Question Paper Preview

Question Paper Name: Bio Technology
Subject Name: Bio Technology

Mathematics

Number of Questions: 50
Display Number Panel: Yes
Group All Questions: No

Question Number : 1 Question Id : 67809416419 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{pmatrix} 2 & -1 & 0 \\ 3 & 4 & 7 \end{pmatrix}$ and $B = \begin{pmatrix} 5 & 2 & -3 \\ 1 & 0 & -2 \end{pmatrix}$ then $2A+3B =$

Options :

1. $\begin{pmatrix} 19 & 4 & -9 \\ 9 & 8 & 8 \end{pmatrix}$

2. $\begin{pmatrix} -19 & -4 & 9 \\ 9 & 8 & -8 \end{pmatrix}$

3. $\begin{pmatrix} 18 & 4 & -9 \\ 9 & 8 & 8 \end{pmatrix}$

4. $\begin{pmatrix} 17 & 5 & -9 \\ 8 & 8 & 9 \end{pmatrix}$

Question Number : 2 Question Id : 67809416420 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{pmatrix} 2 & -3 & 0 \\ 1 & 4 & -1 \end{pmatrix}$ and $B = \begin{pmatrix} 6 & 1 \\ 3 & 0 \\ 5 & 2 \end{pmatrix}$ then $(AB)^T$ =

Options :

1. A^TB^T

2. B^TA^T

3. $(BA)^T$

4. AB^T

Question Number : 3 Question Id : 67809416421 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If two rows or two columns of a determinant are identical then the value of the determinant is

Options :

1. 2

2. -1

3. 0

4. -2

Question Number : 4 Question Id : 67809416422 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\begin{vmatrix} 265 & 240 & 219 \\ 240 & 225 & 198 \\ 219 & 198 & 181 \end{vmatrix}$ is

Options :

1. -1

2. 0

3. 1

4. 2

Question Number : 5 Question Id : 67809416423 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The adjoint of the square matrix $A = \begin{pmatrix} 2 & 5 & 1 \\ 3 & 1 & 2 \\ 4 & 3 & 1 \end{pmatrix}$ is

Options :

1. $\begin{pmatrix} -5 & -2 & 9 \\ 5 & -2 & -1 \\ 5 & 14 & -13 \end{pmatrix}$

2. $\begin{pmatrix} 5 & 2 & 9 \\ 5 & -2 & -1 \\ 5 & 14 & -13 \end{pmatrix}$

3. $\begin{pmatrix} -5 & -2 & 9 \\ -5 & -2 & -1 \\ -5 & 14 & -13 \end{pmatrix}$

4. $\begin{pmatrix} -5 & -2 & -9 \\ 5 & 2 & 1 \\ 5 & 14 & -13 \end{pmatrix}$

Question Number : 6 Question Id : 67809416424 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Resolve into partial fractions: $\frac{5}{(2x-1)(3x-1)} =$

Options :

1. $\frac{8}{2x-1} + \frac{5}{3x-1}$

2. $\frac{10}{2x-1} - \frac{15}{3x-1}$

3. $\frac{11}{3x-1} + \frac{7}{2x-1}$

4. $\frac{1}{2x-1} + \frac{2}{3x-1}$

Question Number : 7 Question Id : 67809416425 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Resolve into partial fractions: $\frac{3x-1}{(x-1)(x-2)(x-3)} =$

Options :

1. $\frac{2}{x-1} + \frac{5}{x-2} - \frac{4}{x-3}$

2. $\frac{-1}{x-1}+\frac{5}{x-2}-\frac{4}{x-3}$

3. $\frac{1}{x-1}+\frac{5}{x-2}+\frac{4}{x-3}$

4. $\frac{1}{x-1}-\frac{5}{x-2}+\frac{4}{x-3}$

Question Number : 8 Question Id : 67809416426 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\tan A=\frac{1}{2}$ and $\tan B=\frac{1}{3}$ then $\tan(A-B)=$

Options :

1. $\frac{1}{7}$

2. $\frac{-1}{7}$

3. $\frac{1}{5}$

4. $\frac{1}{3}$

Question Number : 9 Question Id : 67809416427 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\cot 2A+\tan A=$

Options :

1. $\sin 2A$

2. $\cos 2A$

3. $\sec 2A$

4. $\operatorname{cosec} 2A$

Question Number : 10 Question Id : 67809416428 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\frac{1-\cos 2A+\sin 2A}{1+\cos 2A+\sin 2A} =$

Options :

1. sinA

2. cosA

3. tanA

4. cotA

Question Number : 11 Question Id : 67809416429 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $sin\frac{\pi}{5} sin\frac{2\pi}{5} sin\frac{3\pi}{5} sin\frac{4\pi}{5} =$

Options :

1. $\frac{4}{15}$

2. $\frac{5}{16}$

3. $\frac{-5}{16}$

4. $\frac{7}{15}$

Question Number : 12 Question Id : 67809416430 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $cos20^0 + cos100^0 + cos140^0 =$

Options :

1. 0

2. 3

3. 1

4. -3

Question Number : 13 Question Id : 67809416431 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\sum a(b^2 + c^2)cosA$ is

Options :

1. 2abc

2. 4abc

3. 3abc

4. 5abc

Question Number : 14 Question Id : 67809416432 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $(a-b)^2cos^2\left(\frac{C}{2}\right) + (a+b)^2sin^2\left(\frac{C}{2}\right)$ is

Options :

1. C^3

2. C

3. C^5

4. C^2

Question Number : 15 Question Id : 67809416433 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $2tan^{-1}\left(\frac{1}{3}\right) + tan^{-1}\left(\frac{1}{7}\right)$ is

Options :

1. $\pi/4$

2. $\pi/2$

3. $\pi/6$

4. $\pi/3$

Question Number : 16 Question Id : 67809416434 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of $4cos^2x - 3 = 0$ is

Options :

1. $2n\pi \pm \frac{\pi}{6}$

2. $2n\pi \pm \frac{7\pi}{6}$

3. $3n\pi \pm \frac{5\pi}{6}$

4. $2n\pi \pm \frac{11\pi}{6}$

Question Number : 17 Question Id : 67809416435 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $tan^{-1}x + tan^{-1}y + tan^{-1}z = \frac{\pi}{2}$, then the value of $xy + yz + zx$ is

Options :

