

Q1: Which of the following is both unitless and dimensionless?

A angle

B solid angle

C mechanical equivalent of heat

D refractive index

Correct Ans: D

Q2: How many astronomical units are there in 1 metre

A 6.68 1012 Au

B 6.68 10-10 Au

C 6.68 1010 Au

D 6.68 10-12 Au

Correct Ans: D

Q3 : A lift is moving up with an acceleration equal to 1/5 of that due to gravity. The apparent weight

of a 60 kg man standing in lift is:

A 60 kg wt

B 72 kg wt

C 48 kg wt

D zero

Correct Ans: B

Q4 : The friction of air causes a vertical resistance of 10% in acceleration due to gravity. The maximum height will be decreased by

A 11%

B 10%

C 9%

D 8%

Correct Ans: C

Q5 : A projectile can have the same range R for two angles of projection. If t1 and t2 can be the times of flight in the two cases then what is the product of the two times of flight?

A t1 t2 R2

B t1 t2 R

C t1 t2 1/R

D t1 t2 1/R2

Correct Ans: B



Q6 : A body is moving with a constant speed 'V' in a circle of radius r. Its angular acceleration is
A vr
B zero C v/r D v/r2
Correct Ans : B
Q7 : If total energy of an earth's satellite is zero, it means that A The satellite is bound to earth B The satellite may no longer be bound to earth's field C The satellite moves away from the orbit along a parabolic path D The satellite escapes in a hyperbolic path
Correct Ans : C  Q8 : A spring balance is graduated on sea level. If a body is weighed with this balance at consecutively increasing heights from earth's surface, the weight indicated by the balance A will go on increasing continuously B will go on decreasing continuously C will remain same D will first increase and then decrease  Correct Ans : B
Q9 : A steel ring of radius r and cross sectional area 'A' is fitted on to a wooden disc of radius R (R > r). If the Young's modulus be Y, then what is the force with which steel ring is expanded? A
В
C
D
Correct Ans : D
Q10: A tuning fork arrangement produces 4 beats/second with one fork of frequency 288 Hz. A little wax is applied on the unknown fork and it then produces 2 beats/s. The frequency of the



unknown fork is......Hz.

A 286

B 292

C 294

D 288

Correct Ans: B

Q11

:

What is the phase difference between velocity and acceleration of a particle executing SHM?

Α0

В

C/2

D / 4

Q12

Correct Ans: C

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A stone is dropped into a lake by a person from a 500m high tower. He would hear the sound after approximately

A 10 sec

B 11.5 sec

C 14 sec

D 21 sec

Correct Ans: B

Q13

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If the values of R=2/5 Cv for a gas, then the atomicity of the gas will be

A mono atomic

B diatomic

C polyatomic

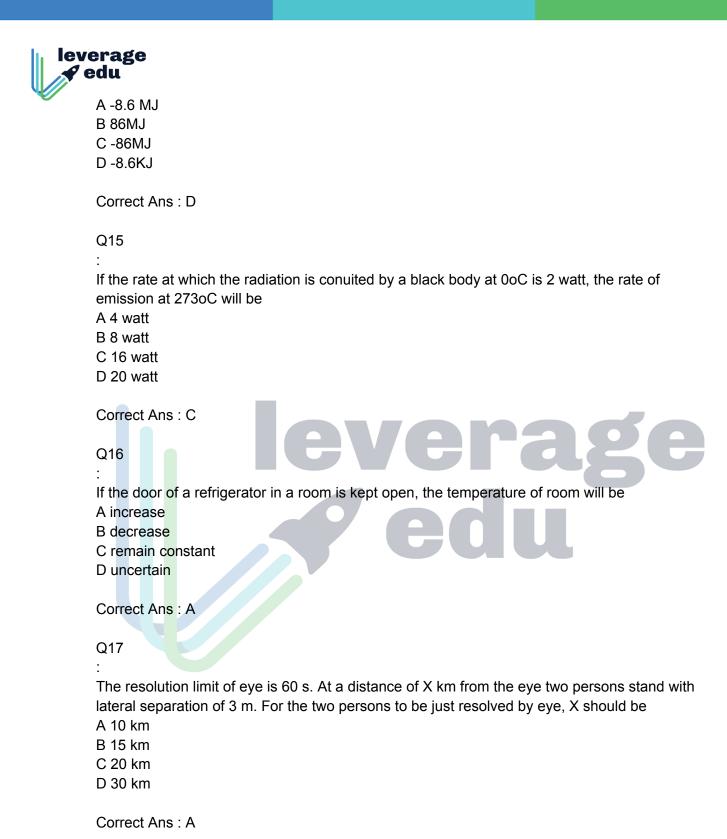
D triatomic

Correct Ans: B

Q14

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A domestic refrigerator is loaded with food and the door closed. During a certain period the machine consumes 1 KWh of energy and the internal energy of the system drops by 5000KJ. Find the net heat transfer for the system.



