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Section : **Chemical for SDSC SHAR and PCR**

Q.1 If three cells 1V, 1.5 V, and 2 V are connected in parallel then the total e.m.f will be

A. 2.5V

B. 2V

C. 1.5V

D. 4.5V

Ans ✗ 1. A

✓ 2. B

✗ 3. C

✗ 4. D

Question ID : **5834938418**

Q.2 Forced draft cooling towers have the following disadvantages

A. High maintenance

B. High fan size

C. Susceptible to water leaks

D. All of these

Ans ✗ 1. A

✗ 2. B

✗ 3. C

✓ 4. D

Question ID : **5834938366**

Q.3 Heat transfer takes place according to which of the following law?

A. Newton's second law of motion

B. First law of thermodynamics

C. Newton's law of cooling

D. Second law of thermodynamics

Ans ✗ 1. A

✗ 2. B

✗ 3. C

✓ 4. D

Question ID : **5834938369**

Q.4 Which of the following is not categorized as mechanical operation?

A. Agitation

B. Filtration

C. Size enlargement

D. Humidification

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938373**

Q.5 $1\ m^3 = \text{-----}cm^3$

A. 100

B. 10^3

C. 10^5

D. 10^6

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938406**

Q.6 The right hand rule for determining the direction of the induced EMF was introduced by

A. Faraday

B. Lenz

C. Fleming

D. Maxwell

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834938425**

Q.7 Which dryer is commonly used for wet filter cakes and lumpy solids?

A. Spray

B. Tray

C. Drum

D. Fluidized bed

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938379**

Q.8 Value of $\sqrt{576}$ is

A. 24

B. 23

C. 14

D. 19

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938409**

Q.9 Crude oil is made up mainly of?

A. Alkanes, cycloalkanes and aromatics

B. Alkanes, aldehydes and ketones

C. Alkanes, alkenes and alkynes

D. Saturated carbo hydrates and ceramics

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938403**

Q.10 Which of the following instrument is used for making the markings permanent?

A. Scriber

B. Odd leg calliper

C. Outside calliper

D. Centre punch

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938378**

Q.11 The value of temperature of -25^0 C in Kelvin scale is

A. 248

B. 25

C. 273

D. 298

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938416**

Q.12 $Na_2CO_3.10H_2O$ is

A. Washing soda

B. Baking soda

C. Bleaching powder

D. Tartaric acid

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938419**

Q.13 The specific gravity of a liquid has

A. the same unit as that of mass density

B. the same unit as that of weight density

C. the same unit as that of specific volume

D. no unit

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938355**

Q.14 The compound that can work both as an oxidizing as well as reducing agent is

A. $KMnO_4$

B. H_2O_2

C. $Fe_2(SO_4)_3$

D. $K_2Cr_2O_7$

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938429**

Q.15 Which is equal to $(a+b)^2 - (a-b)^2$

A. 2ab

B. 3ab

C. 4ab

D. 5ab

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834938407**

Q.16 Which of the following is a chemical property of metal?

A. Corrosion

B. Conductivity

C. Hardness

D. Elasticity

Ans
✔ 1. A
✘ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834938397**

Q.17 Which of the following agents is responsible for turning the Taj Mahal yellow?

A. Sulphur

B. Chlorine

C. Sulphur dioxide

D. Nitrogen dioxide

Ans
✘ 1. A
✘ 2. B
✔ 3. C
✘ 4. D

Question ID : **5834938400**

Q.18 A large Reynold's number is indication of?

A. Smooth and streamline flow

B. Laminar flow

C. Steady flow

D. Highly turbulent flow

Ans
✘ 1. A
✘ 2. B
✘ 3. C
✔ 4. D

Question ID : **5834938359**

Q.19 निम्न में से कौन सा सतह सबसे कम घर्षण उत्पन्न करता है?

A. विनाइल फर्श

B. हिम

C. प्लास्टिक

D. प्लाइवुड

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938352**

Q.20 Absorptivity and reflectivity of black body respectively are?

A. 0 and 0

B. 1 and 0

C. 0 and 1

D. 1 and 1

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938370**

Q.21 Which of the following forces doesn't act in case of fluids?

