SRMJEEE 2017 Question Paper with Answer Key

SRM Joint Engineering Entrance Examination - SRMJEEE

Q1 : _____ system of units was accepted by the scientist of the general conference on weights and measures.

A FPS

B CGS

C MKS

D SI

Correct Ans : **D**

Q2 : The SI unit of gravitational constant is _____

A Nm kg

B $Nm^2 kg^{-2}$

C Nm^2 kg

D $N^{-1} m^{-2}$ kg

Correct Ans : **B**

Q3 : A Circular disc is rotating with angular velocity ω. A man standing at the edge walks towards the centre of the disc then the angular velocity ω.

A Decreases

B Increases

C No change

D Halved

Correct Ans : **B**

Q4 : For ordinary terrestial experiments, the observer in an inertial frame in the following cases is

A giant revolving in giant wheel

B a driver in sports car moving with constant speed of 200 km / h on a straight road

C the pilot of an aeroplane which is taking off

D a cyclist negotating a sharp curve

Correct Ans : **B**

Q5 : The two factors on which the momentum of a body depends are _____ and _____ .

A Velocity, time

B Mass,weight

C Mass, distance

D Mass, velocity

Correct Ans : **D**

Q6 : Two forces of magnitude 5 N and 10 N act on a wooden block of mass 2 kg. If 5 N force acts towards right and 10 N force acts towards left, which one of following statements is correct?

A Resultant force is 15 N towards left.

B Resultant force is 15 N towards right.

C Resultant force is 5 N towards right.

D Resultant force is 5N towards left.

Correct Ans : **D**

Q7 : What is the dimension of stress?

A MLT^{-2}

B $ML^{-1}T^{-2}$

C MLT^{-1}

D $M^{-1}LT^{-1}$

Correct Ans : **B**

Q8 : If the temperature of a liquid is raised, then its surface tension is _____

A decreased

B increased

C does not change

D equal to viscosity

Correct Ans : **A**

Q9 : Equal masses of two substances of densities ρ_1 and ρ_2 are mixed together. The density of the mixture would be

A $\frac{1}{2}(\rho_1 + \rho_2)$

B $\sqrt{\rho_1 \rho_2}$

C $\frac{\rho_1 \rho_2}{\sqrt{(\rho_1 \rho_2)}}$

D $\frac{2\rho_1 \rho_2}{(\rho_1 + \rho_2)}$

Correct Ans : **D**

Q10 : For aluminium the bulk modulus of elasticity is 7.5×10^{10} N/m^2 and density is 2.7×10^3 kg/m^2. The velocity of longitudinal waves is aluminium is

A 2.63 m/s

B 5.27×10^3 m/s

C 10.5×10^3 m/s

D 7.5 × 10^3 m/s

Correct Ans : **B**

Q11 Which of the following does not show polarization?
:

A Transverse wave in gas

B Longitudinal in gas

C Longtudinal in solids

D Transverse wave in liquids

Correct Ans : **B**

Q12 The end correction for the vibrations of air column in a tube of circular cross-section will be more if the tube is,
:

A reduced in length

B increased in length

C made thinner

D indexed

Correct Ans : **D**

Q13 A given mass of a gas is at pressure P and absolute temperature T. The isothermal bulk modulus of the gas is
:

A P

B 2/3 P

C 3/2 P

D 2P

Correct Ans : **A**

Q14 A spherical black body of radius 12cm radiates 450W power at 500K. If the radius is one half and the temperature doubled, the power radiated in watt will be
:

A 225

B 450

C 900

D 1800

Correct Ans : **D**

Q15 The expression for the efficiency of a carnot's engine is
:

A $1-(T_1/T_2)$

B 1-T

C $(T_2/T_1)-1$

D $1-(T_2/T_1)$

Correct Ans : **D**

Q16 Which of the following is adiabatic gas equation?
:

A PV = Const

B PV^{γ} = Const

C $PV^{\gamma-1}$ = Const

D $P \propto 1/V$

Correct Ans : **B**

Q17 _____ is defined as the angle of incidence in the denser medium for which the
: corresponding angle of refraction in the rarer medium is 90°

A critical angle

B shearing angle

C polarising angle

D dip angle

Correct Ans : **A**

Q18 The velocity of light in vacuum is _____
:

A $\sqrt{\mu_0 \epsilon_0}$

B $\frac{1}{\sqrt{\mu_0 \epsilon_0}}$

C $\mu_0 \epsilon_0$

D $\frac{1}{\mu_0 \epsilon_0}$

Correct Ans : **B**

Q19 The line joining the pole of the mirrors and its centre of curvature is called _____
:

A Principal focus

B Principal axis

C Radius of curvature

D Optic axis

Correct Ans : **D**

Q20 Light of wavelength 5500 Å from narrow slit is incident on a double slit. The overall separation
: of 5 fringes on a screen 200 cm away is 1 cm. Calculate slit seperation.