Convex lens always gives a real image if the object is situated beyond \_\_\_\_ A Optic centre

B Focus

Q18



C Radius of curvature

D Centre of curvature

Correct Ans: B

Q19

:

How many orders will be visible if the wavelength of the incident radiation is 5000 and the number of lines on the grating is 2620 in one inch?

A 20

B 19

C 18

D 15

Correct Ans: B

Q20

.

Huygen's principle of secondary waves is used to

A obtain the wave front geometrically

B explain polarisation

C obtain focal length of thick lenses

D explain dispersion of light

Correct Ans: A

Q21

:

What determines the charge that flows through a circuit due to the induced emf?

A The total change of magnetic flux

B The rate of change in magnetic flux and resistance

C The initial magnetic flux

D The final magnetic flux

Correct Ans: B

Q22

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A pair of coil has a mutual inductance of 2 H, if the current in the primary changes from 10 A to zero in 0.1 S, the induced emf in the secondary will be

A 100 V

B 200 V

C 300 V



D 400 V

Correct Ans: B

Q23

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The unit of relative permittivity is

A C2N-1m-2

B Nm2C-2

C unitless

D NC-2m-2

Correct Ans: C

Q24

.

The frequency of the charged particle circular at right angles to a uniform magnetic field does not depend upon the

A speed of the particle

B mass of the particle

C charge of the particle

D magnetic field

Correct Ans: A

Q25

:

The ratio of the radii of the nuclei 13Al27 and 52Te125 is approximately

A 6:10

B 13:52

C 40:17

D 14:73

Correct Ans: A

Q26

:

If ionising energy of H atom is 13.6eV, then the second ionising energy of He should be

A 13.6eV

B 27.2eV

C 54.4eV

D cannot be predicted.

Correct Ans: C



Q27

•

Radiation of two photons having energies twice and five times the work function of a metal are incident successively on the metal surface. Find out the ratio of maximum velocity of photo electrons emitted in the two cases.

A v1/v2=1/3 B v1/v2=1/4 C v1/v2=1 D v1/v2=½

Correct Ans: D

**Q28** 

:

An electron in Bohr's hydrogen atom has an energy of -3.4 eV. The angular momentum of the electron is:

A h / B h / 2

C nh / 2 (n is an integer)

D 2h /

Correct Ans: A

Q29

.

Weak nuclear forces act on A both hadrons and leptons

B hadrons only

C All particles

D leptons only

Correct Ans: C

Q30

: When boron is bombarded by neutron, alpha particles are emitted. The resulting nucleus has the mass number.

A 11

B 7

C 6

D 15

Correct Ans : B



Q31

.

A piece of an ancient wooden boat shows an activity of C14 of 3.9 disintegrations per minute per

gm of carbon. Estimate the age of the boat, if the half life of C14 is 5.568 years. Assume that the activity of fresh carbon -14 is 15.6 dpm.gm

A 11.136 years

B 8.121 years

C 6.312 years

D 12.631 years

Correct Ans: A

Q32

:

Which of the following transitions in hydrogen atoms emit photons of highest frequency?

A n = 1 to n = 2

B n = 6 to n = 2

C n = 2 to n = 6

D n = 2 to n = 1

Correct Ans: D

Q33

:

The most widely used rectifier is

A Half-wave rectifier

B Centre-tap full-wave rectifier

C Bridge full-wave rectifier

D Quarter-wave rectifier

Correct Ans: C

Q34

.

Connecting a lead from the negative to the positive of a battery will produce

A a high resistance circuit

B a short circuit

C a low current path

D an open circuit

Correct Ans: B

Q35



:

What is the net charge if certain semiconductor losses 4 valence electrons?