1. -1

2. 3

3. 5

4. 1

Question Number : 18 Question Id : 67809416436 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The modulus of a complex number $\sqrt{3} + i$ is

Options :

1. -2

2. 3

3. 2

4. 5

Question Number : 19 Question Id : 67809416437 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $x+\frac{1}{x}=2\cos\theta$ then the value of $x^n+\frac{1}{x^n}$ is

Options :

1. $2\cos n\theta$

2. $-2\cos n\theta$

3. $3\cos\theta$

4. $2\sin n\theta$

Question Number : 20 Question Id : 67809416438 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The centre of the circle:$x^2+y^2-2x+6y-6=0$ is

Options :

1. $(1,3)$

2. $(2,3)$

3. $(1,-3)$

4. $(-1,3)$

Question Number : 21 Question Id : 67809416439 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The radius of the circle: $5x^2+5y^2-6x+8y-75=0$ is

Options :

1. -4

2. 4

3. 2

4. 3

Question Number : 22 Question Id : 67809416440 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation of the parabola with vertex $(2,-1)$ and focus $(2,-3)$ is

Options :

1. $x^2 - 4x + 8y + 12 = 0$

2. $x^2 - 4x - 8y - 12 = 0$

3. $x^2 + 4x - 8y - 12 = 0$

4. $x^2 + 5x - 8y - 11 = 0$

Question Number : 23 Question Id : 67809416441 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The centre of the ellipse: $9x^2 + 25y^2 - 18x + 100y - 116 = 0$ is

Options :

1. $(2,-1)$

2. $(-1,-2)$

3. $(1,-2)$

4. $(1,2)$

Question Number : 24 Question Id : 67809416442 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The focus of the hyperbola: $\frac{x^2}{25} - \frac{y^2}{144} = 1$ is

Options :

1. $(-13,0)$

2. $(13,0)$

3. $(13,-1)$

4. $(13,1)$

Question Number : 25 Question Id : 67809416443 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the major axis of the ellipse: $4x^2 + 3y^2 = 48$ is

Options :

1. 10

2. 11

3. 8

4. 13

Question Number : 26 Question Id : 67809416444 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\lim_{x\to 1}\frac{x^3-1}{x-1}$ is

Options :

1. 3

2. -3

3. 2

4. 1

Question Number : 27 Question Id : 67809416445 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y=\frac{a+bx}{b-ax}$ then the derivative of y with respect to x is

Options :

1. $\frac{a^2+b^2}{(b-ax)^2}$

2. $\frac{a^2+b^2}{(b+ax)^2}$

3. $\frac{a^2-b^2}{(b-ax)^2}$

4. $\frac{a+b}{(b-ax)^2}$

Question Number : 28 Question Id : 67809416446 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = x^3 e^x$ then $\frac{dy}{dx}$ is

Options :

1. $(x-3)x^2e^x$

2. $(x-2)x^3e^x$

3. $(x+3)x^2e^x$

4. $(x-1)x^3e^x$

Question Number : 29 Question Id : 67809416447 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \sec x + \tan x$ then $\frac{dy}{dx}$ is

Options :

1. $y\cos x$

2. $y\sec x$

3. $-y\sin x$

4. $y\tan x$

Question Number : 30 Question Id : 67809416448 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \frac{2+3\sinh x}{3+2\sinh x}$ then the derivative of y with respect to x is

Options :

1. $\frac{5\cosh x}{(3+2\sinh x)^2}$

2. $\frac{5\sinh x}{(3+2\sinh x)^2}$

3. $\frac{5\sin x}{(3-2\cosh x)^2}$

4. $\frac{\sinh^2 x}{(2-3\sinh x)^2}$

Question Number : 31 Question Id : 67809416449 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \sqrt{\frac{1-\cos x}{1+\cos x}}$ then $\frac{dy}{dx}$ is

Options :

1. $\sec^2\left(\frac{x}{2}\right)$

2. $\cos^2\left(\frac{x}{2}\right)$

3. $\frac{1}{2}\cos^2\left(\frac{x}{2}\right)$

4. $\frac{1}{2}\sec^2\left(\frac{x}{2}\right)$

Question Number : 32 Question Id : 67809416450 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The angle between the curves $y = x^2 + 3x - 7$ and $y^2 = 2x + 5$ at $(2,3)$ is

Options :

1. $\tan\theta = 2$

2. $\sec\theta = 2$

3. $\cos\theta = 1$

4. $\sin\theta = 3$

Question Number : 33 Question Id : 67809416451 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The range of x for which the function $x^3 - 3x^2 - 45x + 2$ is increasing with x is

Options :

1. $(3,-5)$

2. $(-3,-5)$

3. $(3,5)$

4. $(-3,5)$

Question Number : 34 Question Id : 67809416452 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum value of the function $2x^3 - 12x^2 + 18x + 5$ is

Options :

1. 13

2. 12

3. 10

4. 15

Question Number : 35 Question Id : 67809416453 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If u is a homogeneous function of x and y with degree n then $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} =$

Options :

1. $-nu$

2. n^2u

3. nu

4. $nu^2 + u$

Question Number : 36 Question Id : 67809416454 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int \frac{\cos\sqrt{x}}{\sqrt{x}} dx$ is

Options :

1. $2\sin\sqrt{x} + c$

2. $3\sin\sqrt{x}+c$

3. $2\sin x+c$

4. $\sin\sqrt{x}+c$

Question Number : 37 Question Id : 67809416455 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int\frac{dx}{\sqrt{a^2-x^2}}$ is

Options :

1. $\cos^{-1}\left(\frac{x}{a}\right)+c$

2. $\sin^{-1}\left(\frac{x}{a}\right)+c$

3. $\sinh^{-1}\left(\frac{x}{a}\right)+c$

4. $\sin^{-1}\left(\frac{a}{x}\right)+c$

Question Number : 38 Question Id : 67809416456 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int\frac{dx}{4x^2+4x+17}$ is

Options :

1. $\frac{1}{8}\tan^{-1}\left(\frac{2x+1}{4}\right)+c$

2. $\frac{1}{4}\cot^{-1}\left(\frac{2x+1}{4}\right)+c$

3. $\frac{1}{8}\sin^{-1}\left(\frac{2x+1}{4}\right)+c$

4. $\frac{1}{3}\tan^{-1}\left(\frac{2x+1}{4}\right)+c$

Question Number : 39 Question Id : 67809416457 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int \log x \, dx$ is

