

CPCB 2021

FINAL ANSWER KEY

Scientist B (CHEMICAL ENGINEERING)

Paper Code: SB - CHEM

Q. No.	Key	Q. No.	Key	Q. No.	Key	Q. No.	Key	Q. No.	Key	Q. No.	Key
01	B	12	A	23	B	34	C	45	B	56	A
02	B	13	A	24	D	35	A	46	C	57	B
03	C	14	A	25	B	36	B	47	B	58	C
04	B	15	B	26	C	37	D	48	B	59	C
05	A, C	16	A	27	A	38	C	49	A	60	A
06	B	17	A	28	B	39	B	50	D	61	A
07	A	18	B	29	D	40	MTA	51	D	62	C
08	B	19	D	30	D	41	D	52	B	63	B
09	B	20	C	31	C	42	B	53	A	64	B
10	C	21	B	32	D	43	A	54	A	65	B
11	D	22	A	33	C	44	D	55	A	66	D

CPCB 2021

Q. No.	Key	Q. No.	Key	Q. No.	Key	Q. No.	Key	Q. No.	Key	Q. No.	Key
67	C	78	D	89	B	100	A	111	C		
68	C	79	C	90	B	101	C	112	B		
69	A	80	B	91	B	102	A	113	A		
70	C	81	C	92	C	103	D	114	B		
71	C	82	A	93	A	104	C	115	C		
72	A	83	D	94	C	105	B	116	C		
73	B	84	C	95	A	106	B	117	B		
74	B	85	C	96	C	107	C	118	B		
75	B	86	A	97	B	108	A	119	A		
76	C	87	A	98	B	109	B	120	B		
77	B	88	C	99	B	110	C				

Note: **MTA** stands for **Marks To All**.

Question Paper

Question Paper Name :	Scientist B Chemical Engineering
Subject Name :	Scientist B Chemical Engineering
Creation Date :	2021-09-08 13:21:09
Duration :	120
Total Marks :	120
Display Marks:	Yes
Calculator :	Scientific
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? (SA type of questions will be always auto saved) :	No

Scientist B Chemical Engineering

Group Number :	1
Group Id :	267236128

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

Scientist B Chemical Engineering

Section Id :	267236256
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	120
Number of Questions to be attempted :	120
Section Marks :	120
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	267236374
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 2672369861 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Noise pollution has been inserted as pollution in the Air Act in:

(A) 1981

(B) 1987

(C) 1986

(D) 1974

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 2 Question Id : 2672369862 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The Water (Prevention and Control of Pollution) Act was enacted in the year:

(A) 1981

(B) 1974

(C) 1986

(D) 2000

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✖ D

Question Number : 3 Question Id : 2672369863 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

What is the most abundant greenhouse gas in the atmosphere?

- (A) Methane
- (B) Nitrogen dioxide
- (C) Water vapor
- (D) Carbon dioxide

Options :

- 1. ✔ A
- 2. ✖ B
- 3. ✖ C
- 4. ✖ D

Question Number : 4 Question Id : 2672369864 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which of the following is responsible for reducing global CFC production by half?

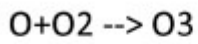
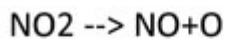
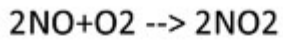
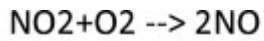
- (A) Copenhagen Protocol
- (B) Montreal Protocol
- (C) Kyoto Protocol
- (D) Convention on Long-Range Transboundary Air Pollution

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 5 Question Id : 2672369865 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25



The above reactions describe the chemical process that forms:

- (A) Photochemical smog
- (B) Acid precipitation
- (C) Ozone
- (D) Peroxyacetyl nitrate

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 6 Question Id : 2672369866 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

5th June is observed as

- (A) World forest day
- (B) World environment day
- (C) World wildlife day
- (D) World population day

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 7 Question Id : 2672369867 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which of the following types of electricity generation produces the least amount of greenhouse-gas emissions from cradle to grave?

- (A) Nuclear
- (B) Natural gas
- (C) Biomass
- (D) Oil

Options :

- 1. ✓ A
- 2. ✗ B

3. ✘ C

4. ✘ D

Question Number : 8 Question Id : 2672369868 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

In which of the following ecosystems do tree roots serve as important havens for biodiversity?