A 0.055 cm

B 0.055 m

C 0.55 cm

D 0.55 m

Correct Ans : **A**

Q21 The core used in a transformer is laminated in order to :

A increase magnetic field

B increase residual magnetism

C decrease the eddy currents in the core

D increase the eddy currents in the core

Correct Ans : **C**

Q22 In a superconductor, critical magnetic field :

A increases if temperature decreases

B does not depend on temperature

C increases if temperature increases

D remains constant

Correct Ans : **A**

Q23 A wire is cut into 4 pieces, which are put together side by side to obtain one conductor. If the : original resistance of the wire was R, the resistance of the bundle will be:

A R/4

B R/8

C R/16

D R/32

Correct Ans : **C**

Q24 Magnetic lines of force _____ :

A can not intersect at all

B intersect within the magnet

C intersect only at south and north poles

D intersect at neutral point only

Correct Ans : **A**

Q25 In ruby laser, some of aluminium ions are (Al^{3+})replaced by :

A Copper ions (Cu^{3+})

B Chromium ions (Cr^{3+})

C Calcium ions(Ca^{3+})

D None

Correct Ans : **B**

Q26 Special theory of relativity treats problem involving :

A Inertial frame of reference

B Non- inertial frame of reference

C Non- accelerated frame of reference

D Accelerated frame of reference

Correct Ans : **A**

Q27 The time interval between two event in a reference frame which is in motion is :

A Maximum

B Minimum

C No interval

D None

Correct Ans : **A**

Q28 According to theory of relative mass of an object is :

A Depends on particles

B Speed of light

C Volume of object

D Area of object

Correct Ans : **B**

Q29 The nucleus which is an isotope of $C1_{17}$ and also an isobar of Ar_{18} has mass number A and atomic number Z given by _____

A A = 35, Z = 18

B A = 37, Z = 17

C A = 39, Z = 17

D A = 37, Z = 19

Correct Ans : **C**

Q30 Which source is accociated with line emission spectrum? :

A electric fire

B red traffic light

C neon street lite

D sun

Correct Ans : **B**

Q31 : Plutonium decays with half time 24000 yr. If plutonium is stored after 72000 yr, the fraction of it that remains _____

A 1/2

B 1/9

C 1/12

D 1/8

Correct Ans : **D**

Q32 : If a 46 gm golf ball has velocity 36 m/s and an electron with velocity 10^7 m/s. Which of these two show wave character?

A Electron

B Golf ball

C Both electron and golf ball

D Both do not show wave character

Correct Ans : **A**

Q33 : What is the net charge if a certain semiconductor losses 4 valence electrons?

A +4

B -4

C +8

D -8

Correct Ans : **A**

Q34 : If the feedback fraction of an amplifier is 0.01, then voltage gain with negative feedback is approximately _____

A 500

B 100

C 1000

D 5000

Correct Ans : **B**

Q35 : Electromagnetic waves transport

A Wavelength

B Charge

C Frequency

D Energy

Correct Ans : **D**

Q36 : The pyknometric density of sodium chloride crystal is 2.165 × 10^3 kg m^{-3} while its X-ray density is 2.178 × 10^3 kg m^{-3}. The fraction of the unoccupied sites in sodium chloride crystal is

A 5.96

B 5.96 × 10^{-1}

C 5.96 × 10^{-2}

D 5.96 × 10^{-3}

Correct Ans : **D**

Q37 : The sharp melting point of a crystalline solid is due to

A Regular arrangement of constituent particles observed over a short distance in the crystal lattice

B Regular arrangement of constituent particles observed over a long distance in the crystal lattice

C Same arrangement of constituent particles in different directions

D Different arrangement of constituent particles in different directions

Correct Ans : **B**

Q38 : The de Broglie wavelengths of electron waves in two orbits is 3:5. The ratio of kinetic energy of electrons will be

A 3:5

B 5:3

C 25:9

D 9:25

Correct Ans : **C**

Q39 : Which of the following is atypical element?

A Li

B Na

C F

D N

Correct Ans : **C**

Q40 : Which one of the following sets of elements has the strongest tendency to form negative ions in gaseous state?

