

# Telangana State Council Higher Education

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 : 2022-08-04 14:1 6:30

Subject Name : 120

Creation Date : 120

Duration : 120

Total Marks : Yes

Display Marks: None

Calculator : No

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? No

Change Font Color : Yes

Change Background Color : No

Change Theme : No

Help Button : No

Show Reports : No

Show Progress Bar : No

Chemical Engineering 4th Aug 2022 No

Shift 1 No

Chemical Engineering No

## Chemical Engineering

Group Number :

Group Id : 34058050

Group Maximum Duration :

Group Minimum Duration : 120

Show Attended Group? : No

Edit Attended Group? : No  
Break time :  
Group Marks : 120  
Is this Group for Examiner? : No  
Examiner permission : Cant View  
Show Progress Bar? : No

## Mathematics

Section Id : 34058092  
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 Yes  
Clear Response :  
Maximum Instruction Time :  
Sub-Section Number : 1  
Sub-Section Id : 34058092  
Question Shuffling Allowed : Yes

Question Number : 1 Question Id : 3405805881 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 vector  $(-1, -5, 5), (4, 7, k), (-2, 3, 1)$  are linearly dependent for  $k=$

Options :

34058023521. 10

34058023522. I

✖ -10 34058023523.

34058023524. 8 -11

Question Number : 2 Question Id : 3405805882 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 of the system  $x + y - z = -3$ ,  $2x - y + z = 0$ ,  $x - 2y + 2z = 3$  is

Options :

34058023525. 8 1

34058023526. 2

34058023527. 3

34058023528. 00

Question Number : 3 Question Id : 3405805883 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

\_\_\_\_\_ cosec z dz =  
121=2

Options :

34058023529.

34058023530. 8 2

34058023531. 3

34058023532. 4

Question Number : 4 Question Id : 3405805884 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 particular integral of  $y'' + y = \cos 2x$  is

Options :

$$\frac{1}{3} \cos 2x$$

34058023533. 8 3

$$\frac{1}{3} \sin 2x$$

34058023534.

$$-\frac{1}{2x^3} \cos$$

34058023535.

34058023536.

$$\frac{1}{3} \sin 2x$$

Question Number : 5 Question Id : 3405805885 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 curve of  $Y' - y = 0$ ,  $y(0) = -1$ ,  $y(0) = 1$  passing through the point  $(0, 1)$  is

Options :

$$= e^x$$

34058023537. Y

34058023538. ✘  $y = -e^{-2x}$

34058023539. ✘  $y = e^{-2x}$

34058023540. ✔  $y = -e^{-x}$

Question Number : 6 Question Id : 3405805886 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  $\text{div}(x + ye^x, x \cos y^2)$  is  $axy \sin(y) - He^x y + 1$  then a —

Options :

34058023541. 8 2

34058023542.

34058023543. —1

34058023544. 8 0

Question Number : 7 Question Id : 3405805887 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

22

If  $\int (y \cos x + xy) dy dx = k (2\sin(2) - 2\sin(1) + 3)$  then  $k =$

1 1

Options :

34058023545. 8 1

1

34058023546. 8 2

3

34058023547.

1

34058023548. 2

Question Number : 8 Question Id : 3405805888 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 random variable X has the following probability distribution, then its mean  
is

x		4	9	16
	c			

Options :

34058023549. 5

34058023550. e 10

34058023551. 15

34058023552. 8 20

Question Number : 9 Question Id : 3405805889 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

Two numbers are chosen at random from the set {1, 2, 3, 4, 5, 6}. Then the probability that the numbers result in consecutive integers is

Options :

5

34058023553. 36

10

s, 36 34058023554.

15

34058023555. ' 6

16

34058023556. s: 36

Question Number : 10 Question Id : 3405805890 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

Solving the equation  $x^2 - 2 = 0$  using the secant method, then from the iteration formula we have

$$(x_n - x_{n-1}) \left( \frac{x_n^2 - 2}{x_n - x_{n-1}} - \frac{x_{n-1}^2 - 2}{x_{n-1} - x_{n-2}} \right) k_n, \text{ where } k_n =$$

Options :

4 - 2

34058023557.

$$2^{n-1} - x^4$$

34058023558.

34058023559. 8  $x^4 - 2$

2\_ 4.

34058023560.

## Chemical Engineering

Section Id : 34058093  
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  
Yes  
Clear Response :  
Maximum Instruction Time : 0  
Sub-Section Number : 1  
Sub-Section Id : 34058093  
Question Shuffling Allowed : Yes  
Question Number : 11 Question Id : 3405805891 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

IMlic11 of the following remains constant in the steady state system

Options :

34058023561. Mass

34058023562. Energy



Momentum

34058023563.

34058023564. Density

Question Number : 12 Question Id : 3405805892 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 a 2-stage process  $Q_1 = 5 \text{ J}$ ,  $Q = 10 \text{ J}$ , if the change in internal energy in first

stage is  $10 \text{ J}$  and the total change in internal energy is  $20 \text{ J}$ , what is the work

to be done in second stage

Options :

34058023565. 0

34058023566. 5J

34058023567. 10J

34058023568. 5J

Question Number : 13 Question Id : 3405805893 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 a chemical process of two reactants A (200 kg) and B (200 kg) is used as reactants.

