\ m^2/s$

2. ✖ $1\ ft^2/s$

3. ✔ $1\ cm^2/s$

4. ✖ $1\ mm^2/s$

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 clasifiers

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. ✖

$\frac{mL}{G}$

4. ✖ $\frac{LG}{m}$

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 → 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. ✔ Autocatlytic 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

Mcleoid 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 2^{nd} 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 2^{nd} 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.

✖ Smith Predictor

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. ✖ depriciation

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. ✖ $H_2S_2O_6$

4. ✔ $H_2S_2O_7$

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.

✖ isoproponol

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 digestor 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. ✖ phospatic fertilizer