A Na, Mg, Al

B Ca, V, Cr

C N, O, F

D Ga, In, Tl

Correct Ans : **C**

Q41 The correct order of second ionization potential of carbon, nitrogen, oxygen and fluorine is :

A C > N > O > F

B O > N > F > C

C O > F > N > C

D F > O > N > C

Correct Ans : **C**

Q42 A neutral atom (Atomic number > 1) consists of :

A Only protons

B Neutrons + protons

C Neutrons + electrons

D Neutrons + proton + electrons

Correct Ans : **D**

Q43 The total number of electrons that can be accomdated in the fourth principal energy level is_____ :

A 2

B 8

C 18

D 32

Correct Ans : **D**

Q44 0.0025 has _____ significant figure :

A 1

B 2

C 3

D 4

Correct Ans : **B**

Q45 The values of four quantum numbers of valence electron of an element are n = 4, l = 0, m = 0 and s= + 1 / 2. The element is : :

A Na

B K

C Ti

D Sc

Correct Ans : **B**

Q46 The molecular formula of dithionic acid is :

A $H_2S_2O_4$

B $H_2S_2O_6$

C $H_2S_2O_5$

D $H_2S_2O_7$

Correct Ans : **B**

Q47 Which of the following species has the maximum bond order?
:

A O_2

B O_2^-

C O_2^{2-}

D O_2^+

Correct Ans : **D**

Q48 The least metallic of the S block element is
:

A Be

B Li

C Mg

D Na

Correct Ans : **A**

Q49 The relationship between equilibrium constant K and free energy change of the process is given
: by

A $\Delta G = -RT \log K$

B $\Delta G^o = RT \log 1/K$

C $\Delta G^o = 2RT \log K$

D $\Delta G^o = 2.303\ RT \log K^{-1}$

Correct Ans : **D**

Q50 Which of the following salt will have same value of Vant Hoff's factor, 'i' as that of $K_4[Fe(CN)_6]$?
:

A $Al_2(SO_4)_3$

B NaCl

C $Al(NO_3)_3$

D Na_2SO_4

Correct Ans : **A**

Q51 Identify the correct statement regarding a spontaneous process
:

A For a spontaneous process in an isolated system, the change in entropy is positive

B Endothermic processes are never spontaneous

C Exothermic processes are always spontaneous

D Lowering of energy in the reaction process is the only criterion for spontaneity

Correct Ans : **A**

Q52 Osmotic pressure is a colligative property because it :

A Depends on the number of solution particles and not on its nature

B Deponds on the identify of the solute and not on its number

C Deponds both nature and number of solute particles

D Is independent of nature and number of solute particles

Correct Ans : **A**

Q53 According to Henry's law, the volume of a gas dissolved in a solvent at a given temperature is :

A dependent of pressure

B independent of concentration

C dependent of concentration

D independent of pressure

Correct Ans : **D**

Q54 The correct order of increasing basicity of the given conjugate bases (R = CH_3) is :

A $RCOO^- < HC\equiv C^- < R^- < NH_2^-$

B $R^- < HC\equiv C^- < RCOO^- < NH_2^-$

C $RCOO^- < NH_2^- < HC\equiv C^- < R^-$

D $RCOO^- < HC\equiv C^- < NH_2^- < R^-$

Correct Ans : **D**

Q55 Phenolphthalein can be used to determine p^H over the range of :

A 0-2

B 2-4

C 4-6

D 8-10

Correct Ans : **D**

Q56 When sodium acetate is added to acetic acid, the degree of ionisation of acetic acid :

A increases

B decreases

C does not change

D becomes zero

Correct Ans : **B**

Q57 : The rays from the radioactive element which gets deflected to the positive pole under strong electric field are called

A alpha rays

B beta rays

C gamma rays

D delta rays

Correct Ans : **B**

Q58 : Which of the following relation between average life period (ℓ) and the disintegration constant (λ) and the disintegration constant (λ) of the radio element is correct

A $l = 1/\lambda$

B $l = \lambda$

C $l = -\lambda$

D $l\lambda = 0$

Correct Ans : **A**

Q59 : In paper chromatography, the stationary and mobile phases are

A both liquids

B solid and liquid respectively

C liquid and solid respectively

D both solids

Correct Ans : **A**

Q60 : Process in which solid is directly converted to vapors state is called

A Filtration

B Distillation

C Solvation

D Sublimation

Correct Ans : **D**

Q61 : If a bond breaks in such a way that both electrons remain with one fragment, the mechanism is called

A Heterolytic

B Homolytic

C Electrocyclic

D Pericyclic

Correct Ans : **A**

Q62 : The isocyanates obtained in the reaction of Hoffman, Curtius, Lossen and Schimdt. Hydrolysed to give

A Amides

B Amines

C Acids

D Cyanides

Correct Ans : **B**

Q63 : Olefin means

A ethene

B unsaturated

C oil forming

D having tripple bond

Correct Ans : **C**

Q64 : Select the substance which has only one Pi (π) bond in its molecule.

