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 : 6780943803 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the traces of A and B are 20 and -8 then the trace of (A+B) is ___

Options :

1. 12
2. -12
3. 28
4. -28

Question Number : 2 Question Id : 6780943804 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A=\begin{bmatrix} x & 1 \\ 1 & 0 \end{bmatrix}$ is an involutory matrix then x=

Options :

1. 0
2. –2
3. –1
4. 2

Question Number : 3 Question Id : 6780943805 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The determinant of $\begin{bmatrix} \log e & \log e^2 & \log e^3 \\ \log e^2 & \log e^3 & \log e^4 \\ \log e^3 & \log e^4 & \log e^5 \end{bmatrix}$ is ___

Options :

1. 0
2. 1
3. $4\log e$
4. $5\log e$

Question Number : 4 Question Id : 6780943806 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A=\begin{bmatrix} 1 & 1 & 0 \\ 2 & 1 & 3 \\ 0 & 1 & 2 \end{bmatrix}$ then $\det(adjA) =$ ___

Options :

1. $\det A$
2. $\det A^2$
3. $-\det A$
4. $(\det A)^2$

Question Number : 5 Question Id : 6780943807 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If A, B are two matrices and $AB=B$, $BA=A$ then $A^2+B^2=$

Options :

1. $A+B$
2. $A-B$
3. AB
4. 0

Question Number : 6 Question Id : 6780943808 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\frac{3x+2}{(x+1)(2x^2+3)}=\frac{A}{x+1}+\frac{Bx+C}{2x^2+3}$, then $A+C-B=$ ___

Options :

1. 0
2. 2
3. 3
4. 5

Question Number : 7 Question Id : 6780943809 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\frac{3x}{(x-a)(x-b)}=\frac{2}{x-a}+\frac{1}{x-b}$ then $a:b=$ ___

Options :

1. $-2:1$
2. $2:1$
3. $1:2$
4. $3:1$

Question Number : 8 Question Id : 6780943810 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\tan 855°=$ ____

Options :

1. 1
2. $\frac{1}{\sqrt{2}}$
3. -1
4. $-\frac{1}{\sqrt{2}}$

Question Number : 9 Question Id : 6780943811 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\tan\alpha=\frac{m}{m+1}$ and $\tan\beta=\frac{1}{2m+1}$ then $\tan(\alpha+\beta)=$ ____

Options :

1. -1

2. 0

3. 1

4. 2

Question Number : 10 Question Id : 6780943812 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $6\sin 20° - 8\sin^3 20° =$

Options :

1. 2

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

3. $\sqrt{3}$

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

Question Number : 11 Question Id : 6780943813 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $3\sin\theta + 4\cos\theta = 5$ then the value of $4\sin\theta - 3\cos\theta =$

Options :

1. 0

2. -1

3. 1

4. 2

Question Number : 12 Question Id : 6780943814 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The sine function with period 3 is

Options :

1. $sin\frac{2\pi x}{3}$

2. $sin\frac{\pi x}{3}$

3. $sin\ 3\pi x$

4. $sin\frac{3\pi x}{2}$

Question Number : 13 Question Id : 6780943815 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum value of $3\sin^2 x+5\cos^2 x$ is ____

Options :

1. 8

2. 3

3. 5

4. 34

Question Number : 14 Question Id : 6780943816 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation $\sqrt{3}\sin x+\cos x=4$ has ____

Options :

1. Only one solution

2. two solutions

3. Infinite solutions

4. no solution

Question Number : 15 Question Id : 6780943817 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\mathrm{Cos}^{-1}\left(\sqrt{3}x\right)+\mathrm{Cos}^{-1}x=\frac{\pi}{2}$ is ___

Options :

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

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

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

4. $-\frac{1}{5}$

Question Number : 16 Question Id : 6780943818 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\sin\theta+\sin(\theta+120°)-\sin(120°-\theta)=$ _____

Options :

1. 0

2. $\sin\theta$

3. 1

4. $-\sin\theta$

Question Number : 17 Question Id : 6780943819 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The principal solution of $3\mathrm{Cosec}A=4\mathrm{Sin}A$ is ____

Options :

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

2. $\pm\frac{\pi}{3}$

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

4. $\pm 2\pi$

Question Number : 18 Question Id : 6780943820 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\left|z^2-1\right|=\left|z\right|^2+1.$ then z lies in ____

Options :