A. Centrifugal force

B. Tensile force

C. Vibratory force

D. Elastic force

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938361**

Q.22 Electric bulbs are made of _____ glass

A. Jena

B. Flint

C. Crookes

D. Pyrex

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938424**

Q.23 Chance process is used for the

A. Cleaning of coal

B. Concentration of iron ore

C. Concentration of pyrites

D. Water treatment

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938380**

Q.24 Cavitation will not occur if the sum of the velocity and pressure heads at the suction is?

A. Zero

B. Much larger than the vapor pressure of the liquid

C. Much smaller than the vapor pressure of the liquid

D. Equal to the vapor pressure of the liquid

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938362**

Q.25 जब जल की वाष्पन दर शून्य हो तो वायु की सापेक्ष आर्द्रता होगी?

A. अनिश्चित

B. 50%

C. 0%

D. 100%

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938390**

Q.26 All radiations in a black body are?

A. Reflected

B. Absorbed

C. Refracted

D. Transmitted

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938367**

Q.27 Geometric similarity between model and prototype means?

A. The similarity discharges

B. The similarity of linear dimensions

C. The similarity of motion

D. The similarity of forces

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938404**

Q.28 _____ rays are emitted in radioactivity

A. X-rays

B. Visible light

C. α, β, γ rays

D. Microwave

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834938427**

Q.29 For the transportation of the ultrafine particles, the equipment used is a ----------
conveyor.

A. Belt

B. Screw

C. Pneumatic

D. Apron

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834938375**

Q.30 निम्नलिखित में से किसे जोड़ने पर $X^4 + 64$ एक पूर्ण वर्ग बनेगा?

A. $16\ x^2$

B. $4\ x^2$

C. $8\ x^2$

D. $-8\ x^2$

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938430**

Q.31 In a triangle, three angles are X+10, X+20 and X+30, find the value of X?

A. 40°

B. 45°

C. 60°

D. 90°

Ans
✔ 1. A
✘ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834938412**

Q.32 What is increasing order of the fractions 14/17, 10/12, 6/7 ,18/22?

A. 6/7, 14/17, 10/12, 18/22

B. 18/22, 14/17, 10/12, 6/7

C. 14/17, 10/12, 6/7, 18/22

D. 6/7, 10/12, 14/17, 18/22

Ans
✘ 1. A
✔ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834938415**

Q.33 In general, the common efficiency range achieved in the cooling tower is

A. 0-10 %

B. 70-75%

C. 98-100%

D. 100%

Ans
✘ 1. A
✔ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834938368**

Q.34 The fluid property due to which Mercury does not wet the glass is

A. Density

B. Viscosity

C. Surface tension

D. Diffusivity

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834938358**

Q.35 What is the value of $X^3 + 3\ Y^2X^2$ if X=3, Y=2?

A. 135

B. 81

C. 54

D. 63

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938405**

Q.36 निम्न में से कौन सी धातु भूपटल पर प्रचुर मात्रा में पाई जाती है?

A. मैग्नीशियम

B. एल्युमिनियम

C. ऑक्सीजन

D. लोहा

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938428**

Q.37 Momentum of an object is the product of

A. Mass and velocity

B. Mass and acceleration

C. Mass and density

D. Mass and volume

Ans
✔ 1. A
✘ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834938421**

Q.38 Drying operation under vacuum is carried out to

A. Dry those materials which have very high unbound moisture content

B. Reduce drying temperature

C. Increase drying temperature

D. Dry the materials having high bound moisture content

Ans
✘ 1. A
✔ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834938392**

Q.39 Operating speed of a ball mill need to be -------critical speed

A. Less than

B. More than

C. Equal to

D. None of these

Ans
✔ 1. A
✘ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834938385**

Q.40 Which material pipe is used for drainage pipeline?

A. Brass pipe

B. GI pipe

C. Steel pipe

D. Ceramic/Sponge iron

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938387**

Q.41 निम्नलिखित में से कौन सा यंत्र विद्युत उत्पन्न करता है?