(A) Coral reefs

(B) Mangrove forests

(C) Estuaries

(D) Freshwater wetlands

Options :

1. ✔ A

2. ✘ B

3. ✘ C

4. ✘ D

Question Number : 9 Question Id : 2672369869 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The total salary of A, B, C is Rs. 444. If they spend 80%, 85%, 75% of their salaries, respectively, their savings are as 7 : 6 : 9. The salary of B is

(A) Rs. 140

(B) Rs. 160

(C) Rs. 144

(D) Rs. 156

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 10 Question Id : 2672369870 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

A sum of money invested at compound interest amounts to Rs. 650 at the end of first year and Rs. 676 at the end of second year. The sum of money is:

(A) Rs. 600

(B) Rs. 540

(C) Rs. 625

(D) Rs. 560

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 11 Question Id : 2672369871 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

What is the height of a solid cylinder of radius 5 cm and total surface area is 660 sqcm?

(A) 10 cm

(B) 12 cm

(C) 15 cm

(D) 16 cm

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 12 Question Id : 2672369872 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

In a test paper there are total 10 questions. In how many different ways can you choose 6 questions to answer?

- (A) 210
- (B) 540
- (C) 336
- (D) None of these

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 13 Question Id : 2672369873 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

A box contains 5 defective and 15 non-defective bulbs. Two bulbs are chosen at random. Find the probability that both the bulbs are non-defective.

- (A) $21/38$
- (B) $3/20$
- (C) $5/19$
- (D) None of these

Options :

- 1. ✓ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 14 Question Id : 2672369874 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The average rainfall in the months of January and February is 6 cm and in the months of March to June is 5 cm and July to October is 10 cm and, in the months of November and December, it is 6 cm. The average rainfall for the whole year is:

(A) 7

(B) 5.5

(C) 7.5

(D) None of these

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 15 Question Id : 2672369875 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The average age of all the 100 employees in an office is 29 years, where $\frac{2}{5}$ employees are ladies and the ratio of average age of men to women is 5 : 7. The average age of female employees is:

- (A) 18 years
- (B) 35 years
- (C) 25 years
- (D) 27 years

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 16 Question Id : 2672369876 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The Narendra Modi Stadium was previously known as

- (A) Motera Stadium
- (B) Ahmed Patel Stadium
- (C) Ahmedabad Stadium
- (D) Morar ji Stadium

Options :

- 1. ✓ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 17 Question Id : 2672369877 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Carbon dioxide constitutes about _____ percentage of the air?

(A) 0.03

(B) 0.3

(C) 3

(D) 30

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 18 Question Id : 2672369878 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

When India got independence, the Prime Minister of England was:

- (A) Winston Churchill
- (B) Clement R. Atlee
- (C) Neville Chamberlain
- (D) Harold Macmillan

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 19 Question Id : 2672369879 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Gandhiji's Champaran Movement was for:

- (A) The security of rights of Harijans
- (B) Maintaining the unity of Hindu Society
- (C) Civil Disobedience Movement
- (D) Solving the problem of the indigo workers

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C

4. ✖ D

Question Number : 20 Question Id : 2672369880 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

India liberated Goa from Portuguese in

(A) 1950

(B) 1965

(C) 1961

(D) 1947

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 21 Question Id : 2672369881 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Who among the following won the highest number of National film awards in acting?

(A) Amitabh Bachhan

(B) Shabana Azmi

(C) Satyajit Ray

(D) Kamal Haasan

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 22 Question Id : 2672369882 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which among the following is the largest Hindu temple in the world?

- (A) Angkorwat (Cambodia)
- (B) Akshardham (Delhi)
- (C) Belur Math (Howrah)
- (D) Brihadeshwar (Jhanjavar)

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 23 Question Id : 2672369883 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Tsunami is the result of?

(A) Shrining of Earth's crust

(B) Submarine Earthquakes

(C) Cyclones

(D) Tides

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 24 Question Id : 2672369884 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The instrument used for recording earthquake wavers is:

(A) Barograph

(B) Hydrograph

(C) Pantograph

(D) Seismograph

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✖ D

Question Number : 25 Question Id : 2672369885 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The Tropic of Cancer does not pass through:

- (A) Gujarat
- (B) Odisha
- (C) Tripura
- (D) West Bengal

Options :

- 1. ✔ A
- 2. ✖ B
- 3. ✖ C
- 4. ✖ D

Question Number : 26 Question Id : 2672369886 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Water stored in a dam possesses:

- (A) No energy
- (B) Kinetic energy
- (C) Potential energy
- (D) Electrical energy

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 27 Question Id : 2672369887 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which of the following is best conductor of electricity?

- (A) Silver
- (B) Mercury
- (C) Platinum
- (D) Copper

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 28 Question Id : 2672369888 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

-40° Fahrenheit is equal to:

(A) -20° centigrade

(B) -40° centigrade

(C) -10° centigrade

(D) -80° centigrade

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 29 Question Id : 2672369889 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

A family consists of six members. There is at least one married couple in the family.