1. The real axis

2. a circle

3. The imaginary axis

4. a parabola

Question Number : 19 Question Id : 6780943821 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\left(\frac{1+i}{1-i}\right)^3-\left(\frac{1-i}{1+i}\right)^3=a+ib$, then *a* an *b* are ____

Options :

1. 1,1
2. 2,-2
3. 0,-2
4. 0,-1

Question Number : 20 Question Id : 6780943822 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the line $y=2x+c$ is a tangent to $x^2+y^2=5$ then the value of *c* is ____

Options :

1. 2
2. 3
3. 4
4. 5

Question Number : 21 Question Id : 6780943823 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The vertex of the parabola $x^2+8x+12y+4=0$ is

Options :

1. $(-4,1)$
2. $(4,-1)$
3. $(-4,-1)$
4. $(4,1)$

Question Number : 22 Question Id : 6780943824 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of tangents to the ellipse $\frac{x^2}{4}+\frac{y^2}{2}=1$ through (2,1) is ____

Options :

1. 0

2. 1

3. 2

4. 3

Question Number : 23 Question Id : 6780943825 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the latus rectum of the hyperbola $x^2-4y^2=4$ is ____

Options :

1. 2

2. 1

3. 4

4. 3

Question Number : 24 Question Id : 6780943826 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the diameter of the circle $x^2+y^2-6x-8y=0$ is _____

Options :

1. 10

2. 15

3. 5

4. 20

Question Number : 25 Question Id : 6780943827 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the line $2y=5x+k$ touches the parabola $y^2=6x$ then k= ___

Options :

1. $\frac{2}{3}$

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

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

4. $\frac{6}{5}$

Question Number : 26 Question Id : 6780943828 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\lim_{x\to 2+} \frac{x|x-2|}{x-2} = \_\_\_\_\_$$

Options :

1. 1
2. −1
3. 2
4. −2

Question Number : 27 Question Id : 6780943829 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f(x) = (1+x)^{\frac{2}{x}}$ is continuous at $x = 0$ then $f(0) = \_\_\_$

Options :

1. e
2. e^2
3. e^3
4. e^4

Question Number : 28 Question Id : 6780943830 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $x = a\sec\theta, y = b\tan\theta$ then $\frac{dy}{dx} = \_\_\_\_$

Options :

1. $\frac{b}{a}\sec\theta$
2. $\frac{b}{a}\operatorname{cosec}\theta$
3. $\frac{a}{b}\sec\theta$
4. $\frac{a}{b}\operatorname{cosec}\theta$

Question Number : 29 Question Id : 6780943831 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $x^y = e^{x-y}$ then $\frac{dy}{dx} =$ ____

Options :

1. $\frac{\log x}{(1+\log x)^2}$

2. $\frac{\log x}{(1-\log x)^2}$

3. $\frac{-\log x}{(1+\log x)^2}$

4. $\frac{-1}{(1+\log x)^2}$

Question Number : 30 Question Id : 6780943832 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \sin^{-1}\left(\frac{x}{\sqrt{1+x^2}}\right)$ then $\frac{dy}{dx} =$ ____

Options :

1. $-\frac{1}{1+x^2}$

2. $\frac{1}{1+x^2}$

3. $\frac{2}{1+x^2}$

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

Question Number : 31 Question Id : 6780943833 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The slope of the normal to the curve $x = a\sec\theta, y = a\tan\theta$ at $\theta = \frac{\pi}{6}$ is ____

Options :

1. 2
2. 0
3. $-\frac{1}{2}$
4. 1

Question Number : 32 Question Id : 6780943834 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The rate of change of area of a circle with respect to radius when r=5cm is

Options :

1. 2π sq.cm/sec
2. 10π sq.cm/sec
3. 100π sq.cm/sec
4. 20π sq.cm/sec

Question Number : 33 Question Id : 6780943835 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following function has maxima or minima?

Options :

1. e^x
2. $\log x$
3. x^3+x^2+x+1
4. $\sin x$

Question Number : 34 Question Id : 6780943836 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the increase in the side of a square is 2% then the approximate percentage increase in the area of the square is _____

Options :

1. 2
2. 4
3. 6
4. 8

Question Number : 35 Question Id : 6780943837 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For the function $f(x)=\log(x^2+y^2)$, which of the following is true?