A +4

B -4

C +8

D -8

Correct Ans: A

Q36

:

X-rays of wave-length 1.14 A in the first order reflection from a crystal, were reflected at an angle of 30s

The inter planar distance in the crystal is (Sin 30o is 0.5)

A 3.8Ao B 1.14Ao C 0.342Ao

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D 2.28Ao

Correct Ans: B

Q37

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In a flask of 'V' litres, 0.2 moles of O2, 0.4 moles of N2, 0.1 moles of NH3 and 0.3 moles of He gases are present at 27oC. If total pressure exerted by these non-reaching gases is 1 atm, the partial pressure exerted by N2 gas is

A 0.4 atm

B 0.3 atm

C 0.2 atm

D 0.1 atm

Correct Ans: A

Q38

.

The density of O2 is 16 at NTP. At what temperature its density will be 14? consider that the pressure remain the constant at

A 50oC

B 39oC

C 57oC

D 43oC

Correct Ans: B

Q39



:

The correct sequence which shows decreasing order of the ionic radii of the elements is A AI3+> Mg2+> Na+> F-> O2-

B Na+ > Mg2+ > Al3+ > O2- > F-C Na+ > F- > Mg2+ > O2 > Al3+

D O2- > F- > Na+ > Mg2+ > Al3+

Correct Ans: D

Q40

:

IUPAC name of element having atomic number 108 is

A Unniloctium

**B** Ununoctium

C Nilniloctinium

D Ununoctinium

Correct Ans: A

Q41

:

The hybridization of NH3 and NO2

-

A sp3 and dsp2

B sp and sp3

C sp3 and sp2

D spd2 and sp2

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Correct Ans: C

Q42

:

The nature of positive rays depends on

A The nature of discharge tube

B The nature of electrode

C The nature of the gas in the discharge tube

D Pressure of the gas in the discharge tube

Correct Ans: C

Q43

.

One mole of oxygen gas at STP is equal to

A 16 g of oxygen

B 6.022 1023 atoms of oxygen

C 36 g of oxygen



D 12 g of oxygen Correct Ans: B Q44 Mean distance between atoms in the range of A 25 nm B 2.5 nm C 0.25 nm D 0.025 nm Correct Ans: C Q45 What is the mass of 0.5 mole of ozone molecule? A 14 g B 24 g C 12 g D 18 g Correct Ans: B Q46 A sp B sp3 C sp2 D dsp2 Correct Ans: C

The hybridization of sulphur in sulphur dioxide is:

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Q47

Hydrogen bonding is maximum in

A Ethanol

B Diethyl ether

C Ethyl Chloride

D Triethyl amine

Correct Ans: A

Q48

The 3s orbital has

A no node

B 1 node

C 2 nodes

D 3 nodes



Correct Ans: C

Q49

Which parameter always increases during spontaneous change?

A G

B S total

СН

D n(g)

Correct Ans: B

Q50

If an endothermic reaction is non-spontaneous at freezing point of water and becomes feasible at its boiling point, then

A H is -ve, S is +ve

B H and S both are +ve

C H and S both are -ve

DH is + ve, S is -ve

Correct Ans : B

Q51

At constant T and P, which one of the following statements is correct for the

reaction

AH = E

BH<E

CH>E

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D H is independent of the physical state of the reactants

Correct Ans: B

Q52

The binary mixtures having the same composition in liquid and vapour phase and boil at a constant temperature are called