If conversion is 50% and A and B reacts in equal proportion then calculate the weight

of the product formed

Options :

34058023569. ✖ 150kg

200 kg  34058023570.

✖ 250 kg

34058023571 ,

34058023572. 8 400 kg

Question Number : 14 Question Id : 3405805894 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 can change if only the catalyst is changed for a reaction system

Options :

34058023573. s: Enthalpy of reaction

34058023574.  Activation energy

34058023575. ✖ Free energy of the reaction

34058023576. 8 Equilibrium constant

Question Number : 15 Question Id : 3405805895 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 largest unit of Energy is

Options :

34058023577.  Electron volt

Joule

34058023578.

Calorie

34058023579.

34058023580.  8 g

Question Number : 16 Question Id : 3405805896 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 Vander Waals equation of state is  $(p + \frac{a}{v^2})(v - b) = RT$ , where  $p$  is pressure,  $v$  is specific volume,  $T$  is temperature and  $R$  is characteristic gas constant. The SI unit of  $a$  is

Options :

34058023581.  8 J/kg. K

34058023582.  8 m<sup>3</sup>/kg

34058023583.  m<sup>5</sup>/kgs<sup>2</sup>

34058023584.  8 Pa/kg

Question Number : 17 Question Id : 3405805897 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 gas with constant properties undergoing a quasi-static process, which one of the following represents the change of entropy ( $\Delta s$ ) from state 1 to 2

Options :

$$\Delta s = c_p \ln \frac{P_2}{P_1} - R \ln \frac{V_2}{V_1}$$

34058023585.

$$\Delta s = c_v \ln \left( \frac{V_2}{V_1} \right) - C_p \ln \left( \frac{V_2}{V_1} \right)$$

34058023586.

$$\Delta s = C_p \ln \frac{P_2}{P_1} - c_v \ln \frac{V_2}{V_1}$$

34058023587.

$$\Delta s = c_v \ln \left( e + R \ln \left( \frac{V_1}{V_2} \right) \right)$$

34058023588. s:

Question Number : 18 Question Id : 3405805898 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 combination of the following statements is correct

P: A gas cools upon expansion only when its Joule-Thomson coefficient is positive in the temperature range of expansion.

Q: For a system undergoing a process, its entropy remains constant only when the process is reversible.

R: The work done by a closed system in an adiabatic process is a point function.

S: A liquid expands upon freezing when the slope of its fusion curve on Pressure-Temperature diagram is negative.

Options :

P, R and S

34058023589.

P and Q

34058023590. 8

Q, R and S ✖ 34058023591.

✖ P, Q, and R

34058023592.

Question Number : 19 Question Id : 3405805899 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 balloon containing an ideal gas is initially kept in an evacuated and insulated room. The balloon ruptures and the gas fills up the entire room. Which one of the

following statements is TRUE at the end of above process

Options :

The internal energy of the gas decreases from its initial value, but the enthalpy

34058023593. 8 remains constant

The internal energy of the gas increases from its initial value, but the enthalpy

34058023594. remains constant

34058023595. 8 Both internal energy and enthalpy of the gas increase

34058023596. Both internal energy and enthalpy of the gas remain constant

Question Number : 20 Question Id : 3405805900 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 degrees of freedom for a mixture of ice and water (liquid) are

Options :

34058023597. 2

34058023598. 3

34058023599. 1

34058023600. 0

Question Number : Question Id : 3405805901 Question Type : MCQ Option Shuffling :  
Yes

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

21

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

Correct Marks : 1 Wrong Marks :

0 Ideal gas law is applicable at

Options :

34058023601 , 8 Low T, low P

34058023602. ✖ High T, high P

34058023603. Low T, high P

34058023604. High T, low P

Question Number : 22 Question Id : 3405805902 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 equilibrium the total Gibb's free energy for all phases is

Options :

Mimum

34058023605.

Question Number : Question Id : 3405805901 Question Type : MCQ Option Shuffling :  
Yes

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

8 Maximum

34058023606.

34058023607. Infinity

34058023608. 8 Zero

23

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

Correct Marks : 1 Wrong Marks : 0

What is the equilibrium constant for a reaction that has a value of  $\Delta G^\circ = -41.8 \text{ W}$

Options :

34058023609. 8 1.01

5

34058023610.  $7.1 \times 10$

34058023611. -5.87

$1.4 \times 10^6$

34058023612.