Options :

1. $f_x+f_y=0$

2. $f_{xx}+f_{yy}=0$

3. $f_x-f_y=0$

4. $f_{xx}-f_{yy}=0$

Question Number : 36 Question Id : 6780943838 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\int \text{cosec}^5\theta\cot\theta d\theta =$ _____

Options :

1. $\frac{\cot^2\theta}{2}$

2. $\frac{-\text{cosec}^5\theta}{5}$

3. $\frac{\text{cosec}^6\theta}{6}$

4. $\frac{-\text{cosec}^6\theta}{6}$

Question Number : 37 Question Id : 6780943839 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\int_2^3 \frac{dx}{x^2-x} =$ ____

Options :

1. $\log\frac{2}{3}$

2. $\log\frac{4}{3}$

3. $\log\frac{8}{3}$

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

Question Number : 38 Question Id : 6780943840 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $a<0<b$ then $\int_a^b \frac{|x|}{x}dx =$ _____

Options :

1. $b-a$

2. $a-b$

3. $a+b$

4. 0

Question Number : 39 Question Id : 6780943841 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\int_0^1 x\tan^{-1}x dx =$ _____

Options :

1. $\frac{\pi}{4}-\frac{1}{2}$

2. $\frac{\pi}{8}-\frac{1}{2}$

3. $\frac{\pi}{4}+\frac{1}{2}$

4. $\frac{\pi}{8}+\frac{1}{2}$

Question Number : 40 Question Id : 6780943842 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\lim_{n\to\infty}\sum_{r=1}^{n}\frac{1}{n}e^{\frac{r}{n}} =$ _____

Options :

1. e

2. $(1+e)$

3. $(1-e)$

4. $(e-1)$

Question Number : 41 Question Id : 6780943843 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\int_0^{\pi/4} \sec^6 x dx = \_\_\_\_\_$$

Options :

1. $\frac{8}{3}$

2. $\frac{28}{15}$

3. $-\frac{28}{15}$

4. $\frac{4}{5}$

Question Number : 42 Question Id : 6780943844 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The area bounded by the curve $y = \log x$, x-axis and the straight line $x - e = 0$ is _____square units

Options :

1. e

2. $(e-1)$

3. 0

4. $(1-e)$

Question Number : 43 Question Id : 6780943845 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The volume of the solid generated by rotating one arch of the curve $y = Sin3x$ about the x-axis is----

Options :

1. π^2

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

3. $\frac{\pi^2}{4}$

4. $\frac{\pi^2}{6}$

Question Number : 44 Question Id : 6780943846 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$y = cx - c^2$ is the general solution of the differential equation

Options :

1. $\left(\frac{dy}{dx}\right)^2 - x\left(\frac{dy}{dx}\right) + y = 0$

2. $\frac{d^2y}{dx^2} = 0$

3. $\frac{dy}{dx} = c$

4. $\left(\frac{dy}{dx}\right)^2 + x\left(\frac{dy}{dx}\right) + y = 0$

Question Number : 45 Question Id : 6780943847 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of the differential equation $\frac{dy}{dx} + \frac{y}{3} = 1$ is

Options :

1. $y = 3 + ce^{\frac{x}{3}}$

2. $y = 3 + ce^{-\frac{x}{3}}$

3. $3y = c + e^{\frac{x}{3}}$

4. $3y = c + e^{-\frac{x}{3}}$

Question Number : 46 Question Id : 6780943848 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The differential equation corresponding to the family of curves $y = ae^{bx}$, where *a* and *b* are arbitrary constants, is ____

Options :

1. $\frac{d^2y}{dx^2} = y\frac{dy}{dx}$

2. $y\frac{d^2y}{dx^2} - \frac{dy}{dx} = 0$

3. $y\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^2$

4. $\frac{dy}{dx} - y^2 = 0$

Question Number : 47 Question Id : 6780943849 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An integrating factor of the differential equation $(x^2y + y + 1)dx + (x + x^3)dy = 0$ is __

Options :

1. e^x

2. x^2

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

4. x

Question Number : 48 Question Id : 6780943850 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The differential equation whose solution is $Ax^2 + By^2$, where A,B are arbitrary constants are of ----

Options :

1. 1^{st} order and 1^{st} degree

2. 2^{nd} order and 1^{st} degree

3. 2^{nd} order and 2^{nd} degree

4. 1^{st} order and 2^{nd} degree

Question Number : 49 Question Id : 6780943851 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of the differential equation $\frac{d^2x}{dt^2}-4\frac{dx}{dt}+5x=0$ is

Options :