A Solid solutions

B Azeotropes

C Ideal solution

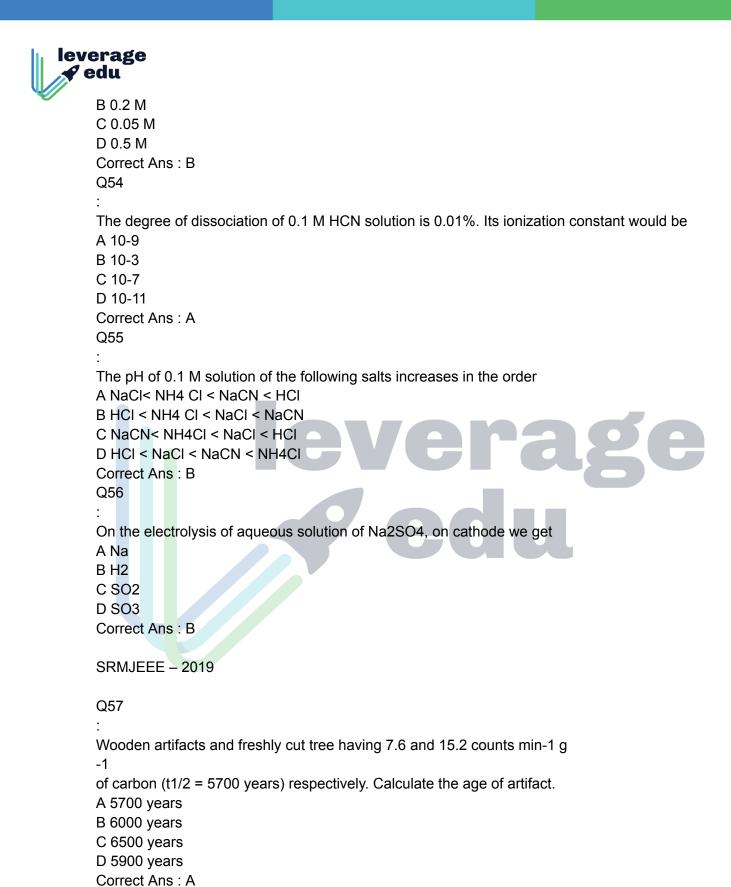
D Zwitter ions

Correct Ans: B

Q53

Molarity of 4.9g of H2SO4 in 250 cm3 solution is

A 0.1 M



In the phenomenon, in which a substance formed in the course of a reaction itself act as a

Q58



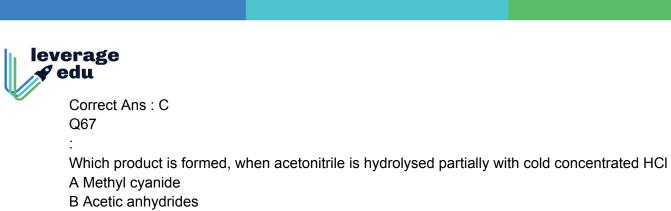
Correct Ans: C

catalyst is called A catalytic poison B autocatalysis C negative catalysis D induced catalysis Correct Ans: B Q59 The green flame of organic compound in Beilstein's test indicates presence of A Nitrogen B Sulphur C Oxygen D Halogens Correct Ans: D Q60 0.207 gram of organic compound gave 0.282 gram of silver bromide when heated with excess of nitric acid and silver nitrate. The percentage of bromine in the organic compound is A 71.57% B 52.28% C 57.97% D 35.45% Correct Ans: C Q61 Carbocation intermediate is involved in reactions, A SN2 reactions B SN1 reactions C E2 Eliminiation D Electrocyclic reaction Correct Ans: B SRMJEEE - 2019 Q62 The mechanism involved in the preparation of glycol from 1,2-dihaloethane using aqueous Na2CO3 is A SN1 attack by OH-B SN2 attack by Br-C SN2 attack by OH-D SN1 attack by Br-



D

Q63 The product formed in the reaction В С D Correct Ans: B Q64 Presence of nitro group in a benzene ring A deactivates the ring towards electrophilic substitution B activates the ring towards electrophilic substitution C renders the ring basic D deactivates the ring towards nucleophilic substitution. Correct Ans: A Q65 Hydrolysis of diazonium salt produces A benzene B phenol C aniline D azobenzene Correct Ans: B SRMJEEE - 2019 Q66 In the Williamsons synthesis for preparation of the compounds used are Α B CH3 - CH2 I + C2H5ONa С



A Methyl cyanide

B Acetic anhydrides

C Acetic acid

D Acetamide

Correct Ans: D

Q68

Which among the following cannot react with nitrous acid?

A CH3 CONH2

B (CH3)3 C-NO2

C (CH3 CH2)2 NH

D CH3 CH2 NH2

Correct Ans: B

Q69

Which of the following statements about addition polymers is correct?

A They are soluble in water.

B They have the same general formula.

C They are formed from monomers with unsaturated C-C bonds.

D They are strong and rigid.