A Acetylene

B Acrolein

C Propene

D 2-Butenoic acid

Correct Ans : **C**

Q65 : Which of the following reagents can convert acetone to acetic acid?

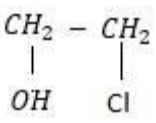
A $AgNO_3$; NH_4OH

B $LiAlH_4$

C Conc. HCl

D I_2 , NaOH; dilute HCl

Correct Ans : **D**

Q66 :  on boiling with NaOH gives

A Ethanal

B Ethanol

C Glycol

D 2 - propanone

Correct Ans : **C**

Q67 Gabneil's pthalimide reaction is used for the synthesis of
:

A aromatic 1^{o} amines

B aliphatic 1^{o} amines

C aromatic 2^{o} amines

D aliphatic 2^{o} amines

Correct Ans : **B**

Q68 RMgX + CN Cl $\rightarrow$ X. X is
:

A NCO

B NC

C CN

D Cl^{-}

Correct Ans : **C**

Q69 Butadiene and styrene undergoes joint polymerization to form
:

A SBR rubber

B Neoprene

C Thiokol

D Hypalon

Correct Ans : **A**

Q70 What are the structural units of proteins?
:

A Amylopectin

B Equal portion of sugar and amino acids

C Amino acids

D Glucose

Correct Ans : **C**

Q71 In a town of 1000 families it was found that 40% families buy India Today, 20% families buy
: 'Frontline' and 10% families buy the week. 5% buy India today and frontline, 3% buy Frontline and the Week and 4% buy the Week and India Today. If 2% families buy all the 3 magazines, the number of families which buy Frontline only is

A 330

B 140

C 300

D 200

Correct Ans : **B**

Q72 If tan (A + B) = m and tan (A - B) = n then value of tan 2A is :

A $\frac{m+n}{1-mn}$

B $\frac{m+n}{1+mn}$

C $\frac{mn}{1-mn}$

D $\frac{mn}{1+mn}$

Correct Ans : **A**

Q73 :

The domain of definition of $f(x)=\frac{log_2(x+3)}{x^2+3x+2}$ is

A R-[01,-2]

B (-2,∞)

C R-{-1,-2,-3}

D (-3,∞)-(-1,-2)

Correct Ans : **D**

Q74 :

If A and B are two sets such that $n(A\cup B)$ =36, $n(A\cap B)$ =16 and n(A-B)=15, then n(B) is equal to

A 21

B 31

C 20

D 52

Correct Ans : **A**

Q75 If every pair from among the :

equations $x^2+px+qr=0, x^2+qx+rp=0 \text{ and } x^2+rx+pq=0$ has a common root then the product of three common roots is

A pqr

B 2pqr

C $p^2 q^2 r^2$

D $\sqrt{pqr}$

Correct Ans : **A**

Q76 If z and ω are non-zero complex numbers such that $|z\omega| = 1 \; and \; \arg(z) - \arg(\omega) = \frac{\pi}{2}, then \; \bar{z}\omega$ is equal to

A 1

B -1

C i

D -i

Correct Ans : **D**

Q77 If $\left[\frac{\frac{\sqrt{3}}{2}+\left(\frac{1}{2}\right)i}{\frac{\sqrt{3}}{2}-\left(\frac{1}{2}\right)i}\right]^{120} = p + iq$, then

A $p = cos20^o, q = sin\ 20^o$

B $p = -cos20^o, q = -sin\ 20^o$

C $p = cos20^o, q = -sin\ 20^o$

D $p = 1, q = 0$

Correct Ans : **D**

Q78 If $A = \begin{pmatrix} 1 & 1 \\ 1 & 1 \end{pmatrix}$ and $n \in N$ then A^n is equal to

A 2^nA

B $2^{n-1}A$

C nA

D none of these

Correct Ans : **B**

Q79 If a, b, c are sides of a triangle and $\begin{vmatrix} a^2 & b^2 & c^2 \\ (a+1)^2 & (b+1)^2 & (c+1)^2 \\ (a-1)^2 & (b-1)^2 & (c-1)^2 \end{vmatrix} = 0$ then ΔABC is

A equilateral

B right angled isoceles

C isoceles

D right angled

Correct Ans : **C**

Q80 Which of the following is not elementory transformation?