Options :

1. $x \log x + x + c$

2. $x^2 \log x - x + c$

3. $x \log x - x + c$

4. $x \log x - \frac{x^2}{2} + c$

Question Number : 40 Question Id : 67809416458 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int_1^4 \left(\sqrt{x} + \frac{1}{\sqrt{x}}\right) dx$ is

Options :

1. $\frac{20}{3}$

2. $-\frac{20}{3}$

3. $\frac{10}{3}$

4. $\frac{15}{3}$

Question Number : 41 Question Id : 67809416459 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\int_0^{\pi/2} \sin^2 x \, dx$ is

Options :

1. $\frac{\pi}{2}$

2. $-\frac{\pi}{4}$

3. $\frac{\pi}{6}$

4. $\frac{\pi}{4}$

Question Number : 42 Question Id : 67809416460 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The area enclosed between the curve $y^2 = 4ax$ and the line $x = 2y$ is

Options :

1. $\frac{64}{5}$ sq. units

2. $\frac{64}{3}$ sq. units

3. $\frac{65}{4}$ sq. units

4. $\frac{63}{4}$ sq. units

Question Number : 43 Question Id : 67809416461 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\lim_{n\to\infty}\left[\frac{1}{n+1}+\frac{1}{n+2}+\cdots..+\frac{1}{n+n}\right]$ is

Options :

1. $\log 2$

2. $\log 3$

3. $-\log 2$

4. $\log n$

Question Number : 44 Question Id : 67809416462 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Form the differential equation by eliminating the arbitrary constant a from $ay^2 = x^3$

Options :

1. $\frac{dy}{dx} = \frac{3y}{2x}$

2. $\frac{dy}{dx} = \frac{2x}{3y}$

3. $\frac{dy}{dx} = \frac{x}{y}$

4. $\frac{dy}{dx} = \frac{2y}{x}$

Question Number : 45 Question Id : 67809416463 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\sqrt{1-y^2}dx + \sqrt{1-x^2}dy = 0$ is

Options :

1. $\cos^{-1}x + \cos^{-1}y = c$

2. $\sinh^{-1}x + \cosh^{-1}y = c$

3. $\cos^{-1}x + \sec^{-1}x = c$

4. $\sin^{-1}x + \sin^{-1}y = c$

Question Number : 46 Question Id : 67809416464 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\frac{dy}{dx} = (4x + y + 1)^2$ is

Options :

1. $\frac{1}{2}\tan^{-1}\left(\frac{4x+y+1}{2}\right) = x + c$

2. $\frac{1}{2}\cot^{-1}\left(\frac{4x+y+1}{2}\right) = x + c$

3. $-\frac{1}{2}\tan^{-1}\left(\frac{4x+y+1}{2}\right) = x + c$

4. $\frac{1}{2}\tan^{-1}\left(\frac{4x-y-1}{2}\right) = x + c$

Question Number : 47 Question Id : 67809416465 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of exact differential equation $2xy\,dx + x^2dy = 0$ is

Options :

1. $x^2y^2 = c$

2. $x^2y = c$

3. $x^3y = c$

4. $x^2y^3 = c$

Question Number : 48 Question Id : 67809416466 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\frac{dy}{dx} + y = e^{-x}$ is

Options :

1. $(x + c)e^{-x}$

2. $(x - c)e^{x}$

3. $(x + c)e^{x}$

4. $(x + c)e^{-2x}$

Question Number : 49 Question Id : 67809416467 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The particular integral of $(D^2 + 5D + 6)y = e^{x}$ is

Options :

1. $\frac{-e^{-x}}{12}$

2. $\frac{e^{2x}}{12}$

3. $\frac{e^{x}}{12}$

4. $\frac{e^{x}}{6}$

Question Number : 50 Question Id : 67809416468 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The complementary function of $(D^2 + 3D + 2)y = 8sin5x$ is

Options :

1. $c_1 e^{-x} + c_2 e^{-2x}$

2. $c_1 e^{x} + c_2 e^{2x}$

3. $c_1 e^{-x} + c_2 e^{2x}$

4. $c_1 e^{2x} + c_2 e^{3x}$

Physics

Number of Questions:	25
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 51 Question Id : 67809416469 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not the unit of energy?

Options :

1. watt second

2. Pascal metre

3. Newton metre

4. Kilowatt hour

Question Number : 52 Question Id : 67809416470 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The height of Mercury barometer is 76 cm and density of Mercury is 13.6 g/cc. The corresponding height of water barometer in SI system is

Options :

1. 10.336 m

2. 103.36 m

3. 3.6m

4. 1.0336 m

Question Number : 53 Question Id : 67809416471 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Angle made by the vector $(\sqrt{3}\ \bar{i} + \bar{j})$ with the X-axis is

Options :

1. $\pi/2$

2. $\pi/4$

3. $\pi/3$

4. $\pi/6$

Question Number : 54 Question Id : 67809416472 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The minimum number of unequal forces in a plane that can keep a particle in equilibrium is

Options :

1. 4

2. 2

3. 3

4. 6

Question Number : 55 Question Id : 67809416473 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A body is thrown with a velocity of $(4\bar{i} + 3\bar{j})$ m/s. The maximum height attained by the body is ($g=10\ ms^{-2}$)

Options :

1. 2.5 m

2. 4.5 m

3. 0.8 m

4. 0.45 m

Question Number : 56 Question Id : 67809416474 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A person in a lift, which ascends up with acceleration $10ms^{-2}$, drops a stone from a height of 10m. The time of descent is ($g=10\ ms^{-2}$)

Options :

1. 0.5 s

2. 1 s

3. 1.5 s

4. 2 s

Question Number : 57 Question Id : 67809416475 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For a projectile, the ratio of maximum height reached to the square of time of flight is

Options :

1. 5:4

2. 5:2

3. 5:1

4. 10:1

Question Number : 58 Question Id : 67809416476 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The ratio of distances travelled by a body, starting from rest and travelling with uniform acceleration, in successive intervals of time of equal duration will be

Options :

1. 1:2:3

2. 1:4:9

3. 1:3:5

4. 1:9:16

Question Number : 59 Question Id : 67809416477 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A force of 12 N acts on a body of mass 4 kg placed on a rough surface. The coefficient of friction between body and surface is 0.2 and take g= 10 ms^{-2}. The acceleration of the body in ms^{-2} is

Options :