Correct Ans: C

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Q70

Each unit of DNA has

A number of purine nucleotides = number of pyrimidine nucleotides

B purine nucleotides > pyrimidine nucleotides

C pyrimidine nucleotides > purine nucleotides

D varies with person to person

Correct Ans: A

Q71

The values of is

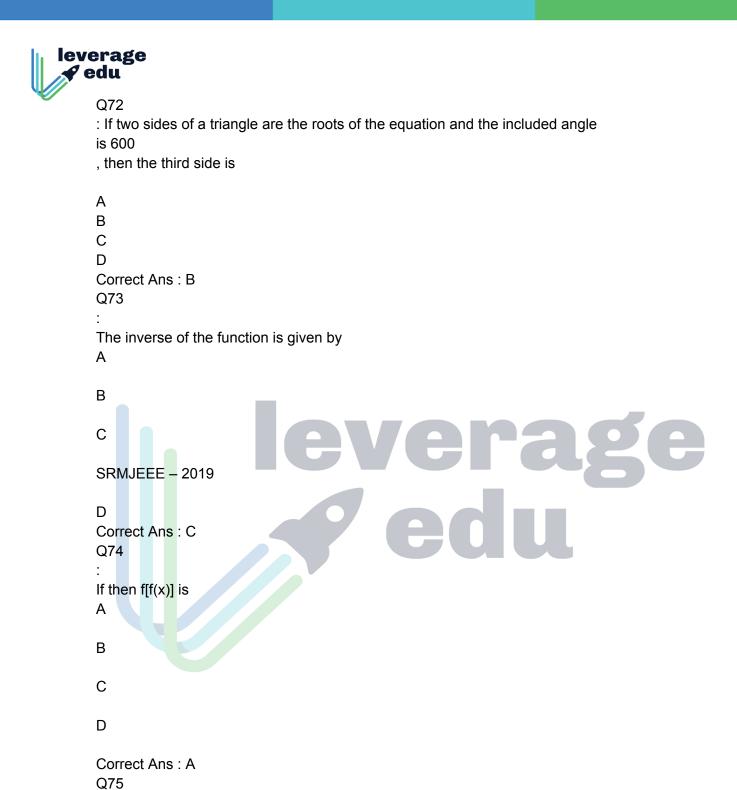
A 1

B 2

C 1 1/8

D 2 1/8

Correct Ans: B

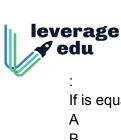


C A circle with centre as origin D A circle with centre other than the origin Correct Ans: B

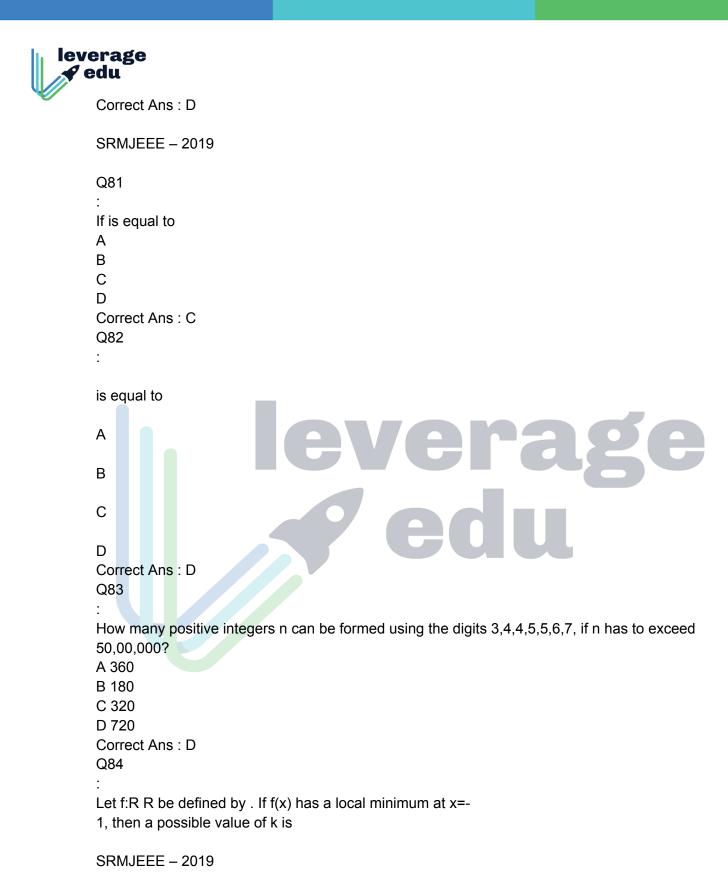
A A straight line paralle to x - axis B A straight line parallel to y - axis

Q76

The points representing the complex numbers Z for which  $|Z + 4|^2 - |Z - 4|^2 = 8$  lie on