- I. Venkat is not the husband of Savita.
- II. Charan is the brother of Jyothi.
- III. Jyothi is not the wife of Ravi.
- IV. Sekhar is the grandfather of Charan.
- V. Jyothi is Savita's daughter.
- VI. Savita's husband is living with her.

If Sekhar has his two children living with him, which of the following pairs can be siblings?

- (A) Ravi & Venkat
- (B) Sekhar & Ravi
- (C) Venkat & Savita
- (D) Either A or C

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 30 Question Id : 2672369890 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Seven villages A, B, C, D, E, F and G are situated as follows:

E is 2km to the west of B.

F is 2km to the north of A.

C is 1km to the west of A.

D is 2km to the south of G.

G is 2km to the east of C.

D is exactly in the middle of B and E.

A is in the middle of:

(A) E and C

(B) F and E

(C) F and G

(D) G and C

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 31 Question Id : 2672369891 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The statement given below is followed by two arguments numbered I and II. You have to decide which of the following arguments a “strong” argument is and which a “weak” argument is.

Statement: Should the Government introduce Gross Happiness Index on the lines of that introduced in Bhutan?

Arguments: I. Yes. It will greatly help India in becoming a prosperous nation.
II. No. Bhutan has not gone anywhere even after introducing GHI over four decades ago.

(A) If only argument I is strong

(B) If only argument II is strong

(C) If neither I nor II is strong

(D) If both I and II are strong

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 32 Question Id : 2672369892 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Choose the most appropriate answer

Statement (1): Due to deforestation, the chances of flooding have increased in city X.

Statement (2): City X suffered from disrupted water flow.

- (A) I is the cause and II is the effect
- (B) II is the cause and I is the effect
- (C) Both I and II are independent causes
- (D) Both I and II are effects of common causes

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 33 Question Id : 2672369893 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

In the following questions, the first and the last parts of the sentence are numbered 1 and 6. The rest of the sentence is split into four parts and named P, Q, R, and S. These four parts are not given in their proper order. Read the sentence and find out which of the four combinations is correct. Then find the correct answer.

1.A dictionary

P.arranged words

Q.about which information

R.containing alphabetically

S.is a book

6.is given.

(A) RPQS

(B) RPSQ

(C) SRPQ

(D) SPRQ

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 34 Question Id : 2672369894 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Choose the option that exhibits the same analogy.

Artist : Canvas ::

- (A) Driver : Car
- (B) Pedestrian : Road
- (C) Composer : Symphony
- (D) Surgeon : Operation

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 35 Question Id : 2672369895 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Choose the alternative which best expresses the meaning of the idiom/.phrase printed in bold type.

To hold somebody to ransom

- (A) To keep captive and demand concession
- (B) To humiliate somebody
- (C) To offer bribe
- (D) To blackmail and extract money

Options :

- 1. ✓ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 36 Question Id : 2672369896 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

In following questions, groups of words are given. In each group, one word is correctly spelt. Find the correctly spelt word.

(A) Asassin

(B) Assassin

(C) Assasin

(D) Assassen

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 37 Question Id : 2672369897 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

If A and B are two matrices such that rank of A = m and rank of B = n, then

(A) $\text{rank}(AB) = m + n$

(B) $\text{rank}(AB) \geq \text{rank}(A)$

(C) $\text{rank}(AB) \geq \text{rank}(B)$

(D) $\text{rank}(AB) \leq \min(\text{rank } A, \text{rank } B)$

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 38 Question Id : 2672369898 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

If A is a square matrix of order $n \times n$., then $\text{adj}(\text{adj } A)$ is equal to

(A) $|A|^n A$

(B) $|A|^{n-1} A$

(C) $|A|^{n-2} A$

(D) Identity matrix

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✖ D

Question Number : 39 Question Id : 2672369899 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

From the matrix equation $AB = AC$ we can conclude $B = C$ provided

(A) A is singular

(B) A is non-singular

(C) A is symmetric

(D) A is square

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 40 Question Id : 2672369900 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

If a matrix A is such that $3A^3 + 2A^2 + 5A + I = 0$

(A) $-(3A^2 + 2A - 5I)$

(B) $3A^2 + 2A + 5I$

(C) $3A^2 - 2A - 5I$

(D) $-3A^2 - 2A - 5I$

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 41 Question Id : 2672369901 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

If A is a square matrix such that $AA^T = I = A^T A$, then A is

- (A) A symmetric matrix
- (B) A skew symmetric matrix
- (C) A diagonal matrix
- (D) An orthogonal matrix