A $R_i \leftrightarrow R_j$

B $R_i \longrightarrow 2R_i + R_j$

C $C_i \longrightarrow C_j + C_i$

D $R_i \longrightarrow R_i + C_j$

Correct Ans : **D**

Q81 : If $\Delta = \begin{vmatrix} 1 & 2 & 3 \\ 2 & 5 & 7 \\ 3 & 9 & 13 \end{vmatrix}$ and $\Delta' = \begin{vmatrix} 7 & 20 & 29 \\ 2 & 5 & 7 \\ 3 & 9 & 13 \end{vmatrix}$ then

A $\Delta'=3\Delta$

B $\Delta' = \frac{3}{\Delta}$

C $\Delta'=\Delta$

D $\Delta'=2\Delta$

Correct Ans : **C**

Q82 : How many different signals can be given by using any number of flags from six flags of different colors?

A 1236

B 516

C 720

D 1956

Correct Ans : **D**

Q83 : If $\forall$ n $\in$ N,
Let p(n) = 1 + 3 + 5 +....+(2^n-1) = 3 + n^2 then which of the following is true?

A p(1) is true

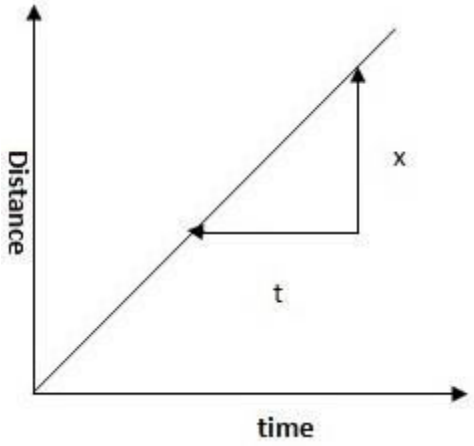
B p(k) is true $\Rightarrow$ p(k + 1) is true

C p(k) is true, p(k + 1) is not true

D p(k) is not true $\Rightarrow$ p(k + 1) is true

Correct Ans : **B**

Q84 : The following graph gives the functional relationship between distance and time of a moving car in m/sec. The speed of the car is



A x/t m/s

B t/x m/s

C dx/dt m/s

D dt/dx m/s

Correct Ans : **A**

Q85 : $\lim_{x\to\infty}\left(cosec\, x-\frac{1}{x}\right)=$

A 0

B 1

C 3

D 5

Correct Ans : **A**

Q86 : The set of points, where $f(x)=\frac{x}{1+|x|}$ is differentiable, is:

A $(-\infty,-1)\cup(-1,\infty)$

B $(-\infty,\infty)$

C $(0,\infty)$

D $(-\infty,0)\cup(0,\infty)$

Correct Ans : **B**

Q87 : The angle of intersection of the curves $y=x^3$ and $6y=7-x^2$ at (1,1) is

A $\frac{\pi}{4}$

B $\frac{\pi}{3}$

C $\frac{\pi}{2}$

D $\frac{\pi}{6}$

Correct Ans : **C**

Q88 : If [x] is the greatest integer function then $\int_{-2}^{2}[x]^3 dx =$ _____

A 0

B -8

C -1

D -4

Correct Ans : **C**

Q89 : Let f(2a - x) = -f(x). then $\int_{0}^{2a} f(x)dx =$

A f(x)

B 0

C $2\int_{0}^{a} f(x)dx$

D f(2a - x)

Correct Ans : **B**

Q90 The are bounded by y = x - 1 and y = 3 - x is **:**

A 2

B 3

C 4

D 1

Correct Ans : **C**

Q91 The P.I of $(D^2 + 4)$ y = sin h2x is **:**

A y = 1/8 sin h 2x

B y = 1/4 sin h 2x

C y = -1/8 sin h 2x

D y = -1/4 sin h 2x

Correct Ans : **A**

Q92 : A focal chord of the parabola $y^2 = 8x$ in inclined to x-axis at an angle $\tan^{-1} 3$. Then its length is equal to:

A 80/3

B 80/9

C 40/3

D 40/9

Correct Ans : **B**

Q93 : The length of the intercept made by the circle $x^2 + y^2 - 12x + 14y + 11 = 0$ on x-axis is