1. 1

2. 0.5

3. 0.25

4. Zero

Question Number : 60 Question Id : 67809416478 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Brakes stop a train in a certain distance d. When the braking force is made one fourth, the brakes will stop the train in a distance which is

Options :

1. d/2
2. 4d
3. 2d
4. d

Question Number : 61 Question Id : 67809416479 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The product of linear momentum and velocity of a body represents

Options :

1. Kinetic energy of the body
2. Potential energy of the body
3. Half the Kinetic energy of the body
4. Twice the kinetic energy of the body

Question Number : 62 Question Id : 67809416480 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A man weighing 60 kg eats plum cake whose energy content is 9800 calories. If all this energy could be utilised by him, he can ascend to a height of

Options :

1. 17 m
2. 100 m
3. 70 m
4. 60m

Question Number : 63 Question Id : 67809416481 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A crane can lift up 10,000 kg of coal in 1 hour from a mine of depth 180m. If the efficiency of the crane is 80%, its input power must be ($g=10\ ms^{-2}$)

Options :

1. 62.5 kW

2. 6.25 kW

3. 50 kW

4. 5 kW

Question Number : 64 Question Id : 67809416482 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The graph of acceleration as a function of displacement in the case of a body executing simple harmonic motion is

Options :

1. Parabola

2. Hyperbola

3. Straight line with positive slope

4. Straight line with negative slope

Question Number : 65 Question Id : 67809416483 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pendulum of length 'L' swings from mean position to mean position 'n' times in one second.The value of acceleration due to gravity is

Options :

1. π^2n^2L

2. $2\pi^2n^2L$

3. $(\pi^2 n^2 L)/2$

4. $4\pi^2 n^2 L$

Question Number : 66 Question Id : 67809416484 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When a source of sound is in motion towards a stationary observer, the effect observed is

Options :

1. Decrease in velocity of sound

2. Increase in velocity of sound

3. increase in frequency of sound

4. decrease in frequency of sound

Question Number : 67 Question Id : 67809416485 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The voice of a male person is different from that of a female person because

Options :

1. Two sounds have different phases

2. Two persons are of different size

3. Two sounds travel with different velocities

4. Two sounds have different pitch

Question Number : 68 Question Id : 67809416486 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the sound absorption of a hall is changed by 2%, then the percentage change in the reverberation time is

Options :

1. 2%

2. 4%

3. 1%

4. No change

Question Number : 69 Question Id : 67809416487 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In which of the following process, the internal energy of the system remains constant?

Options :

1. Adiabatic

2. Isothermal

3. Isobaric

4. Isochoric

Question Number : 70 Question Id : 67809416488 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Heat required to raise the temperature of one gram of water through 1 K is

Options :

1. 1.0 Kcal

2. 0.1 Kcal

3. 0.01 Kcal

4. 0.001 Kcal

Question Number : 71 Question Id : 67809416489 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The specific heat of a gas in an isothermal process is

Options :

1. infinity

2. Zero

3. Finite positive

4. Finite negative

Question Number : 72 Question Id : 67809416490 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Specific heat of aluminium is 0.25 cal/g/°C. The water equivalent of an aluminium vessel of mass one kilogram is

Options :

1. 40 cal/°C

2. 400 cal/°C

3. 250 cal/°C

4. 25 cal/°C

Question Number : 73 Question Id : 67809416491 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What should be the percentage increase in the pressure so that the volume of a gas may decrease by 5% at constant temperature?

Options :

1. 5%

2. 5.26%

3. 10%

4. 4.26%

Question Number : 74 Question Id : 67809416492 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the maximum kinetic energy of emitted photo electrons from a metal is 0.9 eV and work function is 2.2 eV, then the wavelength of incident radiation is

Options :

1. 4000Å
2. 8000Å
3. 3000Å
4. 2000Å

Question Number : 75 Question Id : 67809416493 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the angle of incidence of a ray is greater than the critical angle at the core – cladding interface in an optical fiber, then the ray travels

Options :

1. in the core
2. in the cladding
3. in the buffer
4. along the interface

Chemistry

Number of Questions:	25
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 76 Question Id : 67809416494 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Pauli's Exclusion principle states that two electrons in same orbital have

Options :

1. same spins

2. different spins

3. opposite spins

4. vertical spins

Question Number : 77 Question Id : 67809416495 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Orbits in which electrons move according to Bohr are

Options :

1. elliptical

2. cylindrical

3. circular

4. oval

Question Number : 78 Question Id : 67809416496 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Phosphorus has an atomic number of 15. A stable phosphorus atom has an electronic configuration of

Options :

1. $1s^2 2s^2 2p^6 3p^5$

2. $1s^2 2s^2 2p^6 3s^2 3p^3$

3. $1s^2 2s^2 2p^6 3s^2 3p^1 4s^2$

4. $1s^2 1p^6 1d^7$

Question Number : 79 Question Id : 67809416497 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

NaCl is classified as having what kind of bonds in the solid phase?

Options :

1. Covalent

2. Ionic

3. Polar

4. vander Waals

Question Number : 80 Question Id : 67809416498 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Bond formed due to sharing of electrons is

Options :

1. Ionic bond

2. Metallic bond

3. Polar bond

4. Covalent bond

Question Number : 81 Question Id : 67809416499 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The normality of solution obtained by dissolving 5.3 grams of Na_2CO_3 in 1 litre solution is

Options :

1. 1N

2. 0.1N

3. 0.05N

4. 0.5N

Question Number : 82 Question Id : 67809416500 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The following solution has same molarity and normality

Options :

1. Na_2CO_3

2. NaCl

3. H_2SO_4

4. $K_2Cr_2O_7$

Question Number : 83 Question Id : 67809416501 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

5 moles of a solute is dissolved in 10 litres of solution. What is its molarity?