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 42 Question Id : 2672369902 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The image of the interval $[-1, 3]$ under the mapping $f : \mathbb{R} \rightarrow \mathbb{R}$ given by $f(x) = 4x^3 - 12x$ is

(A) $[8, 72]$

(B) $[-8, 72]$

(C) $[8, -72]$

(D) $[-8, -72]$

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 43 Question Id : 2672369903 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The function $(x) = |x| + |x - 1|$ is

(A) continuous at $x = 1$, but not differentiable

(B) both continuous and differentiable at $x = 1$

(C) not continuous at $x = 1$

(D) none of these

Options :

1. ✓ A

2. ✗ B

3. ✖ C

4. ✖ D

Question Number : 44 Question Id : 2672369904 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The equation $y - 2x = c$ represents the orthogonal trajectories of the family

(A) $y = ae^{-2x}$

(B) $x^2 + 2y^2 = a$

(C) $xy = a$

(D) $x + 2y = a$

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 45 Question Id : 2672369905 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The probability that a man will live 10 more years is $\frac{1}{4}$ and the probability that his wife will live 10 more years is $\frac{1}{3}$. Then the probability that neither will be alive in 10 years is

(A) $\frac{5}{12}$

(B) $\frac{1}{2}$

(C) $\frac{7}{12}$

(D) $\frac{11}{12}$

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 46 Question Id : 2672369906 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

A container has O_2 at 5 atm and molar volume 2 liter/mole, if $a = 9.24$ atm(liter/mole), $b = 0.0907$ liter/mole, what is the temperature of O_2 ? (Use vander waal equation)

(A) 140K

(B) 150K

(C) 170K

(D) 190K

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 47 Question Id : 2672369907 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

CH₄ at the rate 10 mole/min is reacted with O₂ at the rate 30 mole/min, what is the rate of formation of CO₂ in the product?

- (A) 5 mole/min
- (B) 10 mole/min
- (C) 20 mole/min
- (D) 40 mole/min

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 48 Question Id : 2672369908 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Pick out the correct conversion

(A) 1 BTU = 453.6 calories

(B) 1 BTU = 252 calories

(C) 1 Calorie = 252 BTU

(D) 1 Calorie = 453.6 BTU

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 49 Question Id : 2672369909 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Heat of neutralization of HCl and NaOH is -57.46 kJ/Kgmore. The heat of ionization of water will be _____ kJ/Kgmole

(A) 57.46

(B) -57.46

(C) 114.92

(D) -28.73

Options :

1. ✓ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 50 Question Id : 2672369910 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

pH value of H_2SO_4 (5% concentration) is

(A) 5

(B) 7

(C) >7

(D) <7

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 51 Question Id : 2672369911 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which of the following is not used for computing latent heat of vapourization

- (A) Clausius – Clapeyron Equation
- (B) Reference substance plots based on Duhring & Othmer plots
- (C) Kistyakowasky's equation
- (D) Hess's law of constant heat summation

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 52 Question Id : 2672369912 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

For ideal gas, at absolute zero temperature

- (A) Mass of the gas is zero
- (B) Volume of the gas is zero
- (C) Pressure of the gas is zero
- (D) All A, B and C

Options :

- 1. ✓ A
- 2. ✗ B

3. ✘ C

4. ✘ D

Question Number : 53 Question Id : 2672369913 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

If the pressure of an ideal gas contained in a closed vessel is increased by 0.4 percent due to 1°C change in the temperature, the initial temperature must be

(A) 250K

(B) 2500K

(C) 250°C

(D) 25°C

Options :

1. ✔ A

2. ✘ B

3. ✘ C

4. ✘ D

Question Number : 54 Question Id : 2672369914 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which one of the following gases is nearest to an ideal gas

- (A) Helium
- (B) Hydrogen
- (C) Oxygen
- (D) Nitrogen

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 55 Question Id : 2672369915 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

A vessel has two compartments A and B containing H_2 and O_2 respectively both at one atmospheric pressure. If the wall separating the two compartments is removed

- (A) The pressure will remain unchanged
- (B) The pressure will increase in A
- (C) The pressure will increase in B
- (D) The pressure will increase both in A and B

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 56 Question Id : 2672369916 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The compressibility factor (Z) of a gas is defined as

- (A) The ratio of the actual volume of the gas to the volume predicted by ideal-gas law
- (B) The ratio of the volume predicted by the ideal gas law to the actual volume of the gas
- (C) Difference between the actual volume of the gas and the volume predicted by ideal gas law
- (D) None of the above.