1. $x=(c_1\cos t+c_2\sin t)e^{2t}$

2. $t=(c_1\cos x+c_2\sin x)e^{2x}$

3. $x=(c_1\cos 2t+c_2\sin 2t)e^{t}$

4. $t=(c_1\cos 2x+c_2\sin 2x)e^{x}$

Question Number : 50 Question Id : 6780943852 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The particular integral of $(D-2)^2y=\sin 2x$ is

Options :

1. $\frac{\cos 2x}{8}$

2. $\frac{\sin 2x}{8}$

3. $\frac{-\cos 2x}{2}$

4. $\frac{-\sin 2x}{2}$

Physics

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

Question Number : 51 Question Id : 6780943853 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The unit of impulse is the same as that of

Options :

1. moment of force

2. linear momentum

3. force

4. pressure

Question Number : 52 Question Id : 6780943854 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the force is given by $F = at+bt^2$ where t is the time. The dimensions of a and b are

Options :

1. MLT^{-4}, MLT^{-2}

2. MLT^{-3}, MLT^{-4}

3. ML^2T^{-3}, ML^2T^{-2}

4. ML^2T^{-3}, ML^3T^{-4}

Question Number : 53 Question Id : 6780943855 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Vector parallel to $6\hat{i} + 8\hat{j}$ and having a magnitude of 5 is

Options :

1. $4\hat{i} + 3\hat{j}$

2. $12\hat{i} + 16\hat{j}$

3. $16\hat{i} + 8\hat{j}$

4. $3\hat{i} + 4\hat{j}$

Question Number : 54 Question Id : 6780943856 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $|\vec{A} \times \vec{B}| = K(AB)$ then angle between $\vec{A}$ and $\vec{B}$ is

Options :

1. $\cos^{-1}K$

2. $\cos^{-1}(1/K)$

3. $\sin^{-1}K$

4. $\sin^{-1}(1/K)$

Question Number : 55 Question Id : 6780943857 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cricket ball is thrown at a speed of 28 m/s in a direction 30^0 above the horizontal. The maximum height reached by the ball is

Options :

1. 10 m

2. 20 m

3. 30 m

4. 40 m

Question Number : 56 Question Id : 6780943858 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two bodies are projected at angles of 45^0 and 60^0 with the horizontal with same velocity simultaneously. Ratio of their horizontal ranges is

Options :

1. $\sqrt{3}:2$

2. $2:\sqrt{3}$

3. 1:2

4. 2:1

Question Number : 57 Question Id : 6780943859 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A ball thrown by a boy is caught 2 seconds later by another at some distance away on the same level. If the angle of projection is 30^0, the velocity of projection is

Options :

1. 19.6 m/sec

2. 9.8 m/sec

3. 4.9 m/sec

4. 5.2 m/sec

Question Number : 58 Question Id : 6780943860 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A 200 m wide river flows with a velocity of 5 m/sec. A man crosses the river in the shortest time of 25 sec. If there is no flow and he swims with the same velocity, the time taken to cross the river is

Options :

1. $\frac{200}{5\sqrt{3}}$ sec

2. 20 sec

3. 25 sec

4. $25\sqrt{2}$ sec

Question Number : 59 Question Id : 6780943861 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A body of mass 1 Kg lies on an inclined plane of angle 60^0 to the horizontal. If the coefficient of friction is 0.4, the frictional force along the inclined plane is

Options :

1. 1.96 N

2. 0.98 N

3. 0.49 N

4. 0.245 N

Question Number : 60 Question Id : 6780943862 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A force of 20 Kg weight is required to just slide a wooden box weighing 50 Kg over ice. Then coefficient of static friction between the surfaces in contact is

Options :

1. 0.2

2. 0.4

3. 0.8

4. 0.1

Question Number : 61 Question Id : 6780943863 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cyclist comes to a skidding stop in 10m. During this process, the force on the cycle due to the road is 200N and is directly opposed to the motion. The work done by the road on the cycle is

Options :

1. 1000 J

2. 2000J

3. -1000J

4. -2000J

Question Number : 62 Question Id : 6780943864 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A sphere of mass 4 Kg is dropped from a certain height. After 5s, its kinetic energy is ($g=10\ m/s^2$)

Options :

1. 5J

2. 50 J

3. 5 KJ

4. 50 KJ

Question Number : 63 Question Id : 6780943865 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An elevator weighing 500 kg is to be lifted up at a constant velocity of 0.20 m/s. What would be the minimum power of the motor to be used?