Options :

1. 5 M

2. 2M

3. 0.5M

4. 0.2M

Question Number : 84 Question Id : 67809416502 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Process in which acids (H^+) and bases (OH^-) react to form salts and water is called

Options :

1. Neutralization

2. Halogenation

3. Hydrogenation

4. Hydrolysis

Question Number : 85 Question Id : 67809416503 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A substance that donates a pair of electrons to form coordinate covalent bond is called

Options :

1. Lewis acid

2. Lewis base

3. Bronsted-Lowry acid

4. Bronsted-Lowry base

Question Number : 86 Question Id : 67809416504 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

One Faraday is equal to

Options :

1. 99650 C

2. 93100 C

3. 96500 C

4. 94500 C

Question Number : 87 Question Id : 67809416505 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The cell reaction of a cell is $Mg(s) + 2\ H^{+}(aq) \rightarrow Mg^{2+}(aq) + H_2(g)$. If the standard reduction potential of Zn is -2.372 V, then the emf of the cell is

Options :

1. +2.372 V

2. − 2.372 V

3. 0.00 V

4. -1.372 V

Question Number : 88 Question Id : 67809416506 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Galvanic cells are the cells which convert

Options :

1. Electrical energy to chemical energy

2. Chemical energy to electrical energy

3. Chemical energy to free energy

4. Potential energy to kinetic energy

Question Number : 89 Question Id : 67809416507 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Mass of substance produced at electrode is directly proportional to the quantity of electricity passed. This is known as

Options :

1. Faraday's second law

2. Faraday's first law

3. Newton's third law

4. Newton's first law

Question Number : 90 Question Id : 67809416508 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Hardness of water is expressed in terms of equivalent of

Options :

1. Na_2CO_3

2. K_2CO_3

3. $MgCO_3$

4. $CaCO_3$

Question Number : 91 Question Id : 67809416509 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Temporary hardness is caused by

Options :

1. Carbonates of calcium and magnesium

2. Chlorides of calcium and magnesium

3. Sulphates of calcium and magnesium

4. Nitrates of Calcium

Question Number : 92 Question Id : 67809416510 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The exhausted zeolite bed can be regenerated by washing with

Options :

1. NaCl

2. dil. NaOH

3. dil. HCl

4. Distilled water

Question Number : 93 Question Id : 67809416511 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Corrosion is an example of

Options :

1. Oxidation

2. Reduction

3. Electrolysis

4. Halogenation

Question Number : 94 Question Id : 67809416512 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The composition of rust is

Options :

1. $Fe(OH)_3$

2. $FeCl_3$

3. FeO

4. $Fe_2O_3.xH_2O$

Question Number : 95 Question Id : 67809416513 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following statement is not true?

Options :

1. Natural rubber has the trans-configuration at every double bond

2. Buna-S is a copolymer of butadiene and styrene

3. Natural rubber is a 1, 4-polymer of isoprene

4. In vulcanization, the formation of sulphur bridges between different chains makes rubber harder and stronger

Question Number : 96 Question Id : 67809416514 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The monomers of Buna-S rubber are

Options :

1. Styrene and butadiene

2. Styrene and 2-propene

3. Isoprene and butadiene

4. Styrene and sulphur

Question Number : 97 Question Id : 67809416515 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The plastics which soften when heat is applied with or without pressure, but require cooling to set them to shape are called as

Options :

1. Thermosofting materials

2. Thermosetting materials

3. Thermoplastic materials

4. Thermostatting materials

Question Number : 98 Question Id : 67809416516 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following statement is not true about ideal fuel?

Options :

1. High calorific value

2. High moisture content

3. Low cost

4. Moderate ignition temperature

Question Number : 99 Question Id : 67809416517 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Environmental pollution affects

Options :

1. Humans only

2. Plants only

3. Biotic components

4. Both abiotic and biotic components

Question Number : 100 Question Id : 67809416518 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Layer of atmosphere in which ozone layer lies is

Options :

1. Troposphere

2. Stratosphere

3. Exosphere

4. Mesosphere

Bio Technology

Number of Questions:	100
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 101 Question Id : 67809416519 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Recovery of ethanol after fermentation is achieved by

Options :

1. Centrifugation

2. Distillation

3. Filtration

4. Disintegration

Question Number : 102 Question Id : 67809416520 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What are the ideal fermentation conditions for the ethanol production?

Options :

1. pH 6.0 at 35 °C

2. pH 6.0 at 30° C

3. pH 5.0 at 30 °C

4. pH 5.0 at 35 °C

Question Number : 103 Question Id : 67809416521 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The dihybrid test cross ratio is

Options :

1. 3:1

2. 9:3:3:1

3. 1:1:1:1

4. 9:3:2:1

Question Number : 104 Question Id : 67809416522 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The crossing of F1 with its homozygous recessive parent is called

Options :

1. Test Cross

2. Back Cross

3. Selfing

4. Monohybrid cross

Question Number : 105 Question Id : 67809416523 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which phase of the mitosis is associated with the formation of nuclear envelope ?

Options :

1. Metaphase

2. Anaphase

3. Telophase

4. Prophase

Question Number : 106 Question Id : 67809416524 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In plants, haploid cells

Options :

1. Divide by meiosis

2. Will undergo crossing over

3. Will undergo syngamy

4. Divide by mitosis

Question Number : 107 Question Id : 67809416525 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If no allele is dominant over other, then the situation is considered as

Options :

1. Assorted dominance

2. Incomplete dominance

3. Segregated dominance

4. Evolutionary dominance

Question Number : 108 Question Id : 67809416526 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The site of crossing over on a chromosome is

Options :

1. Kinetochore

2. Chiasma

3. Centromere

4. Chromonema

Question Number : 109 Question Id : 67809416527 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Location of a chromosome where spindle fibers are attached during cell division is

Options :

1. Chromatid

2. Centriole

3. Centromere

4. Telomere

Question Number : 110 Question Id : 67809416528 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The daughters of a colour blind man and a homozygous dominant woman will be

Options :

1. Carriers

2. Colour blind

3. Normal

4. Normal and Carriers

Question Number : 111 Question Id : 67809416529 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If X is the chromosome with the gene for haemophilia and Y is the chromosome with normal gene, which of the following individuals will be the carriers for heamophilia?

Options :

1. X^hX

2. XY

3. X^hX^h

4. X^hY

Question Number : 112 Question Id : 67809416530 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of these conditions in humans leads to Turner syndrome?

Options :

1. 45, X

2. 47, XXY

3. 45, Y

4. 46, XXY

Question Number : 113 Question Id : 67809416531 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The ability to reveal two closely adjacent points as separate and distinct is called

Options :

1. Magnification

2. Resolution

3. Numerical aperture

4. Contrast

Question Number : 114 Question Id : 67809416532 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In which type of microscope, the field surrounding a specimen appears black while the object is brightly illuminated?