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 57 Question Id : 2672369917 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The maximum theoretical suction lift (meters) of a reciprocating pump is

(A) 5

(B) 10

(C) 50

(D) 100

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 58 Question Id : 2672369918 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

In which of the following body shapes, the pressure drag is large compared to the friction drag?

(A) Streamline body

(B) Two dimensional body

(C) Bluff body

(D) None of the above

Options :

1. ✓ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 59 Question Id : 2672369919 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

When the water is warm the height to which it can be lifted by a pump

- (A) Decreases due to reduced viscosity
- (B) Decreases due to reduced vapor pressure
- (C) Increases due to increased vapor pressure
- (D) Decreases due to increased frictional resistance

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 60 Question Id : 2672369920 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

A centrifugal pump designed for handling water will have ____ when pumping thicker oil.

(A) Less head and less capacity

(B) More head

(C) More capacity

(D) Less head and more capacity

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 61 Question Id : 2672369921 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Stoke's equation is valid in the Reynolds number range

(A) 0.01 to 0.1

(B) 0.1 to 2

(C) 2 to 10

(D) 10 to 100

Options :

1. ✓ A

2. ✘ B

3. ✘ C

4. ✘ D

Question Number : 62 Question Id : 2672369922 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

In centrifugal pumps, cavitation occurs, when pressure of the impeller eye or vane becomes

(A) Less than atmospheric pressure

(B) More than liquid vapour pressure

(C) Less than liquid vapour pressure

(D) More than atmospheric pressure

Options :

1. ✔ A

2. ✘ B

3. ✘ C

4. ✘ D

Question Number : 63 Question Id : 2672369923 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Balls for ball mills are never made of

(A) Forged/cast steel

(B) Lead

(C) Alloy steel

(D) Cast Iron

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 64 Question Id : 2672369924 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The main size reduction operation in ultrafine grinders is:

(A) Cutting

(B) Attrition

(C) Compression

(D) None of the above

Options :

1. ✓ A

2. ✗ B

3. ✖ C

4. ✖ D

Question Number : 65 Question Id : 2672369925 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The value of angle of nip is generally about

(A) 16

(B) 32

(C) 64

(D) None of the above

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 66 Question Id : 2672369926 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which of the following is not considered a mechanical operation?

- (A) Agitation
- (B) Filtration
- (C) Size Enlargement
- (D) Humidification

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 67 Question Id : 2672369927 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which of the following is not an ultrafine grinder (colloid mill)?

- (A) Micronizers
- (B) Agitated mills and fluid energy mills
- (C) Toothed roll crusher
- (D) Hammer mills with internal classification

Options :

- 1. ✓ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 68 Question Id : 2672369928 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which of the following is unimportant in forced convection?

(A) Reynolds number

(B) Prandtl number

(C) Grashof number

(D) None of these

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 69 Question Id : 2672369929 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Psychrometry deals with the properties of gas-vapor mixture. Humidity can be determined by the measurement of the _____ of a fibre.

- (A) Electrical resistance
- (B) Thermal conductivity
- (C) Strength
- (D) None of these

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 70 Question Id : 2672369930 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

A dephlegmator is

- (A) Total condenser
- (B) Vacuum evaporator
- (C) Partial Condenser
- (D) Double pipe heat exchanger

Options :

- 1. ✓ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 71 Question Id : 2672369931 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Overall heat transfer co-efficient for cooling of hydrocarbons by water is about

(A) 50 -100 Kcal/hr.m².°C

(B) 50 -100 W/m².K

(C) 50 -100 BTU/hr. ft.²°F

(D) 1000 - 1500 BTU/hr. ft.²°F

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 72 Question Id : 2672369932 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

As per Kirchoffs law, the ratio of the total radiating power to the absorptive of a body depends on the

- (A) Temperature of the body only
- (B) Wavelength of monochromatic radiation
- (C) Both (a) and (b)
- (D) Nature of material of body

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 73 Question Id : 2672369933 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The heat transfer by radiation from a mild steel surface is to be reduced by reducing the emissivity of the surface. This can be best achieved by

- (A) Painting the surface black
- (B) Painting the surface white (with aluminium paint)
- (C) Giving the surface a mirror finish
- (D) Roughening the surface

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 74 Question Id : 2672369934 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

If average heat transfer co-efficient is h_a and the local coefficient at the end of the plate is h_l then in case of heat transfer to a fluid flowing over a flat plate, heated over its entire length

(A) $h_a = h_l$

(B) $h_a = 2 h_l$

(C) $h_a = 0.5 h_l$

(D) $h_a = 0.75 h_l$

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 75 Question Id : 2672369935 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Pick out the wrong statement