A. ट्रांसमीटर

B. इलेक्ट्रोग्राफर

C. वोल्टामीटर

D. डायनमो

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938420**

Q.42 In a solution containing 0.30 kg mole of solute and 600 kg of solvent, the molality is

A. 0.50

B. 0.60

C. 2

D. 1

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938388**

Q.43 यदि घन की प्रत्येक भुजा दोगुनी की जाती है, तो उसका आयतन कितना हो जाता है

A. 2 गुना

B. 4 गुना

C. 6 गुना

D. 8 गुना

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938410**

Q.44 Which of the following pairs has the same dimensions?

A. Specific heat and latent heat

B. Impulse and momentum

C. Surface tension and force

D. Moment of inertia and momentum

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938356**

Q.45 द्विघात समीकरण $3x^2 - 2x + (1/3)$ के मूल की प्रकृति होती है

A. वास्तविक एवं भिन्न

B. वास्तविक एवं समान

C. वास्तविक नहीं

D. क्रमिक प्राकृतिक संख्याएं

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938411**

Q.46 In vacuum distillation, substance boils at?

A. Exact temperature

B. Temperature slightly above its boiling point

C. Temperature below its boiling point

D. High pressure

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834938399**

Q.47 Faraday's law of electrolysis is related to

A. Atomic number of cations

B. Atomic number of anion

C. Equivalent weight of electrolyte

D. Speed of cations

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834938426**

Q.48 Mass transfer rate between two fluid phases does not necessarily depend on the --------- of the two phases.

A. Chemical properties

B. Physical properties

C. Degree of turbulence

D. Interfacial area

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938381**

Q.49 Ultra-fine grinders operate principally by

A. Slow compression

B. Impact

C. Attrition

D. Cutting

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834938374**

Q.50 One of the most common solvent used for crystallization is?

A. Water

B. Alcohol

C. Normal saline

D. Sulphuric acid

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938396**

Q.51 The process used to obtain the solute from the solution is called

A. Evaporation

B. Distillation

C. Condensation

D. Separation

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938389**

Q.52 Name the property of metal which can be drawn into wire without rupture?

A. Ductility

B. Tenacity

C. Elasticity

D. Malleability

Ans ✔ 1. A

✘ 2. B

✘ 3. C

✘ 4. D

Question ID : **5834938384**

Q.53 एक शीतलन टावर में L/G का अनुपात निम्न का अनुपात होता है

A. लम्बाई एवं परिधि

B. लम्बाई एवं तापमान प्रवणता

C. जल प्रवाह दर एवं वायु द्रव्यमान प्रवाह दर

D. वायु द्रव्यमान प्रवाह दर एवं जल प्रवाह दर

Ans ✘ 1. A

✘ 2. B

✔ 3. C

✘ 4. D

Question ID : **5834938372**

Q.54 Which file is used to make the job close to the finishing size?

A. Single cut file

B. Curved cut file

C. Second cut file

D. Double cut file

Ans ✘ 1. A

✘ 2. B

✔ 3. C

✘ 4. D

Question ID : **5834938386**

Q.55 Unit of the rate of heat transfer is

A. Joule

B. Newton

C. Pascal

D. Watt

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938365**

Q.56 Name of the products formed when Iron filings are heated with dilute hydrochloric acid?

A. Ferric chloride and water

B. Ferric chloride and Hydrogen gas

C. Ferrous chloride and water

D. Ferrous chloride and hydrogen gas

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938423**

Q.57 Unit of thermal diffusivity is?

A. $m/(h\ ^0C)$

B. m^2/h

C. m/h

D. $m^2/(h\ ^0C)$

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938371**

Q.58 कूलिंग टावर में जल को ठंडा करने के लिए निम्नलिखित में से किस प्रक्रिया का प्रयोग किया जाता है?

A. वाष्पन

B. विकिरण

C. संघनन

D. चालन

Ans ✔ 1. A

✘ 2. B

✘ 3. C

✘ 4. D

Question ID : **5834938377**

Q.59 Which of the following is a method of heat transfer?