A 6

B 10

C 8

D 4

Correct Ans : **B**

Q94 : The equation of the normal to the ellipse $\frac{x^2}{10} + \frac{y^2}{5} = 1$ at $(\sqrt{8}, 1)$ is

A 10x + 5y = 1

B $y = \sqrt{2}(x + 1)$

C $x = \sqrt{2}(y + 1)$

D $y = \sqrt{8}(x + 1)$

Correct Ans : **C**

Q95 : Equation of the parabola whose vertex and focus lie on the axis of x at distances a and a_1 from the origin respectively is

A $y^2 = 4(a_1 - a)x$

B $y^2 = 4(a_1 - a)(x - a)$

C $y^2 = 4(a_1 - a)(x - a_1)$

D $y^2 = 4(a - a_1 x)$

Correct Ans : **B**

Q96 : If $x = -2 + 3\cos\theta$; $y = 1 + 3\sin\theta$ then the locus of the point (x,y) is a circle with

A centre at (-2,1) and radius = 3

B centre at (2,1) and radius = 3

C centre at (2,-1) and radius = 9

D centre at (-2,1) and radius = 9

Correct Ans : **A**

Q97 : If one of the lines $ax^2+2hxy+by^2=0$ bisects the angle between positive directions of the axes then a,h,b satisfy the relation

A a+b=-2h

B $(a-b)^2=4h^2$

C a+b=2|h|

D (a-b)=2|h|

Correct Ans : **A**

Q98 : A unit vector coplanar with $\vec{i}+\vec{j}+2\vec{k}$ and $\vec{i}+2\vec{j}+\vec{k}$ and perpendicular to $\vec{i}+\vec{j}+\vec{k}$ is

A $-\vec{j}+\vec{k}$

B $\frac{1}{\sqrt{2}}(-\vec{j}+\vec{k})$

C $\frac{1}{3}(-\vec{j}+\vec{k})$

D $\frac{1}{\sqrt{3}}(-\vec{j}+\vec{k})$

Correct Ans : **B**

Q99 : If angle between $\vec{i}-2\vec{j}+3\vec{k}$ and $2\vec{i}+\vec{j}+3\vec{k}$ is θ then $\sin\theta$ equals

A $\frac{5}{\sqrt{7}}$

B $\frac{5}{21}$

C $\frac{5}{2\sqrt{7}}$

D $\frac{5}{\sqrt{14}}$

Correct Ans : **C**

Q100 : If P(A) = 1/3, P(B) = 3/4 and $P(A \cup B) = 11/12$, then P(A/B) is

A 1/9

B 1/4

C 2/9

D 5/9

Correct Ans : **C**

Q101 The geometric mean $3,3^2 ..... 3^n$ is
:

A $3^{n/2}$

B $3^{(n+1)/2}$

C $3^{n(n+1)/2}$

D 3^n

Correct Ans : **B**

Q102 what is the product of three Geometric mean between 4 and 1/4 ?
:

A 0

B 1

C 2

D -1

Correct Ans : **B**

Q103 If the three successive coefficients in the binomial expansion of $(1+x)^n$ are 28,56 and 70
: respectively then n equals

A 4

B 6

C 8

D 10

Correct Ans : **C**

Q104 If the sum of first n positive integer is 1/(5) times the sume of their squares, then n equals
:

A 5

B 6

C 7

D 8

Correct Ans : **C**

Q105 The middle term in the expansion of $(x + 1/x)^{2n}$ is 1.3.5 . . . (2n-1)/2n!
:

A 1.3.5...(2n-1)(2n)/n!

B $1.3.5...(2n-1)/n!.2^n$

C $2n!/n!.2^n$

D none of the above

Correct Ans : **B**

Q106 Excess CO_2 suppress cell growth and productivity by?
:

A inhibiting respiration

B changing osmolarity of medium

C increasing bacterial contamination

D altering pH of the medium

Correct Ans : **A**

Q107 The size of the chromosome is measured during
:

A Interphase

B Prophase

C Metaphase

D Anaphase

Correct Ans : **C**

Q108 In gene cloning which of the following are used as vehicles for carrying foreign DNA fragment
:

A Host cell

B Restriction enzymes

C Adaptor

D Vector

Correct Ans : **D**

Q109 The total number of cells in a culture is counted using the trypan blue exclusion assay and is found to be 2.7 x 10^6 cells/ml. The culture is diluted 1:27 and then 100μl seeded per well into a 96 well plate. What is the final cell density per well?
:

A 1 x10^5

B 2.7 x 10^4

C 2.7 x 10^5

D 1 x 10^4

Correct Ans : **D**

Q110 Family tree can be constructed by
:

A Cloning

B Karyotyping

C DNA sequencing

D Pedigree analysis

Correct Ans : **D**

Q111 The plant having milky latex is
:

A *Phyllanthus emblica*

B *Ricinus communis*

C *Jatropha curcas*

D *Euphorbia tirucalli.*

Correct Ans : **D**

Q112 Among the following which is tree?
:

A Phyllanthus amarus

B Ricinus communis

C Phyllanthus emblica

D Euphorbia antiquorum

Correct Ans : **C**

Q113 Which among the following members is not economically important as a food?
:

A Solanum tuberosum

B Solanum melongena

C Lycopersicon esculentum

D Solanum trilobatum

Correct Ans : **D**

Q114 Pick the incorrect statement with respect to xylem parenchyma
:

A The cell wall is thin and made up of cellulose

B The cells store food reserves

C The cells assist in conduction of water

D The cells are dead at maturity

Correct Ans : **D**

Q115 Choose the best option that gives the correct match for the terms given in the columns.
:

Annular	1	Spring
Scalariform	2	Ring
Spiral	3	Uniform
Pitted	4	Ladder

A 4 - 3 - 2 - 1

B 2 - 4 - 1 - 3

C 2 - 3 - 4 - 1

D 3 - 4 - 1 - 2

Correct Ans : **B**

Q116 : The simple type of plant body in which a single cell performs all the vital functions of life is referred to as _____

A Unicellular

B Monocellular

C Acellular

D Noncellular

Correct Ans : **A**

Q117 : During the formation of periderm, a few layers of meristematic tissue are formed in the cortex. This is called _____.

A Periderm

B Phellem

C Phellogen

D Phelloderm

Correct Ans : **C**

Q118 : Plant cell wall is made up of

A Cellulose,hemicelluloses and Pectin

B Cellulose and Pectin

C Cellulose,hemicelluloses and chitin

D Cellulose only

Correct Ans : **A**

Q119 : Which of the following pairs of plant parts are both Diploid

A Nucleus and antipodals

B Antipodal cells and megaspore mother cells

C Synergids and tapetum

D Tapetum and sporogenous cells

Correct Ans : **D**

Q120 : If mutation changes codon in such a way that there is no effect on functioning and overall structure of protein. This type of mutation is termed as

A Silent

B Mis sense

C Transition

D Frame shift

Correct Ans : **A**

Q121 In tetrad analysis, second-division segregation result from
:

A single crossover between linked genes

B double crossover between linked genes

C single crossover between a gene and a centromere

D independent assortment of unlinked genes

Correct Ans : **C**

Q122 In man, which of the following genotypes and phenotypes may be the correct result of
: aneuploidy in sex chromosomes?

A 22 pairs + Y females

B 22 pairs + XX females

C 22 pairs + XXY males

D 22 pairs + XXXY females

Correct Ans : **C**

Q123 The "Golden rice", aimed at curing
:

A Vitamin b deficiency

B Vitamin a deficiency

C Vitamin k deficiency

D Zinc deficiency

Correct Ans : **B**

Q124 Which of the following enzymes cut the DNA molecule at specific nucleotide sequence
:

A Restriction endonuclease

B DNA ligase

C RNA polymerase

D Exonuclease

Correct Ans : **A**

Q125 Photorespiration is also known as ----------pathway
:

A C2

B C3

C C4

D Carbon reduction

Correct Ans : **A**

Q126 Growth can be measured by:
:

A Auxanometer

B Horizontal microscope

C Crescograph

D All of these

Correct Ans : **D**

Q127 Photorespiration involves :

A Glycolate cycle

B Kreb's cycle

C Calvin cycle

D CAM cycle

Correct Ans : **A**

Q128 Which of the following helps in ascent of sap? :

A Root pressure

B Transpiration

C Both a and b

D Only b

Correct Ans : **D**

Q129 Seed dormancy allows the plants to :

A Overcome unfavourable climate conditions

B Develop healthy seeds

C Reduce viability

D Prevent deterioration of seeds

Correct Ans : **A**

Q130 The plant Drosera is a :

A saprophytic

B insectivorous

C parasitic

D Endophytes

Correct Ans : **B**

Q131 One of the following is a source of rubber :