- (A) In process heat exchangers, saturated steam is preferred over the superheated steam
- (B) The maximum emissive power of a surface at a temperature T_1 occurs at a wavelength of λ_1 . If the surface temperature is halved, the maximum emissive power would occur at a wavelength of $0.5\lambda_1$.
- (C) When a vertical plate is heated in infinite air environment under natural convection conditions, the velocity profile in air, normal to the plate, exhibits a maximum.
- (D) A body at 925 K emits an energy of $1.42 \times 10^{11} \text{ sW/m}^2$ (s is the Stefan-Boltzmann constant) in the wavelength band between $3 \mu\text{m}$ to $4 \mu\text{m}$. The fraction of this energy in the total energy emitted over the entire wavelength range is equal to emissivity.

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 76 Question Id : 2672369936 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

In natural convection heat transfer, the correlating parameter is the

- (A) Graetz Number
- (B) Eckert Number
- (C) Grashoff Number
- (D) Bond Number

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 77 Question Id : 2672369937 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Heat transfer by conduction results due to the transfer of free electrons, kinetic energy & vibrational energy from one molecule to another. Conduction heat transfer can not take place

- (A) Between two bodies in physical contact with each other
- (B) Between two bodies not in physical contact with each other
- (C) From one part of a body to the another part of the same body
- (D) Both (B) and (C)

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 78 Question Id : 2672369938 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Solution which distill without change in composition is called

(A) Ideal

(B) Saturated

(C) Supersaturated

(D) Azeotropic

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 79 Question Id : 2672369939 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

In distillation, overhead product contains:

- (A) Only one component
- (B) Two components
- (C) Any number of components
- (D) Only saturated liquid

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 80 Question Id : 2672369940 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

With increase in pressure, the relative volatility for a binary system

- (A) Increases
- (B) Decreases
- (C) Remains same
- (D) Either (a) or (b) depends on the system

Options :

- 1. ✓ A
- 2. ✗ B

3. ✘ C

4. ✘ D

Question Number : 81 Question Id : 2672369941 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Chemisorption (chemical adsorption) is

(A) Same as "Van der Waals" adsorption

(B) Characterized by adsorption of heat

(C) Irreversible phenomenon

(D) Reversible phenomenon

Options :

1. ✔ A

2. ✘ B

3. ✘ C

4. ✘ D

Question Number : 82 Question Id : 2672369942 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Stefan's law describes the mass transfer by

- (A) Diffusion
- (B) Bulk flow
- (C) Both (A) and (B)
- (D) Neither (A) and (B)

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 83 Question Id : 2672369943 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Low viscosity absorbent is preferred for reasons of:

- (A) Rapid absorption rates and good heat transfer characteristics
- (B) Improved flooding characteristics
- (C) Low pressure drop on pumping
- (D) All the above

Options :

- 1. ✓ A
- 2. ✗ B

3. ✖ C

4. ✖ D

Question Number : 84 Question Id : 2672369944 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

During the constant rate period of drying of a solid

(A) Increased air humidity decreases the rate of drying

(B) Increasing the air temperature decreases the drying rate

(C) Surface evaporation of unbound moisture occurs

(D) None of the above

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 85 Question Id : 2672369945 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

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

(A) $q > 1$

(B) $q < 1$

(C) $q = 1$

(D) $q = 0$

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 86 Question Id : 2672369946 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Reboiler is considered as one theoretical plate, because

(A) Of the assumption that vapour and liquid leaving the reboiler are in equilibrium

(B) Vapour is recycled to the column

(C) Reboiler itself contains one plate

(D) None of the above

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 87 Question Id : 2672369947 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

H₂S is being absorbed in a gas absorber unit. The height of the transfer unit based on the overall mass transfer coefficient on the gas side is 0.4 m. The equilibrium data is given by, $y = 1.5x$. The bulk concentration of H₂S has to be reduced from 0.05 to 0.001 mole fraction in the gas side. The height of the tower (in meters) corresponding to an operating line given by, $y = 5x + 0.001$ is

(A) 2.0

(B) 1.56

(C) 1.0

(D) 0.56

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 88 Question Id : 2672369948 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

For every 10C rise in temperature the rate of chemical reaction doubles. When the temperature is increased from 30 to 70C, the rate of reaction increases _____ times.

- (A) 8
- (B) 12
- (C) 16
- (D) 32

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 89 Question Id : 2672369949 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

For high conversion in an exothermic solid catalysed reaction, use a _____ bed reactor.