Options :

1. Compound microscope

2. Dark-field microscope

3. Phase contrast microscope

4. Fluorescence microscope

Question Number : 115 Question Id : 67809416533 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The plasma membrane is impermeable to all molecules except _____

Options :

1. Glucose

2. ATP

3. Urea

4. K^+

Question Number : 116 Question Id : 67809416534 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following bio-molecules are not found in the animal cell plasma membranes?

Options :

1. Proteins

2. Glycolipids

3. Phospholipids

4. Nucleic acids

Question Number : 117 Question Id : 67809416535 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which protein is used to identify the cell?

Options :

1. Major histocompatibility complex protein

2. Adenylate cyclase

3. Sodium-potassium pump protein

4. Chloride ion channel protein

Question Number : 118 Question Id : 67809416536 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Nucleus was first described by

Options :

1. Robert Hooke

2. Robert Brown

3. Weismann

4. Virchow

Question Number : 119 Question Id : 67809416537 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Extra Nuclear DNA is present in

Options :

1. Ribosome

2. Endoplasmic reticulum

3. Chloroplast

4. Peroxisome

Question Number : 120 Question Id : 67809416538 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Prokaryotic 70S ribosomes break up into

Options :

1. 50S and 20S

2. 40S and 30S

3. 50S and 30S

4. 60S and 10S

Question Number : 121 Question Id : 67809416539 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of these cell organelles contains hydrolytic enzymes ?

Options :

1. Mesosomes

2. Lysosomes

3. Chromosomes

4. Plastosomes

Question Number : 122 Question Id : 67809416540 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An element with a charge of -2 has 18 electrons and 20 neutrons. What is its mass number?

Options :

1. 38

2. 40

3. 36

4. 42

Question Number : 123 Question Id : 67809416541 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The size of an orbital is determined by

Options :

1. Principle quantum number

2. Azimuthal quantum number

3. Magnetic quantum number

4. Spin quantum number

Question Number : 124 Question Id : 67809416542 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A fern commonly used as a biofertilizer in paddy fields is

Options :

1. Selaginella

2. Azolla

3. Salvinia

4. Anabaena

Question Number : 125 Question Id : 67809416543 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Bioinsectiside pyrethrin is obtained from

Options :

1. *Chrysanthemum cinerariifolium*

2. *Azadirachta indica*

3. *Urtica dioca*

4. *Ulva lactuca*

Question Number : 126 Question Id : 67809416544 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Instantly available source of nitrogen to the plants is

Options :

1. Ammonia fertilizers

2. Nitrite fertilizers

3. Nitrate fertilizers

4. Amide fertilizers

Question Number : 127 Question Id : 67809416545 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a major component of Bordeaux mixture?

Options :

1. $Cu\ SO_4$

2. $Mg\ SO_4$

3. $Ca\ Cl_2$

4. Na Cl

Question Number : 128 Question Id : 67809416546 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Dichloro-diphenyl-trichloroethane (DDT) is a

Options :

1. Pesticide

2. Insecticide

3. Herbicide

4. Fertilizer

Question Number : 129 Question Id : 67809416547 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The heat of combustion of ammonia and hydrogen are 9.06 and 68.9 kcal respectively. The heat of formation of ammonia is

Options :

1. -74.29 kcal

2. -84.29 kcal

3. -94.29 kcal

4. -104.29 kcal

Question Number : 130 Question Id : 67809416548 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Most suitable reactor for algae cultivation is

Options :

1. Stirred tank reactor

2. Packed bed reactor

3. Airlift reactor

4. Trickle bed reactor

Question Number : 131 Question Id : 67809416549 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a continuous flow stirred tank reactor the composition of exit stream under steady state condition

Options :

1. Is same as the reactor

2. Is different than that in the reactor

3. Depends upon the reactor size

4. Depends upon the reactor volume

Question Number : 132 Question Id : 67809416550 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The degree of conversion when feed (80 g/L) is converted to product (30 g/L) is

Options :

1. 50%

2. 52.5%

3. 62.5%

4. 72.5%

Question Number : 133 Question Id : 67809416551 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The rate of a chemical reaction doubles for every 10 °C rise of temperature. If the temperature is raised by 50°C, the rate of the reaction increases by about

Options :

1. 10 times

2. 32 times

3. 24 times

4. 64 times

Question Number : 134 Question Id : 67809416552 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The reaction A→B is conducted in an isothermal batch reactor. If the conversion of A increases linearly with time, then the order of the reaction is

Options :

1. 0

2. 1

3. 1.5

4. 2

Question Number : 135 Question Id : 67809416553 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first law of thermodynamics may be represented as

Options :

1. Energy can neither be created nor destroyed

2. The entropy of pure crystalline substance at absolute zero temperature is zero

3. For any spontaneous process, the entropy of universe increases

4. $\Delta S = qrev/T$ at constant temperature

Question Number : 136 Question Id : 67809416554 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of these parameters are controlled by microprocessor in bioreactors ?

Options :

1. Pressure, Volume, Viscosity, Density

2. Agitation, Temperature, Ph and Dissolved Oxygen

3. Substrate Concentration, Product Concentration, Enthalpy of the Reactor, Rate Constant

4. Pressure, Volume

Question Number : 137 Question Id : 67809416555 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is employed to sterilize pre-packaged lab equipment that is destroyed by heat?

Options :

1. Autoclave

2. Hot air oven

3. Formaldehyde

4. Ethylene Oxide

Question Number : 138 Question Id : 67809416556 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The performance of batch fermentation can be represented by

Options :

1. $\frac{dp}{dt} = x\, q_p$

2. $\frac{dx}{dt} = xC_s$

3. $\frac{dp}{dt} = xC_s$

4. $\frac{dx}{dt} = xq_p$

Question Number : 139 Question Id : 67809416557 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Crowded plate technique is employed for

Options :

1. Detection of viruses

2. Detection of antibiotic producers

3. Detection of nitrogen producers

4. Detection of sulphonyl compound producers

Question Number : 140 Question Id : 67809416558 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Function of *Streptococcus* during milk fermentation is to

Options :

1. Generate anaerobic environment

2. Generate aerobic environment

3. Produce lactic acid

4. Produce casein

Question Number : 141 Question Id : 67809416559 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cyanobacteria belong to which kingdom?

Options :

1. Eubacteria

2. Planate

3. Protista

4. Fungi

Question Number : 142 Question Id : 67809416560 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following bacteria are resistant to penicillin due to the lack of cell wall?