Question Number : Question Id : 3405805901 Question Type : MCQ Option Shuffling : Yes

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

Question Number : 24 Question Id : 3405805904 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

Rain drops are spherical because of

Options :

34058023613. 8 Viscosity

34058023614.  $\mu$  resistance

34058023615.  $\sigma$  Surface tension forces

34058023616.  $p$  Atmospheric pressure

25

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

Correct Marks : 1 Wrong Marks : 0

111 a stream line steady flow, two points A and B on a stream line are 1 m apart and

the flow velocity varies uniformly from 2 m/s to 5 m/s. The acceleration of fluid at

B is

Options :

Question Number : Question Id : 3405805901 Question Type : MCQ Option Shuffling :  
Yes

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

Response Time

34058023617. ✖ 3 m/s

2

6 m/s 34058023618.

2

9 mis

34058023619.

2

15 m/s

34058023620.

Question Number : 26 Question Id : 3405805906 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 shear-thinning fluid

Options :

34058023621. ✖ Bingham plastic

34058023622. ✖ Rheopectic

Question Number : Question Id : 3405805901 Question Type : MCQ Option Shuffling :  
Yes

Display Question Number : Yes IS Question Mandatory : No Calculator : None

Response Time

34058023623.8 Dilatant

34058023624. Pseudoplastic

Question Number : 27 Question Id : 3405805907 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 ~~dimensionless~~ numbers identifies the compressibility of effect of  
fluid

Options :

Euler number

34058023625.

Froude number

34058023626.

34058023627. Mach number

Weber number

34058023628.

Question Number : 28 Question Id : 3405805908 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 velocity of pressure wave generated is 2 m/s, the value of critical time is

Options :

2s

34058023629. 8

✘ 4s

34058023630.

34058023631. Is

34058023632. 0.5s

Question Number : 29 Question Id : 3405805909 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

Two pipe lines of equal length and diameters of 10 cm and 40 cm are connected in parallel between two reservoirs. If friction factor  $f$  is same for both the pipes, the ratio of the discharges in the larger to the smaller pipe is

Options :

34058023633.

34058023634. 16

34058023635.  $e^{-32}$

34058023636. 8/64

Question Number : 30 Question Id : 3405805910 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 boundary layer is formed as the flowing fluid comes in contact with the solid surface, because of the action of

Options :

Surface tension

34058023637.

34058023638. Forces of adhesion

34058023639. Force of gravity acting on the fluid

34058023640. ✓ Viscosity of the fluid

Question Number : 31 Question Id : 3405805911 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 pressure drop in fluidized bed on fluidization with increasing flow rate

Options :

34058023641. Remains same

Linearly increases

34058023642. 8

Linearly decreases

34058023643. ✖

Remains zero

34058023644.

Question Number : 32 Question Id : 3405805912 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

III \_\_\_\_\_ method, size separation is based on low density of fine particles and high density of the coarse particles

Options :

34058023645. 8 Air separator

34058023646. 8 Seiving

34058023647. ✖ Cyclone separator

Elutiation

34058023648.

Question Number : 33 Question Id : 3405805913 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

"Number of sieves" indicates

Options :

34058023649. 8 Distance between the wires

Specific diameter of ttle wire

34058023650. 8

Number of meshes

34058023651.

Area of the meshes

34058023652.

Question Number : 34 Question Id : 3405805914 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 method cannot be used to determine the particle size

Options :

34058023653. ✓ Sieve analysis

34058023654. s, Optical microscopy

34058023655. SEM

34058023656. s, TEM

Question Number : 35 Question Id : 3405805915 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 particle size distribution curves are extremely useful for the classification of

Options :

34058023657. s: Fine grained soils

34058023658. Coarse grained soils

✘ Both coarse grained and fine grained soils

34058023659.

34058023660. Silts and clays

Question Number : 36 Question Id : 3405805916 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 which type of settling, settling of particles takes place by the contact of impurities with each other present in wastewater

Options :

34058023661.  Flocculent settling

Hindered settling  
34058023662.

34058023663.  Compression settling

34058023664.  Discrete settling

Question Number : 37 Question Id : 3405805917 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

Pick out the correct statement

Options :

34058023665. Human blood is a Newtonian fluid

A Newtonian fluid obeys Newton's law of cooling  
34058023666.

For a non-Newtonian fluid, a straight line passes through the origin in a plot between shear stress and shear gradient

34058023667. 8

34058023668. ✖ Thin lubricating oil is an example of a non-Newtonian fluid

Question Number : 38 Question Id : 3405805918 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

Operatmg principle of cyclone separator is based on the action of

\_\_\_\_\_dust palticles

Options :

34058023669. s: Diffusion of

34058023670. ✔ Centrifugal force on

34058023671. Gravitational force on

34058023672. ✖ Electrostatic force on

Question Number : 39 Question Id : 3405805919 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

Power consumption of agitators is a function of

Options :

34058023673. 8 Impeller used

34058023674. 8 Volumetric flow rate

34058023675. Volumetric flow rate and Kinetic Energy

34058023676. ✖ Kinetic energy

Question Number : 40 Question Id : 3405805920 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 principle of mixing is\_\_\_\_\_

Options :

Sliear force

34058023677.

Papendicular force 34058023678. 8

Gravitational force

34058023679.

✖ Centrifugal force

34058023680.