- (A) Fixed
- (B) Fluidised Bed reactor followed by a fixed bed reactor
- (C) Fixed bed reactor followed by a fluidized bed reactor
- (D) Fluidized

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 90 Question Id : 2672369950 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

A first order reaction requires two equal sized CSTR. The conversion is:

- (A) Less when they are connected in series
- (B) More when they are connected in series
- (C) More when they are connected in parallel
- (D) Same whether they are connected in series or in parallel

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 91 Question Id : 2672369951 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

In case of a physical adsorption the heat of adsorption (kcal/kgmole) is of the order of:

- (A) 100
- (B) 1000
- (C) 10000
- (D) 100000

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 92 Question Id : 2672369952 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The single parameter model proposed for describing non ideal flow

- (A) Tank in series
- (B) Dispersion
- (C) Both (A) and (B)
- (D) Neither (A) and (B)

Options :

- 1. ✓ A

2. ✘ B

3. ✘ C

4. ✘ D

Question Number : 93 Question Id : 2672369953 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The mechanism of catalysis is explained by:

(A) Activated complex theory

(B) Collision Theory

(C) Thermodynamics

(D) None of the above

Options :

1. ✔ A

2. ✘ B

3. ✘ C

4. ✘ D

Question Number : 94 Question Id : 2672369954 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The fractional volume change of the system for the isothermal gas phase reaction, A to 3B, between no conversion and complete conversion is

(A) 0.5

(B) 1.0

(C) 2.0

(D) 3.0

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 95 Question Id : 2672369955 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

With decrease in temperature, the equilibrium conversion of a reversible endothermic reaction:

(A) Decreases

(B) Increases

(C) Remains unaffected

(D) Increases linearly with temperature

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 96 Question Id : 2672369956 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

_____ temperature scale assigns 0° to the 'ice point' and 80° to the 'steam point'.

(A) Celcius

(B) Rankine

(C) Reaumur

(D) Fahrenheit

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 97 Question Id : 2672369957 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Very low pressure is expressed in microns (μ), which is equal to ____ mm of Hg column (absolute) at 0°C.

(A) 0.0001

(B) 0.001

(C) 0.01

(D) 0.1

Options :

1. ✓ A

2. ✗ B

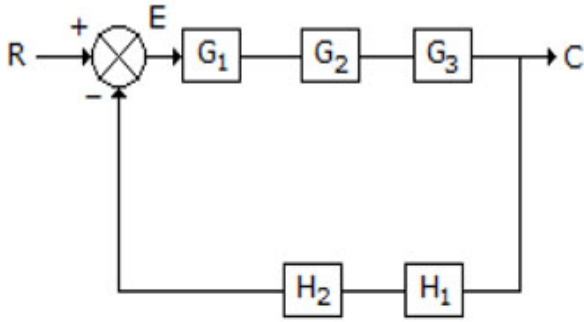
3. ✗ C

4. ✗ D

Question Number : 98 Question Id : 2672369958 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

What is the overall transfer function (C/R) of the following block diagram if $G=G_1 \cdot G_2 \cdot G_3$ and $H=H_1 \cdot H_2$



- (A) $1/(1 + GH)$
- (B) $G/(1 + GH)$
- (C) $H/(1 + GH)$
- (D) $G/(1 - GH)$

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 99 Question Id : 2672369959 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

The second order system with the transfer function $4/(s^2 + 2s + 4)$ has a damping ratio of

(A) 2.0

(B) 0.5

(C) 1.0

(D) 4.0

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 100 Question Id : 2672369960 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which of the following is not the triple point of water?

(A) 32R

(B) 273K

(C) 492R

(D) 32F

Options :

1. ✓ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 101 Question Id : 2672369961 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Working principle of radiation pyrometer is based on the

(A) Wien's law

(B) Kirchoff's law

(C) Stefan Boltzmann law

(D) Seebeck effect

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 102 Question Id : 2672369962 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which of the following controllers has maximum offset?

- (A) P controller
- (B) P-I controller
- (C) P-D controller
- (D) P-I-D controller

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 103 Question Id : 2672369963 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

A magnetic flowmeter is

- (A) Based on the principle of Faraday's law
- (B) Capable of measuring the flowrate of slurries and electrolytes
- (C) Based on the linear relationship between the fluid flow rate and the induced voltage
- (D) All of the above

Options :

- 1. ✓ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 104 Question Id : 2672369964 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which of the following does not come under the sales expenses for a product of a chemical plant?

(A) Advertising

(B) Warehousing

(C) Legal fees

(D) Customer services

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 105 Question Id : 2672369965 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Construction expenses are roughly _____ percent of the total direct cost of the plant.