A Hevea brasilensis

B Tectona grandis

C Cedrus depdara

D Michelia champaca

Correct Ans : **A**

Q132 : Isolation and patenting useful genes of other countries without their permission or understanding is called

A Biopatenting

B Biopiracy

C Bioterrorism

D Biowar

Correct Ans : **B**

Q133 : A nitrogen fixing blue green alga is

A Ulothrix

B Spirogyra

C Anabaena

D Rhizobium

Correct Ans : **C**

Q134 : In paddy fields biological nitrogen fixation is chiefly brought by

A Mycorrhiza

B Green algae

C Cyanobacteria

D Rhizobium

Correct Ans : **C**

Q135 : Bacillus thuringiensis (Bt) strains have been used from designing novel

A bio - metallurgical technique

B bio - mineralization processes

C bio - insecticidal plants

D bio - fertilizers

Correct Ans : **C**

Q136 : B lymphocytes are integral part of

A Cell-mediated immunity

B Humoral immunity

C Innate immunity

D Non-specific immunity

Correct Ans : **B**

Q137 Action potential is generated because of
:

A K ions influx

B K ions efflux

C Na ions influx

D Na ion efflux

Correct Ans : **C**

Q138 Hypothyroidism in adults leads to
:

A Cretinism

B Acromegaly

C Grave's disease

D Myxoedema

Correct Ans : **D**

Q139 The auditory ossicle that is attached to the tymphanic membrane of external ear is
:

A Auditory meatus

B Malleus

C Incus

D Stapes

Correct Ans : **B**

Q140 Milk protein casein is broken down into paracasein by
:

A Chymotrypsin

B Renin

C Chymosin

D Trypsin

Correct Ans : **C**

Q141 Epsilon cells of islet of langerhans in pancreas secrete
:

A Glucagon

B Insulin

C Ghrelin

D somatostatin

Correct Ans : **C**

Q142 Auto-immune disorder for cholinergic receptors is
:

A Rheumatic Heart Disease

B Multiple Sclerosis

C Rheumatoid Arthritis

D Myasthenia gravis

Correct Ans : **D**

Q143 Microbes that inhibit the growth of other microorganisms termed as
:

A Synergism

B Mutualism

C Parasitism

D Antagonism

Correct Ans : **D**

Q144 A microbial disease that spreads over a very large geographic area is called:
:

A A pandemic

B An outbreak

C An epidemic

D A chronic disease

Correct Ans : **A**

Q145 Mac-Conkey medium is an example of
:

A Transport medium

B Enrichment medium

C Differential medium

D Simple medium

Correct Ans : **C**

Q146 Teichoic acids are typically found in
:

A Outer membranes of gram positive bacteria

B Cell walls of gram positive bacteria

C Cell walls of gram negative bacteria

D Outer membranes of gram negative bacteria

Correct Ans : **B**

Q147 Which of the following does not protect body surfaces:
:

A Skin

B Mucus

C Gut microflora

D Salivary amylase

Correct Ans : **D**

Q148 The affinity of an antibody can be determined by measuring :

A Its concentration

B The valency of antigen binding

C The amount of antibody bound at various antigen concentrations

D Its ability to neutralize bacterial toxins

Correct Ans : **C**

Q149 The one thing that is common to all fossil fuels is that they :

A were originally formed in marine environment

B represent the remains of one living organisms

C have undergone the same set of geological processes during their formation

D contain carbon

Correct Ans : **D**

Q150 Steam reforming is currently the least expensive method of producing: :

A Coal

B Biogas

C Hydrogen

D Natural gas

Correct Ans : **C**

Q151 Which of the following acts as a natural sun block? :

A CFC

B ozone

C ammonia

D oxygen

Correct Ans : **B**

Q152 75 to 90 mm of mercury is an adult's normal :

A Systolic pressure

B Diastolic pressure

C Peristaltic pressure

D Water pressure

Correct Ans : **B**

Q153 Which of these techniques is used for 'virtual endoscopy'?
:

A CT scan

B ECG

C MRI

D Ultrasonography

Correct Ans : **A**

Q154 What is meant by the term fitness according to Darwinism?
:

A Ability to survive and reproduce

B Healthy appearance

C Physical strength

D Aggressiveness

Correct Ans : **A**

Q155 Weismann cut off tails of mice generation after generation but tails neither disappeared nor
: shortened showing that

A Tail is an essential organ

B Darwinism was wrong

C Lamarckism was wrong

D Mutation theory was wrong

Correct Ans : **C**