Options :

1. Spirochetes

2. Cyanobacteria

3. Mycoplasms

4. Bdellovibrios

Question Number : 143 Question Id : 67809416561 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

36 colonies grew in nutrient agar medium from 1.0 ml of the sample withdrawn from a solution diluted to 10^{-5} in a standard plate count procedure. How many cells are in the original sample?

Options :

1. 360

2. 3,600

3. 3,60,000

4. 3,600,000

Question Number : 144 Question Id : 67809416562 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An experiment began with 4 bacterial cells and ended with 128 bacterial cells. How many generations did the cells go through?

Options :

1. 4

2. 5

3. 6

4. 12

Question Number : 145 Question Id : 67809416563 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following bacteria are capable of growing in acidic conditions?

Options :

1. *Vibrio cholorae*

2. *Salmonella*

3. *Lactobacilli*

4. *Shizella*

Question Number : 146 Question Id : 67809416564 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Mac-Conkey medium is an example of

Options :

1. Enrichment medium

2. Transport medium

3. Differential medium

4. Fermentation medium

Question Number : 147 Question Id : 67809416565 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Media comprising of substances that inhibit the growth of unwanted bacteria and favors the growth of wanted bacteria are called

Options :

1. Differential medium

2. Selective medium

3. Fermentation medium

4. Transport medium

Question Number : 148 Question Id : 67809416566 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The addition of which of the following would change a chemically defined medium into a complex medium?

Options :

1. Biotin

2. Maltose

3. Yeast Extract

4. NH_4No_3

Question Number : 149 Question Id : 67809416567 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following procedures are applied for isolating the pure bacterial culture from a mixture?

Options :

1. Streak plating

2. Dilution plating

3. Enrichment culture

4. Differential culturing

Question Number : 150 Question Id : 67809416568 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An organism is capable of oxidizing H_2S and utilizing the energy obtained from it for the reduction of CO_2. Such type of organism is called?

Options :

1. Photo-organotrophic Heterotroph

2. Photolithotrophic autotroph

3. Chemoorganotrophic heterotroph

4. Chemolithotrophic autotroph

Question Number : 151 Question Id : 67809416569 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A nucleoside is composed of

Options :

1. Base and Sugar

2. Base, Sugar and Phosphate

3. Base and Phosphate

4. Sugar and Phosphate

Question Number : 152 Question Id : 67809416570 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Adjacent nucleotides in DNA are joined by

Options :

1. Peptide bond

2. Phosphodiester bond

3. Covalant bond

4. Ionic bond

Question Number : 153 Question Id : 67809416571 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the length of the chromosomal arms are unequal, than the chromosome is said to be

Options :

1. Acrocentric

2. Metacentric

3. Sub-metacentric

4. Telocentric

Question Number : 154 Question Id : 67809416572 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following DNA has a left handed helix?

Options :

1. A-DNA

2. B-DNA

3. Z-DNA

4. t-DNA

Question Number : 155 Question Id : 67809416573 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following codon is a start codon?

Options :

1. AUG

2. UAG

3. UGA

4. UAA

Question Number : 156 Question Id : 67809416574 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The process by which a segment of DNA is copied to produce an mRNA molecule is

Options :

1. Replication

2. Transcription

3. Translation

4. Adenylation

Question Number : 157 Question Id : 67809416575 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which type of enzyme is used in recombinant DNA technology for breaking a specific sugar phosphate bond in each strand of a DNA double helix?

Options :

1. Ligase

2. Esterase

3. Lipase

4. Restriction enzyme

Question Number : 158 Question Id : 67809416576 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which metabolic abnormality gives rise to disease phenylketonuria?

Options :

1. Phenylalanine cannot be converted into tyrosine

2. Tyrosine cannot be converted to Phenylalanine

3. Phenylalanine cannot be converted into alanine

4. Alanine cannot be converted into phenylalanine

Question Number : 159 Question Id : 67809416577 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first genetically modified organism generated was

Options :

1. Mice

2. Sheep

3. Bacteria

4. Virus

Question Number : 160 Question Id : 67809416578 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following enzymes is used in polymerase chain reaction?

Options :

1. DNA polymerase

2. DNA hexonuclease

3. DNA gyrase

4. DNA helicase

Question Number : 161 Question Id : 67809416579 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Part of the plant used for the tissue culture is called

Options :

1. Scion

2. Callus

3. Explant

4. Propagule

Question Number : 162 Question Id : 67809416580 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

_____ is cultured for obtaining a haploid plant

Options :

1. Nucleus
2. Embryo
3. Bud
4. Anther

Question Number : 163 Question Id : 67809416581 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Phytohormone used for inducing the apical dominance is

Options :

1. Auxin
2. Gibberillin
3. Cytokinin
4. Ethylene

Question Number : 164 Question Id : 67809416582 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Most widely used fusogen for the protoplast fusion is

Options :

1. Mannitol
2. Sorbitol
3. Polyethylene glycol
4. Mannol

Question Number : 165 Question Id : 67809416583 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The fastest way to ripe a tomato, using plant tissue culture is

Options :

1. Protoplast culture

2. Callus culture

3. Plant organ culture

4. Pollen culture

Question Number : 166 Question Id : 67809416584 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For utilization of plant tissue culture as the chemical factory for the production of vitamins, _____ is chosen

Options :

1. Callus culture

2. Suspension culture

3. Protoplast culture

4. Organ culture

Question Number : 167 Question Id : 67809416585 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The embryos formed from unfertilized eggs are called

Options :

1. Androgenic embryos

2. Parthenogenic embryos

3. Somatic embryos

4. Adventive embryos

Question Number : 168 Question Id : 67809416586 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The term molecular pharming refers to

Options :

1. Production of genetically modified foods from plants

2. Synthesis of drugs from transgenic plants

3. Recombinant drugs from bacteria

4. Production of transgenic animals

Question Number : 169 Question Id : 67809416587 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which technique is applied for the introduction of genes from one dicot plant into another one?

Options :

1. Electrophoration

2. *Agrobacerium* infection

3. Particle acceleration

4. Microinjection

Question Number : 170 Question Id : 67809416588 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following plants does not contain symbiotic nitrogen fixing cyanobacteria?