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If is equal to
В
С
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D
Correct Ans: C
Q77
Number of integral values of x satisfying x2 - 4x - 21 > 0 and x2 - 9x + 8 < 0 is
B two
C many
D nil
Correct Ans: D
Q78
If A is a non-singular matrix such that AAT = ATA and B = A-1AT
, then matrix B is
A scalar
B orthogonal
C idempotent
D diagonal
Correct Ans : B
Q79
If then A + 4B is
Α
В
С
D
Correct Ans: D
Q80
If I is the unit matrix of order n, where is a constant, then adj(KI) =
A Kn (adj I)
BK (adj I)
C K2 (adj I)
D Kn-1 (adj I)
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A 0 B -1/2 C -1



D 1

Correct Ans: C

Q85

:

is

Ае

4

Ве

2

Се

3

D 1

Correct Ans: A

Q86

:

Find

Α

B C

D

Correct Ans: A

Q87

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A missile fired from ground level rises x metres vertically upwards in 't' seconds and x = t(100-12.5t). Then the maximum height reached by the missile is

A 100 m

B 150 m

C 250 m

D 200 m

Correct Ans: D

Q88

:

If, then

Α

В

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С

D

Correct Ans: B

Q89

Q93

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is equal to
Α
В
С
D
Correct Ans: D
Q90
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Α
В
С
D
Correct Ans: A
Q91
The value of the integral is
A 3/2
B 2
C 1
D 1/2
Correct Ans: A
Q92
The line 4x+6y+9=0 touches y2=4x at the point
A (-3,9/4)
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B (-3,-9/4)
C (9/4,-3)
D (-9/4,-3)
Correct Ans: C
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The circles  $x^2 + y^2 - 4x - 6y - 12 = 0$  and  $x^2 + y^2 + 6x - 8y + 21 = 0$ 



Correct Ans: A

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A intersect at two points
B touches each other externally
C touches each other internally
D neither touches nor intersects
Correct Ans: A
Q94
ABCD is a square A = (1,2), B = (3,-4). If line CD passes through (3,8) then midpoint of CD is
A(2,6)
B (6,2)
C(2,5)
D (24/5, 1/5)
Correct Ans: D
Q95
The eccentricity of a circle e is
A 0
B 1
С
D less than 1
Correct Ans: A
Q96
The equation of the second degree represents a
pair of straight lines, the distance between them is
A 4
В
C 2
Correct Ans: C
Q97
If the circles x2 + y2 + 2x + 2ky + 6 = 0, x2 + y2 + 2ky + k = 0 intersect orthogonally, then k
SRMJEEE – 2019
Α
В
С
D
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Q98

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Consider points A,B,C and D with position vectors respectively, then ABCD

is a

A square

B rhombus

C rectangle

D parallelogram

Correct Ans: B

Q99

: The centre and radius of the sphere are \_\_\_\_

Α

В

С

D Correct Ans : B

Q100

:

The coefficient of skewnes of a distribution is 0.32. If its standard deviation is 6.5 and mean is 29.6, then the mode of the distribution is given by

evera

A 28.48

B 27.52

C 30.46

D 32.14

Correct Ans : B

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Q101

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A box contains 5 red and 4 white balls. Two balls are drawn successively from the box without replacement and it is noted that the second one is white. Then the probability that the first one is white is