- (A) 2
- (B) 10
- (C) 30
- (D) 50

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 106 Question Id : 2672369966 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Utilities' in a chemical process plant includes compressed air, steam, water, electrical power, oxygen, acetylene, fuel gases etc. Utility costs for ordinary chemical process plants ranges roughly from _____ percent of the total product cost.

(A) 1 to 5

(B) 10 to 20

(C) 25 to 35

(D) 35 to 45

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D

Question Number : 107 Question Id : 2672369967 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Nominal and effective interest rates are equal, when the interest is compounded

- (A) Quarterly
- (B) Semi-Annually
- (C) Annually
- (D) None of the above

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 108 Question Id : 2672369968 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Total product cost of a chemical plant does not include the _____ cost.

- (A) Market survey
- (B) Operating labour, supervision and supplies
- (C) Overhead and utilities
- (D) Depreciation, property tax and insurance

Options :

- 1. ✓ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 109 Question Id : 2672369969 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Personnel working in the market research group is responsible for the job of

(A) Equipment selection

(B) Product evaluation

(C) Equipment design

(D) Cost Estimation

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 110 Question Id : 2672369970 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Functional depreciation of an equipment is the measure of decrease in its value due to its

- (A) Ageing
- (B) Wear and Tear
- (C) Obsolescence
- (D) Breakdown or accident

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 111 Question Id : 2672369971 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Pick out the wrong statement:

- (A) Debt-equity ratio of a chemical company describes the lenders contribution for each rupee of owner's contribution i.e., $\text{debt-equity ratio} = \frac{\text{total debt}}{\text{net worth}}$
- (B) Return on investment (ROI) is the ratio of profit before interest & tax and capital employed (i.e. net worth + total debt)
- (C) Working capital = current assets + current liability
- (D) Turn over = opening stock + production closing stock

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 112 Question Id : 2672369972 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Vegetable oils and fats basically differ in their

- (A) Density ranges
- (B) Physical State
- (C) Chemical Composition
- (D) Chemical properties

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 113 Question Id : 2672369973 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Shaving soaps are

- (A) Soft potassium soaps (potassium salt of fatty acid) with free Stearic acid to give lather a lasting property
- (B) Metallic soaps compounded with frothing agents
- (C) High free alkali soaps having excess of cane sugar and alcohol
- (D) None of these

Options :

1. ✓ A
2. ✗ B
3. ✗ C
4. ✗ D

Question Number : 114 Question Id : 2672369974 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Direct conversion of chemical energy into electrical energy is done in a

- (A) Magnetohydrodynamic (MHD) generator
- (B) Fuel Cell
- (C) Fast breeder reactor
- (D) None of these

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 115 Question Id : 2672369975 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Inversion of sucrose produces

- (A) Fructose
- (B) Glucose
- (C) Both Fructose and Glucose
- (D) Neither Fructose and Glucose

Options :

- 1. ✓ A
- 2. ✗ B

3. ✖ C

4. ✖ D

Question Number : 116 Question Id : 2672369976 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Raw materials for nitric acid manufacture are

(A) Hydrogen peroxide, air and water

(B) Anhydrous ammonia and air

(C) Anhydrous ammonia, air and water

(D) Wet ammonia, air and water

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 117 Question Id : 2672369977 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Catalytic ammonia synthesis reaction as in Haber's process is

- (A) Endothermic
- (B) Exothermic
- (C) Irreversible
- (D) None of the above

Options :

- 1. ✓ A
- 2. ✗ B
- 3. ✗ C
- 4. ✗ D

Question Number : 118 Question Id : 2672369978 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Which is the most ideal feed stock for 'coking' process used for the manufacture of petroleum coke?

- (A) Naptha
- (B) Vacuum residue
- (C) Light gas oil
- (D) Diesel

Options :

- 1. ✓ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 119 Question Id : 2672369979 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Methyl tertiary butyl ether (MTBE), a high octane (octane no. = 115) gasoline blending component is produced by the simple additive reaction of isobutylene with

(A) Methyl alcohol

(B) Ethyl alcohol

(C) Methane

(D) Ethane

Options :

1. ✔ A

2. ✖ B

3. ✖ C

4. ✖ D

Question Number : 120 Question Id : 2672369980 Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0.25

Nylon-6, 10 which is used for bristles making is superior to nylon 6, 6 due to its lower water absorption capacity, is a/an

(A) Polyester

(B) Polyamide

(C) Polyisoprene

(D) Polystyrene

Options :

1. ✓ A

2. ✗ B

3. ✗ C

4. ✗ D