Options :

1. Azolla

2. Anthoceros

3. Gnetum

4. Cycas

Question Number : 171 Question Id : 67809416589 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Conversion of NO_2^- to NO_3^- is carried out by

Options :

1. *Nitrosomonas*

2. *Nitrosococcus*

3. *Nitrobacter*

4. *Clostridium*

Question Number : 172 Question Id : 67809416590 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The function of leghaemoglobin in root nodules is

Options :

1. Generating aerobic conditions for optimum nitrogenase activity

2. Generating anaerobic conditions for optimum nitrogenase activity

3. Generating required oxygen for optimum nitrogenase activity

4. Generating suitable environment for the root nodule formation

Question Number : 173 Question Id : 67809416591 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Expression vectors differ from cloning vectors in having

Options :

1. Unique restriction sites

2. Orgin of replication site

3. Regulatory sequences

4. Specific marker genes

Question Number : 174 Question Id : 67809416592 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The mechanism of exogenous DNA intake by a cell is called

Options :

1. Transduction

2. Transformation

3. Conjugation

4. Transcription

Question Number : 175 Question Id : 67809416593 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Chief enzyme produced by the yeast is

Options :

1. Maltase

2. Amylase

3. Zymase

4. Fumerase

Question Number : 176 Question Id : 67809416594 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Defense proteins that are produced by the virus infected cells are called

Options :

1. Thymosin

2. Urokinase

3. Interferon

4. β-endorphin

Question Number : 177 Question Id : 67809416595 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first vaccine developed from animal cell culture is

Options :

1. Influenza vaccine

2. Hepatitis-B vaccine

3. Small pox vaccine

4. Polio vaccine

Question Number : 178 Question Id : 67809416596 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Technique used for the rapid multiplication and production of animals with desired genotypes is

Options :

1. Hybrid selection and embryo transfer

2. Protoplast fusion and embryo transfer

3. *In vitro* fertilization and embryo transfer

4. Somatic cell nuclear transfer

Question Number : 179 Question Id : 67809416597 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Optimum concentration of CO_2 required for culturing of animal cells is

Options :

1. 1-10%

2. 10-15%

3. 15-20%

4. 20-50 %

Question Number : 180 Question Id : 67809416598 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Human fibroblasts is an example of

Options :

1. Cell transformations

2. Established cell lines

3. Stable primary cell lines

4. Immortalized cell lines

Question Number : 181 Question Id : 67809416599 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In animal cell culture, meaning of transformation is

Options :

1. Exogenous uptake of genetic material

2. Phenotypic modifications of cell in a culture

3. Release of genetic information

4. Exogenous uptake of vectors

Question Number : 182 Question Id : 67809416600 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Options :

1. 1×10^5
2. 1.7×10^4
3. 2.7×10^5
4. 1×10^4

Question Number : 183 Question Id : 67809416601 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

DNA finger printing technology refers to

Options :

1. Identification of individuals by their finger prints
2. Molecular analysis of DNA profiles
3. Analysis of DNA samples using imprinting devices
4. Molecular analysis of different specimen DNA

Question Number : 184 Question Id : 67809416602 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The technique of obtaining the large number of plantlets by using plant tissue culture is called

Options :

1. Organ culture
2. Micropropagation
3. Macropropagation

4. Plantlet culture

Question Number : 185 Question Id : 67809416603 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Probiotics are

Options :

1. Food allergans

2. Edible vaccines

3. Live microbial food supplement

4. Live microbial anticancer supplement

Question Number : 186 Question Id : 67809416604 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is transfection?

Options :

1. Delivery of the target nucleic acids into eukaryotic animal cells

2. Separation of two animal cells

3. Providing necessary energy for the cell growth

4. Formation of a lipoplex

Question Number : 187 Question Id : 67809416605 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the nature of the DNA which is intended to be introduced into a eukaryotic cell?

Options :

1. Hydrophilic

2. Hydrophobic

3. Positively charged

4. Negatively charged

Question Number : 188 Question Id : 67809416606 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first drug produced using recombinant DNA technology is used to treat

Options :

1. Diabetes

2. Hemophilia

3. Cardiac Arrest

4. Dwarfism

Question Number : 189 Question Id : 67809416607 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Gene targeting is done on

Options :

1. Sperm cell

2. Egg cell

3. Fertilized ovum

4. Early embryonic cell

Question Number : 190 Question Id : 67809416608 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which gene transfer technique involves the usage of a fatty bubble to carry a gene into a somatic cell?

Options :

1. Electrophoration

2. Particle bombardment

3. Liposome transfer

4. Microinjection

Question Number : 191 Question Id : 67809416609 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a sequence alignment tool?

Options :

1. BLAST

2. PRINT

3. PROSITE

4. PIR

Question Number : 192 Question Id : 67809416610 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is a nucleotide sequence database?

Options :

1. EMBL

2. SWISSPROT

3. PROSITE

4. TREMBL

Question Number : 193 Question Id : 67809416611 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Single piece of information in a database is called

Options :

1. File

2. Field

3. Record

4. Dataset

Question Number : 194 Question Id : 67809416612 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The entire collection of proteins that are produced by an organism are called

Options :

1. Proteome

2. Genetic complement

3. Genome expression

4. Protein content

Question Number : 195 Question Id : 67809416613 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following methods can be used for increasing the penicillin production from *Penicillium chrysogenum*?

Options :

1. Mutagenesis

2. Directed Evolution

3. Protoplast fusion

4. Gene transfer between organisms

Question Number : 196 Question Id : 67809416614 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Amphiphilic molecules that are used in the emulsification and solubilization reactions are known as

Options :

1. Biopolymers

2. Biosurfactants

3. Organic acids

4. Secondary metabolites

Question Number : 197 Question Id : 67809416615 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following fuels contains the highest energy content?

Options :

1. Hydrogen

2. Methane

3. Gasoline

4. Ethanol

Question Number : 198 Question Id : 67809416616 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What provides the information necessary for specifying the 3-D shape of a protein?

Options :

1. The protein's peptide bonds

2. The protein's interactions with other polypeptides

3. The protein's amino acid sequence

4. The protein's interaction with molecular chaperones

Question Number : 199 Question Id : 67809416617 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The best model for visualizing the surface of a protein is

Options :

1. Backbone model

2. Space-filling model

3. Ribbon model

4. Wire model

Question Number : 200 Question Id : 67809416618 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Enzymes involved in the feedback inhibition are called

Options :

1. Holo enzymes

2. Allosteric enzymes

3. Apoenzymes

4. Co-enzymes