Options :

1. 100 W

2. 500 W

3. 980 W

4. 900 W

Question Number : 64 Question Id : 6780943866 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

At t=0, the displacement of a particle in SHM is half its amplitude. Its initial phase is (referring to mean position)

Options :

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

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

3. $\frac{2\pi}{3}$

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

Question Number : 65 Question Id : 6780943867 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of seconds pendulum is 100 cm. To have a period half of this value, the length is to be reduced by

Options :

1. 25 cm

2. 75 cm

3. 50 cm

4. 100 cm

Question Number : 66 Question Id : 6780943868 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Inside a big hall, the reverberation time is

Options :

1. directly proportional to volume

2. inversely proportional to sound absorption

both directly proportional to volume

and

inversely proportional to sound absorption

3.

4. depends on temperature

Question Number : 67 Question Id : 6780943869 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The voice of lion is different from that of a mosquito because

Options :

1. the sounds have different pitch

2. they are of different size

3. the two voices travel with different velocities

4. the sounds have different phases

Question Number : 68 Question Id : 6780943870 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A car is travelling at $\frac{v}{10}$ m/s and sounds horn of frequency 990 Hz. The apparent frequency heard by a police chasing the car at $\frac{v}{9}$ m/s (v is the velocity of sound) is

Options :

1. 990 Hz

2. 900 Hz

3. 100 Hz

4. 1000Hz

Question Number : 69 Question Id : 6780943871 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When ice cube melts and becomes water, the ice-water system undergoes a change such that

Options :

1. entropy of the system decreases and internal energy decreases

2. entropy of the system decreases and internal energy increases

3. entropy of the system increases and internal energy increases

4. entropy of the system increases and internal energy decreases

Question Number : 70 Question Id : 6780943872 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A mass of 300 gm falls from a height of 3 m($g=9.8\ m/s^2$). Assuming that the whole energy is converted into heat, the amount of heat produced is

Options :

1. 2 cal

2. 2.1 cal

3. 4 cal

4. 4.2 cal

Question Number : 71 Question Id : 6780943873 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During an adiabatic expansion of 2 moles of a gas, the change in internal energy was found to be equal to 100 J. The work done during the process will be equal to

Options :

1. zero

2. -100 J

3. 200 J

4. 100 J

Question Number : 72 Question Id : 6780943874 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pressure and density of a diatomic gas ($\gamma = \frac{7}{5}$) change adiabatically from (P,d) to (P^1,d^1). If $\frac{d^1}{d} = 32$, then $\frac{P^1}{P}$ is

Options :

1. 128

2. 32

3. 256

4. 64

Question Number : 73 Question Id : 6780943875 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Boyle's law holds good for an ideal gas during

Options :

1. isobaric changes

2. isothermal changes

3. isochoric changes

4. isotopic changes

Question Number : 74 Question Id : 6780943876 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The threshold frequency of metal is υ_0. When a light of frequency 4 υ_0 is incident on metal then the $K.E_{max}$ of emitted electrons is

Options :

1. $2\upsilon_0 h$

2. $3\upsilon_0 h$

3. $4\upsilon_0 h$

4. $\upsilon_0 h$

Question Number : 75 Question Id : 6780943877 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Superconductors are _____ materials

Options :

1. dielectric

2. paramagnetic

3. ferromagnetic

4. diamagnetic

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

Question Number : 76 Question Id : 6780943878 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Pauli exclusion principle is concerned with

Options :

1. Energy of orbital.
2. Spin of electron.
3. Energy of electron
4. Angular momentum of electron

Question Number : 77 Question Id : 6780943879 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

According to Bohr's model of hydrogen atom, the following is quantized

Options :

1. Linear momentum
2. Linear velocity
3. Angular momentum
4. Angular velocity

Question Number : 78 Question Id : 6780943880 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

How many 'd' – orbitals have two perpendicular nodal planes

Options :

1. Two
2. Three
3. Four
4. Five

Question Number : 79 Question Id : 6780943881 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In sodium chloride crystal, each Na^+ ion is surrounded by

Options :

1. Two Cl^- ions
2. Four Cl^- ions
3. Six Cl^- ions
4. Eight Cl^- ions

Question Number : 80 Question Id : 6780943882 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following molecule contains a π – bond

Options :

1. H_2
2. O_2
3. F_2
4. HCl

Question Number : 81 Question Id : 6780943883 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is insoluble in water?