Question Number : 41 Question Id : 3405805921 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 not categorized as a "mechanical operation"

Options :

34058023681. 8 Agitation

Filtration

34058023682.

34058023683. 8 Size enlargement

34058023684. Humidification

Question Number : 42 Question Id : 3405805922 Question Type : MCQ Option Shuffling :  
Yes

Question Number :

:

Display 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 grinding of cereals, grains, spices, pigments, saw dust, cork etc., the most extensively used size reduction equipment is a

Options :

Buhrstone mill

34058023685.

✘ Ball mill

34058023686.

34058023687. ✘ Crushing rolls

34058023688. s: Hammer mill

Question Number : 43 Question Id : 3405805923 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

Diamond is an example of \_\_\_\_\_

Options :

34058023689. 8 Solid with 11 Hydrogen bonding

Electrovalent solid

34058023690.

Question Number : Question Id : 3405805926 Question Type : MCQ Option Shuffling :

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

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

Correct Marks : 1 Wrong Marks : 0

Covalent solid

34058023691.

34058023692. 8 Glass

Question Number : 44

:

Display Question

: N.A Think Time : N.A

Correct Marks : 1 Wrong

Solid carbon dioxide is an example of

\_\_\_\_\_

Options :

34058023693. s: Metallic crystal

34058023694. 8 Covalent crystal

Ionic Crystal

34058023695. 8

Molecular crystal

34058023696.

Question Id : 3405805924 Question Type MCQ Option Shuffling :  
Yes

Number : Yes IS Question Mandatory : No Calculator : None  
Response Time

Minimum Instruction Time : 0

Marks : 0

Question Number : 45 Question Id : 3405805925 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

With the increase in temperature, the total emissivity of conductors

Options :

Increases

34058023697.

Decreases

34058023698.

Remains same

34058023699.

✘ Decreases linearly

34058023700.

46

N.A

Question Number : Question Id : 3405805926 Question Type : MCQ Option Shuffling :

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

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

Correct Marks : 1 Wrong Marks : 0

Heat transfer by conduction in the turbulent core of a fluid flowing through a heated pipe  
is negligible, if the value of Prandtl number is

Options :

34058023701.  0.2

0.4

34058023702.

34058023703.  0.6

34058023704.  0.8

Question Number : 47 Question Id : 3405805927 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 natural convection heat transfer, the correlating parameter is the

Options :

Graetz number

34058023705.



Question Id

:

3405805924

Question

Type MCQ

Option

Shuffling :

Yes

Number : Yes IS

Question

Mandatory :

No Calculator :

None Response

Time

Minimum

Instruction

Time : 0

Marks :

0

Eckert ✖ number

34058023706.

Grashoff

number 34058023707.

Bond number

34058023708.

Question Number : Question Id : 3405805926 Question Type : MCQ Option Shuffling :

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

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

Correct Marks : 1 Wrong Marks : 0

48

N.A

In Fourier's law, the proportionality constant is called the

Options :

1--heat transfer co-efficient

34058023709.

34058023710. ✖ Thermal diffusivity

34058023711. ✔ Thermal conductivity

Stefan-Boltzman constant

34058023712. 8

Question Number : 49 Question Id : 3405805929 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 maximum thermal conductivity

Options :

34058023713. Iron

34058023716. 8

Coal

34058023714. ✖

34058023715. ✖ Nitrogen

Tar

50

N.A

In a heat exchanger, it is observed that  $AT_1 = AT_2$  where  $AT_1$  is the temperature difference between the two single phase fluid streams at one end and  $AT_2$  is the temperature difference at the other end. This heat exchanger is

Options :

A condenser

34058023717. 8

34058023718. ✖ An evaporator

34058023719. ✓ A counter flow heat exchanger

34058023720. s: A parallel flow heat exchanger

Question Number : 51 Question Id : 3405805931 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

Grashofnumber signifies the ratio of

34058023716. 8

Question Number : Question Id : 3405805926 Question Type : MCQ Option Shuffling :

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

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

Correct Marks : 1 Wrong Marks : 0

Options :

34058023721 ✖ Inertia force to viscous force

34058023722. ✓ Buoyancy force to viscous force

Buoyancy force to inertia force

34058023724. Inertia force to surface tension force

Question Number : 52 Question Id : 3405805932 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

Ratio of inertial to viscous forces is known as \_\_\_\_\_

Options :

34058023725. 8 Stanton number

Prandtl number

34058023726. 8

34058023727. ✖ Rayleigh number

34058023728. ✓ Reynolds number

34058023716. 8

Question Number : 53 Question Id : 3405805933 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 takes place according to which law

Options :

34058023729. s: Newton's law of cooling

34058023730. Second law of thermodynamics

Newton's second law of motion

34058023716. 8

34058023732.

### First law of thenodynamics

Question Number : 54 Question Id : 3405805934 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 Reynold's number is 24000 and the Prandtl number is 4.70. Then wllat is  
the value of Nusselt number

Options :

34058023733. ✓ 164.8

34058023734. 164.0

34058023735. 8 163.8

34058023736. 8 165.2

Question Number : 55 Question Id : 3405805935 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 modes of heat transfer in evaporators are \_\_\_\_\_

Options :

Conduction and convection

34058023737.