A 1/6

B 5/6

C 1/2

D 1/9

Correct Ans: A

Q102

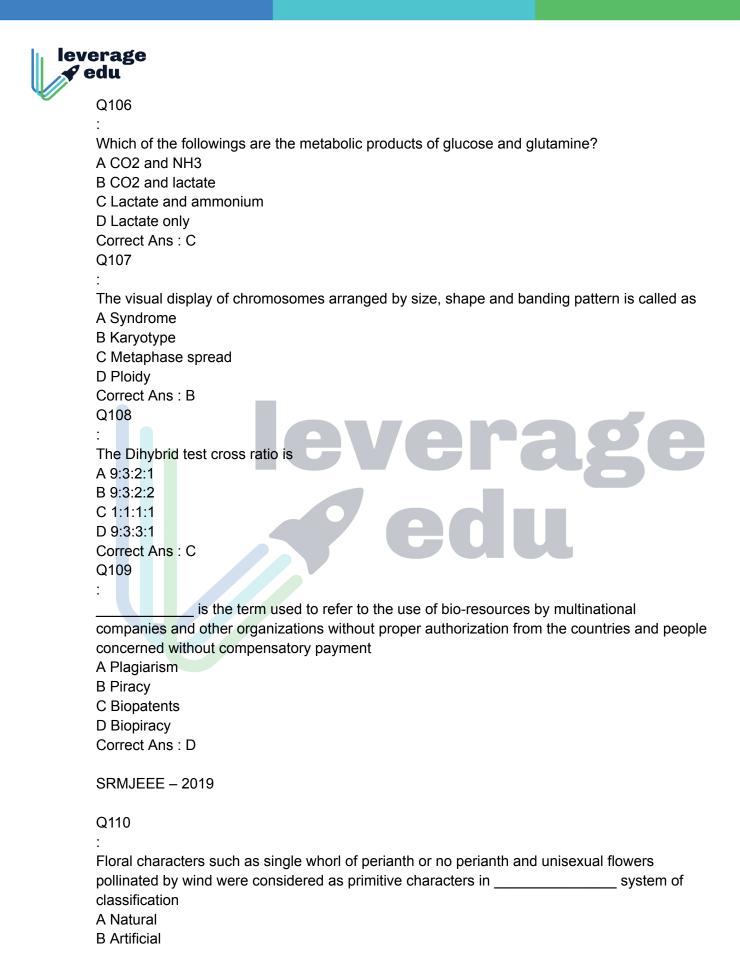
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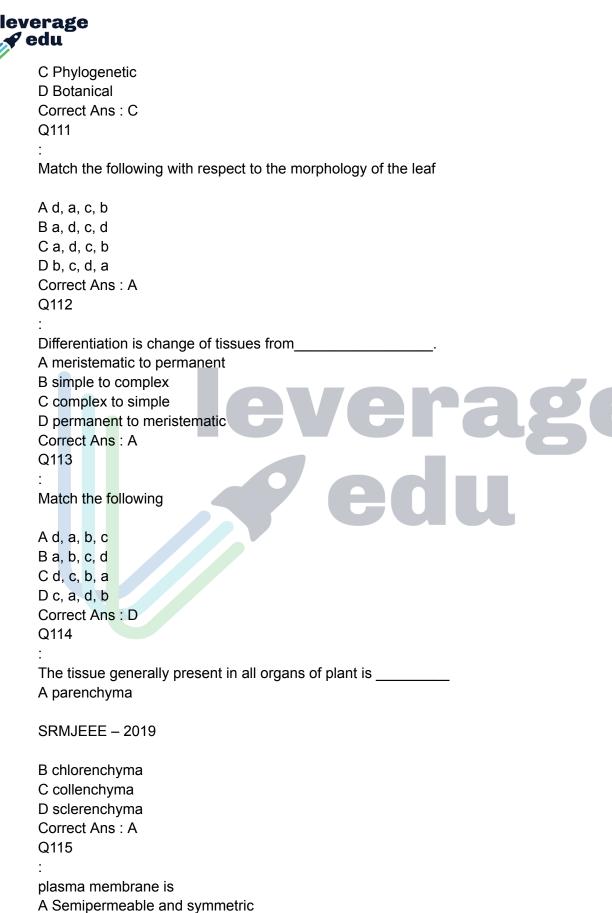
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     If a,b,c are in AP, then a3+c3-8b3
     is equal to
     A 2abc
     B 4abc
     C 6abc
     D 8abc
     Correct Ans: C
     Q103
     In a G.P if the (m+n)th term is p and (m-n)th term is q then its mth term is
     A -1
     B pq
     С
     D
     Correct Ans: C
     Q104
     Find the 4th term in the expansion of (-3a - b)5
     A 9a2b
     3
     B 30a2b
     C -90a2b
     D 90a2b
     Correct Ans: D
     Q105
     If the pth, qth, rth terms of an A.P are in G.P, then the common ratio of the G.P is
     Α
     SRMJEEE - 2019
     В
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С

Correct Ans: D







B Selectively permeable, elastic and asymmetric

C Permeable and asymmetric

D Selective permeable with monolayer phospholipids

Correct Ans: B

Q116

:

Eukaryotes differ from Prokaryotes in mechanism of DNA replication due to

A Different enzyme for synthesis of lagging and leading strand

B Use of DNA Primer rather than RNA primer

C Unidirectional rather than bidirectional replication

D Discontinuous rather than semi discontinuous replication

Correct Ans: D

Q117

:

The equipment which introduces DNA into cells is

A laser

B DNA probe

C gene gun

D needle

Correct Ans: C

Q118

:

Restriction endonucleases

A Are used for invitro DNA synthesis

B Are synthesized by bacteria as part of defense mechanism

C Are present in mammalian cells for degradation of DNA when the cells dies

D Are used in genetic engineering for ligating two DNA molecules

Correct Ans: B

Q119

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Zeatin isolated from

A Rice

B Wheat

C Agrobacterium

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D Maize

Correct Ans: D

Q120

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An example of C4 plant is

A Coconut

B Mango



C Rice

D Sugarcane

Correct Ans : D

Q121

:

The rate of growth of plants can be measured by a

A Manometer

**B** Auxanometer

C Photometer

D Thermometer

Correct Ans: B

Q122

.

Which of the following is not a C4 plant?

A Maize

**B** Tribulus

C Amaranthus

D Wheat

Correct Ans: D

Q123

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Dark respiration is the function of

A peroxisomes

B mitochondria

C chloroplast

D ribosomes

Correct Ans: B

Q124

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Genetically modified crops can be produced by

A somatic hybridisation

B recombinant DNA technology

C crossbreeding

D micropropagation

Correct Ans: B

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Q125

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Maximal application of animal cell culture techniques is in the production of

A Insulin

B Edible protein

C Vaccines



D Interferons Correct Ans: C Q126 The most quickly available source of nitrogen to plants are A amide fertilizers B ammonia fertilizers C nitrate fertilizers D ammonia nitrate fertilizer Correct Ans: C Q127 One of the major difficulties in the biological control of insect pest is that A the method is less effective as compared with the use of insecticides B the practical difficulty of introducing the predator to specific areas C the predator develops a preference to other diets and may itself become a pest D the predator does not always survive when transferred to a new environment Correct Ans: D Q128 The backflow of blood into right auricle during ventricular systole is regulated by A Tricuspid valve B Mitral valve C Semilunar valve D Aortic valve Correct Ans: A Q129 RBC placed in 0.9 1.5% Nacl solution, its volume A Increases **B** Decreases C Unchanged D Insufficient information Correct Ans: A **SRMJEEE – 2019** Q130 Right auricle of the mammalian heart release blood through

A Tricuspid valve

B Vena cava

C Pulmonary valve

D Mitral valve



Correct Ans: A

Q131

.

Chronic Obstructive Lung Disease (COLD) is a condition due to

A Common Viral Infection

B Chronic Bronchitis & Emphysema

C Untreatable bacterial Infection

D Acute Bronchitis with inflammation

Correct Ans: B

Q132

.

Digested food material is absorbed and taken to liver by

A Hepatic portal vein

B Hepatic portal artery

C Renal vein

D Renal artery

Correct Ans: A

Q133

:

A genetically engineered microorganism used successfully in bioremediation of oil spills is a

species of

A Trichoderma

B Bacillus

C Xanthomonas

D Pseudomonas

Correct Ans: D

Q134

:

First vitamin to be produced through fermentation process using a wild bacterium was

A Vitamin D

B Vitamin C

C Vitamin B2

D Vitamin B12

Correct Ans: B

Q135

.

The following are true about culture media for microbes:

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A Lowensten-Jensen medium is used to isolate mycobacteria

B Thioglycolate broth allows only anaerobes to grow

C MacConkey agar prevents the growth of Gram negative bacteria

D Sabouraud's culture is useful for culturing bacterial infection

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Correct Ans: A

Q136

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Lysozyme:

A Splits peptidoglycan

B Is a cytoplasmic organelle

C Is a proteolytic enzyme

D Activates complement proteins

Correct Ans: A

Q137

:

Which of the following waste include mixture of biodegradable and non biodegradable waste?

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A food waste

B metallic waste

C mining waste

D municipal waste

Correct Ans : D

Q138

:

Acid rain mainly result from

A Sulfur dioxide

B Carbon dioxide

C Carbon monoxide

D Ammonia

Correct Ans: A

Q139

•

Animal pharming can be defined as

A Growing animals for farming

B Generating transgenic animals for farming

C Programming animals to produce novel products

D Treatment for farming animals

Correct Ans: C

Q140

•

Dinosaurs were abundant in

A Jurassic period

B Devonian period

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C Permian period D Pleistocene period Correct Ans : A