Options :

1. Alcohol
2. Ammonia
3. Benzene
4. Acetone

Question Number : 82 Question Id : 6780943884 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The normality of 2.3 M H_2SO_4 solution is

Options :

1. 0.46N
2. 0.23 N
3. 2.3 N

4. 4.6N

Question Number : 83 Question Id : 6780943885 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

8 grams of substance of molecular weight 40 is dissolved in 250 g of water. Then the **molality** of the solution is

Options :

1. 0.4

2. 0.8

3. 0.2

4. 0.6

Question Number : 84 Question Id : 6780943886 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pH value of 0.05M $Ba(OH)_2$ solution is

Options :

1. 10

2. 12

3. 13

4. 11

Question Number : 85 Question Id : 6780943887 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following molecule is not a Lewis Base?

Options :

1. H_2O

2. BF_3

3. NH_3

4. CO

Question Number : 86 Question Id : 6780943888 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During the electrolysis of brine, 710 g of Cl_2 was liberated at anode. The weight of NaOH formed

Options :

1. 800 g

2. 400 g

3. 80 g

4. 40 g

Question Number : 87 Question Id : 6780943889 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the Danniel cell, which electrode acts as anode?

Options :

1. Cu

2. Hg

3. Zn

4. Pt

Question Number : 88 Question Id : 6780943890 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The molar conductance of HCl is more than that of NaCl because

Options :

1. NaCl is more polar than KCl

2. NaCl is ionic while HCl is covalent

3. Ionic mobility of H^+ is more than that of Na^+

4. H^+ get hydrated.

Question Number : 89 Question Id : 6780943891 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The units for electrochemical equivalent are

Options :

1. grams

2. grams ampere

3. Coulomb

4. Grams per coulomb

Question Number : 90 Question Id : 6780943892 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Zeolite softening process removes

Options :

1. Only permanent hardness of water
2. Only temporary hardness of water
3. Both temporary and permanent hardness of water
4. The dissolved gases in permanent hard water.

Question Number : 91 Question Id : 6780943893 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The permanent hardness of water is caused by the presence of

Options :

1. Bicarbonates of Ca and Mg
2. Carbonates of Na and K
3. Chlorides and Sulphates of Ca and Mg.
4. Phosphates of Na and K

Question Number : 92 Question Id : 6780943894 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The secondary treatment of water uses _____ to consume wastes in water.

Options :

1. Filtration
2. Sedimentation
3. Chemicals
4. Microorganisms

Question Number : 93 Question Id : 6780943895 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Difficult to monitor and very dangerous form of corrosion is

Options :

1. Galvanic
2. Pitting

3. Crevice

4. Stress

Question Number : 94 Question Id : 6780943896 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When Pt and Co are electrically connected, which one gets corroded?

Options :

1. Co

2. Pt

3. None

4. both

Question Number : 95 Question Id : 6780943897 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What rubber was invented when Dr. Joseph C. Patrick tried to make antifreeze?

Options :

1. Methyl rubber

2. Chloroprene

3. Bruna N

4. Thiokol

Question Number : 96 Question Id : 6780943898 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first plastic ever synthesized was called _____.

Options :

1. Bakelite

2. Nylon

3. Dacron

4. Cellulose

Question Number : 97 Question Id : 6780943899 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

_____ is a brand of polyester textile fiber that is wrinkle resistant and strong

Options :

1. Cellulose

2. Dacron

3. Bakelite

4. Nylon

Question Number : 98 Question Id : 6780943900 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Water gas is a mixture of

Options :

1. $H_2 + CO$

2. $N_2 + CO$

3. $H_2 + CO_2$

4. $H_2 + CH_4$

Question Number : 99 Question Id : 6780943901 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a greenhouse gas?

Options :

1. CO

2. CO_2

3. water vapour

4. CH_4

Question Number : 100 Question Id : 6780943902 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Burning of fossil fuels causes

Options :

1. Global warming

2. Ozone depletion

3. Acid rain

4. Eutrophication

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

Question Number : 101 Question Id : 6780943903 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a source of inorganic nitrogen for industrial microbes?

Options :

1. Ammonium sulphate
2. Di-ammonium hydrogen phosphate
3. Ammonia
4. Proteins

Question Number : 102 Question Id : 6780943904 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Sulphite waste liquor is a by-product of

Options :

1. Sugar industry
2. Dairy industry
3. Leather industry
4. Paper industry

Question Number : 103 Question Id : 6780943905 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is used as an antifoaming agent in fermenters?

Options :

1. Methanol
2. Silicone compounds
3. Ethanol
4. PEG

Question Number : 104 Question Id : 6780943906 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is not a part of fermentation process?