8 Conduction and radiation

34058023738.

34058023739. 8 Radiation and convection

34058023740. ✖ Conduction, convection and radiation

Question Number : 56 Question Id : 3405805936 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

NMIat are the factors to be considered for designing a heat exchanger

Options :

34058023741. ✖ Thennal analysis

34058023742. 8 Hydraulic calculations

34058023743. 8 Pressure calculations

Thennal analysis and hydraulic calculations

34058023744.

Question Number : 57 Question Id : 3405805937 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

Two balls of same material and finish have their diameters 111 the ratio of 2: 1 and

both are heated to same temperature and allowed to cool by radiation. Rate of cooling

by big ball as compared to smaller one will be in the ratio of

Options :

34058023745. 8 1 1

34058023746. .

34058023732.

.

34058023748.

Question Number : 58 Question Id : 3405805938 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

According to Stefan-Boltzman law, the total radiation from a black body per second per area is directly proportional to the

Options :

Absolute temperature

34058023749.

Square of the absolute temperature

34058023750.

34058023751.  8 Cube of the absolute temperature

34058023752.  Fourth power of the absolute temperature

Question Number : 59 Question Id : 3405805939 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 what kind of mixtures  $DAB = DBA$  holds

Options :

34058023753. Ideal



34058023754. Real

34058023755. 8 For both real and ideal

This relation is never true

34058023756. 8

Question Number : 60 Question Id : 3405805940 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

Fick's law is given by the formula

Options :

34058023757.  $N_b = -D \frac{dC_b}{dx}$

$$N_b = -2D \frac{dC_b}{dx} \quad 34058023758.$$

$$N_b = -3D \frac{dC_b}{dx} \quad 34058023759.$$

34058023760.  $N_b = -4D \frac{dC_b}{dx}$

Question Number : 61 Question Id : 3405805941 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 dimension of diffusion coefficient is given by

Options :

34058023761. ML

34058023732.

$L^2 T^{-1}$

34058023763.

$M L^{-2} T$

34058023764.

Question Number : 62 Question Id : 3405805942 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 industries titanium is hardened through diffusion of carbon. The concentration of carbon at 1mm into the surface of the titanium slab is  $0.25 \text{ kg/m}^3$  and at 3mm the concentration is  $0.68 \text{ kg/m}^3$ . The rate at which carbon is entering into its surface is  $1.27 \times 10^{-10} \text{ kg/m}^2 \cdot \text{s}$ . Calculate the value of diffusion coefficient of carbon

Options :

$5.91 \times 10^{12}$

34058023765.

$5.91 \times 10^{-10}$

34058023766.

$5.91 \times 10^{11}$

34058023767.

$5.91 \times 10^{-13}$

34058023768. 8

Question Number : 63 Question Id : 3405805943 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 moisture inside the substance is known as \_\_\_\_\_

Options :

Bound moisture

34058023769.

Unbound moisture

34058023770. 8

Equilibrium moisture

34058023771. ✖

Free moisture

34058023772.

Question Number : 64 Question Id : 3405805944 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

Langmuir equation is associated with

Options :

34058023773. ✖ Leaching

Adsorption

34058023774.

Steam distillation

34058023775. 8

✖ Multicomponent absorption

34058023776.

34058023732.

Question Number : 65 Question Id : 3405805945 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

How will you separate o-Xylene and m-Xylene products of the same compounds

Options :

34058023777. Crystallization

Distillation

34058023778. 8

Polymer membrane

34058023779.

34058023780. ✖ Electrophoresis

Question Number : 66 Question Id : 3405805946 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 removal of one log unit corresponds with

Options :

34058023781.

34058023782.

34058023783M /0

99%

34058023784.

Question Number : 67 Question Id : 3405805947 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

Membrane filtration can be divided into two categories based on

Options :

34058023785. The length of the membrane

The diameter of the membrane

34058023786. 8

The amount of membranes

34058023787. 8

The pore sizes in the membrane

34058023788.

Question Number : 68 Question Id : 3405805948 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 minimum energy required by the reactants to affect the product formation is termed as

Options :

34058023789. ✖ Threshold energy

✖ Potential energy

34058023790.

Activation energy

34058023791.

✖ Kinetic energy

34058023792.

Question Number : 69 Question Id : 3405805949 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 decomposition of phosphine (PH<sub>3</sub>) on mngsten at low pressure is a first order reaction.

It is because the

Options :

Rate is proponional to the sulface

34058023793. s: coverage

✘ Rate is Inversely proportional to the sulface coverage

34058023794.

Rate is independent of the sulface coverage

34058023795.

✘ Rate of decomposition is slow

34058023796.