A. Convection

B. Radiation

C. Conduction

D. All of the above

Ans ✘ 1. A

✘ 2. B

✘ 3. C

✔ 4. D

Question ID : **5834938364**

Q.60 निम्नलिखित में से किस गैस का प्रतिशत हवा में सर्वाधिक है ?

A. ऑक्सीज़न गैस

B. नाइट्रोजन गैस

C. जलवाष्प

D. कार्बन डाइ ऑक्साइड

Ans ✘ 1. A

✔ 2. B

✘ 3. C

✘ 4. D

Question ID : **5834938395**

Q.61

Agitator is provided in a crystallizer for

A. Avoiding deposition on cooler surfaces

B. Formation of nuclei

C. Crystal growth

D. All of the above

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938394**

Q.62

HCF of 26 and 91 is

A. 25

B. 13

C. 19

D. 11

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938408**

Q.63 Which of the following method is used for purification of solids?

A. Distillation

B. Crystallization

C. Filtration

D. Extraction

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938376**

Q.64 Which of the following is used for angular measurement?

A. Micrometer

B. Telescopic gauge

C. Comparator

D. Clinometer

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938431**

Q.65 Thermal conductivity is maximum for which substance

A. Silver

B. Ice

C. Aluminium

D. Diamond

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938363**

Q.66 On addition of solute in the solvent, the -------- of the solution decreases.

A. Boiling point

B. Freezing point

C. Vapor pressure

D. Both B & C

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938391**

Q.67 Steam distillation is used to separate

A. Azeotropes

B. High boiling substances from nonvolatile impurities

C. High sensitive materials

D. Mixtures of low relative volatility

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938393**

Q.68 One torr is equal to

A. 1 mm Hg

B. 1 pascal

C. 1 atm

D. 1 mm of H_2O column

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938354**

Q.69

टेट्राफ्लूरोएथिलीन को किस नाम से जाना जाता है

A. पर्सपेक्स

B. नाइलॉन-66

C. पॉलिएस्टर

D. टेफ्लॉन

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938398**

Q.70 If p and q are integers and is represented in the form of p/q, then it is a

A. Whole number

B. Rational number

C. Natural number

D. Even number

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938413**

Q.71 DDT stands for

A. Diethyl-diphenyl-trichloromethane

B. Dichloro-diphenyl-trichloromethane

C. Diphenyl-dichloro-trichloromethane

D. Dichloro-diphenyl-trichloroethane

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938402**

Q.72 तरल का वह गुणधर्म जिसके कारण वह अपरूपण का प्रतिरोध करती है.....

A. पृष्ठीय तनाव

B. श्यानता

C. संसंजन

D. घर्षण

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938353**

Q.73 Accumulator of non-biodegradable waste in environment is called?

A. Bioremedation

B. Biosorption

C. Biodegradation

D. Biomagnification

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938417**

Q.74 Cement is a mixture of?

A. Sodium silicate and gypsum

B. Calcium carbonate and sand

C. Sand and clay

D. Calcium aluminates and silicates

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834938401**

Q.75 Which of the following is used for drawing large circles?

A. Divider

B. Trammel

C. Both A & B

D. None of the above

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938383**

Q.76 In throat of a venturi meter, velocity of a fluid

A. Decreases

B. Remains constant

C. Increases

D. Becomes zero

Ans ✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834938382**

Q.77 For a centrifugal pump to operate properly, the NPSH available?

A. Must be less than NPSH required

B. Must be larger than NPSH required

C. Must be equal to or less than NPSH required

D. Does not change with change in the capacity

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938357**

Q.78 What is the value of Sin 45^0

A. 0

B. 1/2

C. $1/\sqrt{2}$

D. $3/\sqrt{2}$

Ans ✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834938414**

Q.79 The loss of head due to sudden expansion of a pipe is given by?

A. $H_L = (V_1^2-V_2^2)/2g$

B. $H_L = (0.5V_1^2)/2g$

C. $H_L = (V_1-V_2)^2/2g$

D. $H_L = (10V_1^2)/2g$

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834938360**

Q.80 The amount of oxygen required to chemically oxidize organic compounds in water is abbreviated as

A. COD

B. PPM

C. PVD

D. HCOF

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834938422**