Options :

1. Propagation step

2. Downstream processing

3. Pilot scale fermentation

4. Main production fermentation

Question Number : 105 Question Id : 6780943907 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is the cheapest source of carbon for Industrial fermentations?

Options :

1. Sucrose

2. Molasses

3. Glucose

4. Fructose

Question Number : 106 Question Id : 6780943908 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Peptones are prepared by acid or enzyme hydrolysis of

Options :

1. High lipid material

2. High carbohydrate material

3. High sugar material

4. High protein material

Question Number : 107 Question Id : 6780943909 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is a limitation of liquid biofertilizers over carrier based Fertilizers?

Options :

1. Longer shelf life

2. No contamination

3. Better survival on seeds and soil

4. Low export potential

Question Number : 108 Question Id : 6780943910 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a bio-pesticide?

Options :

1. Chitosan

2. Insect pheromones

3. Azolla

4. Bt toxin

Question Number : 109 Question Id : 6780943911 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following does not come in the category of biopesticides?

Options :

1. Microbial pesticides

2. Plant incorporated protectants

3. Biochemical Pesticides

4. Chemical pesticides

Question Number : 110 Question Id : 6780943912 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a biofertilizer?

Options :

1. Rhizobium

2. Azobactor

3. Agrobacterium

4. Azospirilum

Question Number : 111 Question Id : 6780943913 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

According to the cell theory

Options :

1. All the organism are composed of several cells

2. Life continues to evolve a new with each new cell

3. The smallest living thing is a cell

4. New cells arise spontaneously when conditions are right

Question Number : 112 Question Id : 6780943914 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is the most appropriate definition of Biophysics?

Options :

1. Using and developing tools from physics to study biological systems

2. Study of physics

3. Study of physical chemistry

4. Study of chemical properties

Question Number : 113 Question Id : 6780943915 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is not an area of biophysics?

Options :

1. Medical Imaging

2. Structural biology

3. Systems biology

4. Microbiology

Question Number : 114 Question Id : 6780943916 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Who proposed cell theory ?

Options :

1. Joseph lister

2. Robert koach

3. Nitch

4. Schleiden and schwain

Question Number : 115 Question Id : 6780943917 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What correctly describes of atomic theory

Options :

1. Matter is made up of protons

2. Cells are basic unit of life

3. It is the characteristics and properties of atoms that make up matter

4. Matter is made up of neutrons

Question Number : 116 Question Id : 6780943918 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is incorrect about significance of biological membranes being selectively permeable?

Options :

1. It permits selective uptake of nutrients and elimination of Waste

2. Allows cells to concentrate particular ions on either side of the membrane

3. Prevents toxic material from entering the cells

4. Hydrophilic heads are not immerged in water

Question Number : 117 Question Id : 6780943919 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is used for visualization of internal structure by projection of an electron beam on to the sample?

Options :

1. SEM

2. TEM

3. Stereo microscope

4. Compound microscope

Question Number : 118 Question Id : 6780943920 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Movement of molecules across the membrane against a concentration gradient at the expense of ATP is called

Options :

1. Active transport

2. Passive transport

3. Osmosis

4. Facilitated diffusion

Question Number : 119 Question Id : 6780943921 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The biological membranes are made up of

Options :

1. Lipids

2. Proteins

3. Carbohydrates

4. Lipoproteins

Question Number : 120 Question Id : 6780943922 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Motile bacterium can be seen with the help of

Options :

1. Bright field microscope

2. Electron microscopy

3. Darkfield microscopy

4. Fluorescence microscopy

Question Number : 121 Question Id : 6780943923 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Alternate form of gene governing the expression of same trait that occur at the same position on homologous chromosomes are known as

Options :

1. Chromatids
2. Autosomes
3. Alleles
4. mRNA

Question Number : 122 Question Id : 6780943924 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For Mendel's pea plants tall was dominant over dwarf (f) and red (R) was dominant over white flowers (P). A plant with genotype ttPp would have the phenotype

Options :

1. tall with white flowers
2. dwarf with white flowers
3. dwarf with red flower
4. tall with red flower

Question Number : 123 Question Id : 6780943925 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The condition that results from one allele affecting more than one trait is called

Options :

1. Incomplete dominance
2. Epistasis
3. Partial dominance
4. Pleiotropy

Question Number : 124 Question Id : 6780943926 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is not true about meiosis?