Question Number : 70 Question Id : 3405805950 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 addition of a catalyst (luting a chemical reaction alters which of the following  
quantities

Options :

34058023797. 8 Enthalpy

34058023798. Activation energy

34058023799. ✖ Entropy

34058023800. 8 Internal energy

Question Number : 71 Question Id : 3405805951 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 constant of a reaction is  $5.8 \times 10^{-7} \text{ s}^{-1}$ . The order of the reaction is

Options :

34058023801. First order

Zero order

34058023802.

Second order

34058023803.

Third order

34058023804. 8

Question Number : 72 Question Id : 3405805952 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

Pick out the correct statement

Options :

A chemical reaction accompanied by absorption of heat is called an exothermic

34058023805. 8 reaction

A chemical reaction accompanied by an evolution of heat is called an endothermic

34058023806. ✖ reaction



The rate constant for a first order reaction does not change on changing the

34058023807. concentration units

34058023808. ✖ Chemical equilibrium state is dynamic in nature

Question Number : 73 Question Id : 3405805953 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 statements regarding the use of catalysts is false

Options :

34058023809. Catalysts lower the activation energy for a reaction

Catalysts increase the proportion of molecules that possess sufficient energy to

34058023810. Catalysts clear the activation energy barrier

Catalysts increase the number of reactions that can happen spontaneously

34058023811.

34058023812. Catalysts provide an alternative reaction pathway from reactant to product

Question Number : 74 Question Id : 3405805954 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 activity of a catalyst at a time  $t = 0$  is \_\_\_\_\_

Options :

Negative

34058023813.

34058023814. 8 Zero

34058023815. Unity

34058023816. 8 Infinity

Question Number : 75 Question Id : 3405805955 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 of first order takes 10 minutes to achieve 50% conversion. The

conversion achieved after 20 minutes is

Options :

0.5

34058023817. 8

0.75

34058023818.

0.87

34058023819.

34058023820. 8 0.9

Question Number : 76 Question Id : 3405805956 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 homogeneous reaction is a function of

Options :

34058023821. Temperature, pressure, and composition

34058023822. 8 Temperature and composition only

34058023823. 8 Temperature and pressure only

34058023824. ✖ Pressure and composition only

Question Number : 77 Question Id : 3405805957 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

Half-life period of decomposition of a liquid 'A' by irreversible first-order

reaction is 12 minutes. The time required for 75% conversion of 'A' is minutes

---

Options :

12

34058023825.

34058023826. 6

34058023827. 18

24

34058023828.

Question Number : 78 Question Id : 3405805958 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 standard for long-distance analog signal transmission in process control industry is

Options :

34058023829.  4-20 mV

0-20 mA

34058023830.  8

4-20 mA 34058023831.

34058023832.  0-5 V

Question Number : 79 Question Id : 3405805959 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

Smallest change which a sensor can detect is \_\_\_\_\_

Options :

Resolution

34058023833.

34058023834. Accuracy

Precision

34058023835.

34058023836.  8 Scale

Question Number : 80 Question Id : 3405805960 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 transducer is known as a 'self-generating transducer'

Options :

Active transducer

34058023837.

Passive transducer

34058023838. 8

✘ Secondary transducer

34058023839.

Analog ✘ transducer 34058023840.

Question Number : 81 Question Id : 3405805961 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

$\frac{1-s}{s}$

A system has the transfer function It is a

Options :

34058023841. Non-minimum phase system

✘ Minimum phase system

34058023842.

Low pass system

34058023843.

✖ Second order system

34058023844.

Question Number : 82 Question Id : 3405805962 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 transfer function does NOT contain which of the following types of terms

Options :

34058023845. ✔ Simple conjugate poles

34058023846. 8 Real poles

34058023847. 8 Complex conjugate zeros

34058023848. ✖ Poles or zeros at origin

Question Number : 83 Question Id : 3405805963 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 will be the controller output for PD controller at  $t = 2s$ , if the error begins to  
change from 0 at the rate of 1.2% /s? The given parameters are  $P_o = 50\%$ ,  $K_P = 4$ ,  
and  $K_D = 0.4$

Options :

34058023849. ✖ 51.52%

51.92%

34058023850.

61.52%

34058023851.

34058023852. 61.92%

Question Number : 84 Question Id : 3405805964 Question Type : MCQ Option Shuffling :  
Yes

Question Number :

:

Display 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

PID controllers are tuned on the frequency response of the closed - loop system by

Options :

Using the open-loop gain corresponding to marginal stability

34058023853.

Using the maximum amplitude of response

34058023854.

Using maximum value of phase

34058023855.

Using minimum value of phase

34058023856.

Question Number : 85 Question Id : 3405805965 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

Lag-lead compensation is a

Options :

Increases bandwidth

34058023857.

Attenuation

34058023858. 8



Question Number :

:

Increases damping factor

34058023859.

Second order

34058023860.

86 Question Id : 3405805966 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 :

The Bode diagram describes

Options :

34058023861.  Gain and phase shift through the usable frequency range

34058023862.  The system's linearity

The reaction to a step change

34058023863.

34058023864.  s: recove1Y curve that will result from a load change

The

Question Number : 87 Question Id : 3405805967 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

Question Number :

:

If a closed-loop control system is adjusted to produce a 0.25 damping ratio when subjected to a step change, the system gain is

Options :

0.1

34058023865.

34058023866. 8 0.25

34058023867. co.5

34058023868. 1 0

88 Question Id : 3405805968 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 most dramatic application of feed forward techniques has occurred in their application to

Options :

34058023869. s: Heat exchangers

34058023870. ✖ Level processes

34058023871. ✖ Flow processes

Distillation columns

34058023872.

Question Number :

:

Question Number : 89 Question Id : 3405805969 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

Pick out the correct statement

Options :

34058023873. Jet engine can work, where there is no atmosphere

34058023874. Rocket engines cannot work, where there is no atmosphere

Rocket engines carry oxygen required for the combustion in the form of  
oxidiser

34058023875.

34058023876.

Jet engines also can oxidiser



Question Number : 90 Question Id : 3405805970 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

PID controller is also known as

Options :

Three term controller

34058023877.

34058023878. Proportional controller

Two term controller 34058023879. s:

Four term controller

34058023880.

Question Number : 91 Question Id : 3405805971 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

Proportional band of a controller is expressed as

Options :

Gain

34058023881. 8

Ratio

34058023876.  
34058023882. 8

Percentage

34058023883.

✖ Range of control variables

Question Number : 92 Question Id : 3405805972 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 sale contract signed by a chemical manufacture is expected to generate a net cash  
flow of Rs 4.00,000 per year at the end of each year for a period of three years. The  
applicable discount rate is 15%. The net present worth of the total cash flow is

Options :

34058023885. Rs. 106700

Rs. 913290

34058023886.

Rs. 165600

34058023887.

8

34058023888. Rs. 903290

34058023876.

Question Number : 93 Question Id : 3405805973 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 :

34058023889. 8 Utilities plants

34058023890. Maintenance and repair inventory

✖ Process equipment

Depreciation

34058023892.

Question Number : 94 Question Id : 3405805974 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 :

34058023893. 8 End of the project life

34058023894. Break-even point

Stan-up

34058023895.

34058023896. ✖ End of the design stage

34058023876.

Question Number : 95 Question Id : 3405805975 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 periodic type heat exchanger is known as \_\_\_\_\_

Options :

34058023897.  Direct contact heat exchanger

Indirect contact heat exchanger

34058023899.  Recuperator

34058023900.  Regenerator

Question Number : 96 Question Id : 3405805976 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 not a typical cash flow related to equipment purchase and

replacement decisions

Options :

34058023901.  Increased operating costs

Overhaul of equipment

34058023902.  8

Salvage value of equipment when project is complete

34058023903.  8

34058023876.

Depreciation expense

34058023904.

Question Number : 97 Question Id : 3405805977 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 non-cash expense

Options :



34058023905. ✓ Depreciation

✖ Patent light

34058023906.

Copyright ✖  
34058023907.

✖ Royalty

34058023908.

Question Number : 98 Question Id : 3405805978 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 method of depreciation is suggested for coal mines

Options :

Diminishing balance

34058023909. 8

Fixed Instalment method

34058023910. 8

✖ Sum of year's digit method

34058023911.

D

34058023912. ✓ epletion method

Question Number : 99 Question Id : 3405805979 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 cash flows method, utilized by the internal rate of return and net present value method are

Options :

34058023913. s: Future cash flows

34058023914. Lean cash flows

34058023915. Discounted cash flows

34058023916. ❌ Vertical cash flows

Question Number : 100 Question Id : 3405805980 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 market risk premium is 8% and the risk-free return is 7%, then the market required return would be

Options :

34058023917. 0.15

34058023918. 0.01

56

34058023919.

0.01142

34058023920.

Question Number : 101 Question Id : 3405805981 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 relationship is not correct in case of a chemical process plant

Options :

Manufacturing cost = direct product cost + fixed charges + plant overhead costs

34058023921.

✘ General expenses = administrative expenses + distribution & marketing expenses

34058023922.

Total product cost = manufacturing cost + general expenses

34058023923. 8

Total product cost = direct production cost + plant overhead cost

34058023924.

Question Number : 102 Question Id : 3405805982 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 machine has an initial value of Rs. 5000, service life of 5 years and final salvage value of Rs. 1000. The annual depreciation cost by straight line method is Rs.

Options : a, 300

34058023925.

34058023926. 2 600

800

34058023927.

1000

34058023928.

Question Number : 103 Question Id : 3405805983 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 total Investment in a project is Rs. 10 lakhs and the annual profit is 1.5 lakhs.

If the project life is 10 years, then the simple rate of return on Investment is

Options :

34058023929.

34058023930.

1.5%

34058023931.

150%

34058023932.

Question Number : 104 Question Id : 3405805984 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

Effluent treatment cost in a chemical plant is categorised as the\_\_\_\_\_cost

Options :

34058023933. Fixed

Utilities

34058023934.

✘ Overhead

34058023935.

34058023936. s: Capital

Question Number : 105 Question Id : 3405805985 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

An investment of Rs. 100 lakhs are to be made for construction of a plant, which will take two years to start production. The annual profit from the operation of the plant is Rs. 20 lakhs. What will be the payback time

Options :

34058023937. 5 years

7 years

34058023938.

10 years

34058023939. s:

12 years

34058023940. 8

Question Number : 106 Question Id : 3405805986 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

Liquid ammonia is not used as such a fertilizer in tropical countries like India, because

Options :

34058023941. Its N<sub>2</sub> content is very low

34058023942. It is very costly.

It will evaporate on spraying

34058023943.

It is not available

34058023944.

Question Number : 107 Question Id : 3405805987 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 can be used as an explosive and a fertilizer

Options :

34058023945. Ammonium Carbamate

34058023946. Urea

Ammonium Chloride

34058023947.

Ammonium Nitrate

34058023948.

Question Number : 108 Question Id : 3405805988 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 three major components that are necessary in a fertilizer are

Options :

34058023949.  Na, K, S

34058023950.  N, P, S

34058023951.  N, Cl, K

34058023952.  N, P, K

Question Number : 109 Question Id : 3405805989 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 represented as

Options :

34058023953.  NH<sub>2</sub>.CO.NH<sub>2</sub>

34058023954.  NH<sub>3</sub>.CO.CH<sub>3</sub>

34058023955.  M{.CO<sub>2</sub>.NH

NH3.C02.NH3

34058023956. 8

Question Number : 110 Question Id : 3405805990 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 is the economical process for manufacture of phosphoric acid in India

Options :

Wet process by H<sub>2</sub>SO<sub>4</sub> leaching

34058023957.

34058023958. Wet process by HCl leaching

34058023959. 8 Electric furnace processes

34058023960. ✖ Blast furnace process

Question Number : 111 Question Id : 3405805991 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 basic raw materials needed for manufacture of sulphuric acid are

Options :

34058023961. Sulphur and pyrites

34058023962. Oxygen



✳ Hydrogen

34058023963.

Nitrogen

34058023964. 8

Question Number : 112 Question Id : 3405805992 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

\_\_\_\_\_ is not a major industrial chemical produced by chloro-alkali industry

Options :

Soda ash

34058023965. s:

Caustic soda

34058023966.

Chlorine

34058023967.

Ammonium carbonate

34058023968.

Question Number : 113 Question Id : 3405805993 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

Double Contact Double Absorption (DCDA) process is the latest process for the manufacture of

Options :

Nitric acid

34058023969.

Sulphuric acid

34058023970.

✖ Ammonium sulphate

34058023971.

✖ Hydrochloric acid

34058023972.

Question Number : 114 Question Id : 3405805994 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

India has no elemental Sulphur deposits that can be economically exploited. In India, which one of the following industries produces elemental Sulphur as a byproduct

Options :

34058023973. s: Coal carbonization plants

Petroleum refineries

34058023974.

Paper and pulp industries

34058023975.

Iron and steel making plants

34058023976.

Question Number : 115 Question Id : 3405805995 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

One of the steps during refining of cane sugar consists of addition of hydrated lime to the sugar syrup followed by carbonation of the resulting solution. The purpose of this step is to

Options :

34058023977. Adjust the pH of the syrup

34058023978. Remove the coloring matter from the syrup

34058023979.  Reduce the viscosity of the syrup

34058023980.  Improve the rate of crystallization of sugar

Question Number : 116 Question Id : 3405805996 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 not employed in the commercial production of linear polyvinyl chloride

Options :

34058023981.  Emulsion polymerization

34058023982.  Suspension polymerization

34058023983.  Addition polymerization

34058023984. s: Condensation polymelization

Question Number : 117 Question Id : 3405805997 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 boiling point of aviation turbine fuel is closest to that of

Options :

34058023985. 8 Lubricating oils

34058023986. LPG

34058023987. 8 Diesel

34058023988. Kerosene

Question Number : 118 Question Id : 3405805998 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 sequences is arranged according to increasing calorific value

Options :

Producer gas, Natural gas, Water gas

34058023989. 8

Natural gas, Producer gas, Water gas

34058023990.

Producer gas, Water gas, Natural gas  
34058023991.

Water gas, Natural gas, Producer gas  
34058023992.

Question Number : 119 Question Id : 3405805999 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

Hydrotreating is used for

Options :

Removal of water from crude oil  
34058023993. 8

Treatment of Crude oil with water  
34058023994.

Improving octane number of gasoline  
34058023995.

34058023996. ✓Removal of sulphur and nitrogen from petroleum fractions

Question Number : 120 Question Id : 3405806000 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 formula of the predominant chemical compound in commercial sugar is

Options :

C H O<sub>12</sub>

22 11 34058023997.

C H O

34058023998. 12 24 12

34058023999. 8 C<sub>6</sub>H<sub>10</sub>O<sub>5</sub>

C H O

34058024000. 8 6 12 6