Options :

1. It occurs in reproductive cells

2. It results in four haploid daughter cells

3. Homologous pair are pulled apart

4. Occurs only in plants

Question Number : 125 Question Id : 6780943927 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is the correct order of organisation of genetic material from largest to smallest?

Options :

1. Genome, chromosome, gene, nucleotide

2. Gene , chromosome , nucleotide, genome

3. Chromosome , gene ,genome, nucleotide

4. Chromosome, genome, nucleotide , gene

Question Number : 126 Question Id : 6780943928 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is a source of genetic recombination during gamete production?

Options :

1. Mutation

2. Crossing over

3. Controlled assortment

4. Nondisjunction

Question Number : 127 Question Id : 6780943929 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Males who have XXY combination due to nondisjunction have the condition called

Options :

1. Turner syndrome

2. Haemophilia

3. Klinefelter syndrome

4. Down syndrome

Question Number : 128 Question Id : 6780943930 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The mutations which express differently depending on the sex of the parent the gene is passed through are known as

Options :

1. Sex linked inheritance

2. Imprinting

3. Penetrance

4. Epistasis

Question Number : 129 Question Id : 6780943931 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When there are two breaks in a chromosome and the detached segment becomes reinserted in the reversed order, it is called a

Options :

1. Inversion

2. Translocation

3. Transversion

4. Deletion

Question Number : 130 Question Id : 6780943932 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is true about holandric genes?

Options :

1. They are carried on X chromosome

2. They are carried on Y chromosome and can only be passed by males to their sons

3. They code for femaleness

4. They are transferred from mothers to daughters

Question Number : 131 Question Id : 6780943933 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a sterilization method?

Options :

1. Steam

2. Dry heat

3. Ethylene oxide

4. PEG treatment

Question Number : 132 Question Id : 6780943934 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is used for ionizing radiation sterilization?

Options :

1. UV radiation

2. Gamma radiation

3. Formadehyde

4. NaOCl treatment

Question Number : 133 Question Id : 6780943935 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is not an authentic Microbial Culture collection centre?

Options :

1. ATCC

2. NCL

3. NBPGR

4. MTCC

Question Number : 134 Question Id : 6780943936 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of surviving microbial cells in the exponential death phase are given in terms of

Options :

1. Decimal death time
2. Decimal reduction time
3. Thermal death time
4. Thermal death point

Question Number : 135 Question Id : 6780943937 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is not a preservation method?

Options :

1. Freezing
2. Mineral oil Overlay
3. Lyophilisation storage in silica gel
4. Autoclaving

Question Number : 136 Question Id : 6780943938 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Chemotherapeutic agent

Options :

1. Kills the surface
2. Is used for surface sterilization
3. Is used internally to kill microbe with selective toxicity towards microbes
4. Is used for disinfection

Question Number : 137 Question Id : 6780943939 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The growth phase when doubling time is constant and shortest is Called

Options :

1. Log phase

2. Exponential phase

3. Stationary phase

4. Decline Phase

Question Number : 138 Question Id : 6780943940 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

General purpose media supplemented by special nutrients to encourage the growth of fastidious heterotrophs is known as

Options :

1. Enriched media

2. Selective media

3. Differential media

4. Complex media

Question Number : 139 Question Id : 6780943941 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Media which favours the growth of particular microbe and inhibits others is known as

Options :

1. Enriched media

2. Selective media

3. Differential media

4. Complex media

Question Number : 140 Question Id : 6780943942 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Media that distinguishes between different groups of bacteria on the basis of their biological characteristics and causes observable changes in media when biochemical reactions occur is called

Options :

1. Enriched media

2. Selective media

3. Differential media

4. Complex media

Question Number : 141 Question Id : 6780943943 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a plug flow reactor, the highest concentration of substrates is exposed to the cells that

Options :

1. Are near the effluent or exit of the reactor

2. Are in the mid way along the reactor

3. Are located near entrance of feed

4. Are near the wall of the reactor

Question Number : 142 Question Id : 6780943944 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In fed batch bioreactor modelling, the rate of change in the bioreactor volume is assumed to be equal to

Options :

1. Flow rate

2. Initial volume

3. Volume of solids in the reactor

4. Volume of liquid

Question Number : 143 Question Id : 6780943945 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Production of organic acids in batch culture is generally, growth associated phase followed by non-growth associated production. The probable reason for this is that

Options :

1. Organic acids uncouple catabolism from Anabolism

2. Biomass yields increase as the fermentation Proceeds

3. Organic acids are secondary metabolites

4. High concentrations of organic acid promote the growth of the microbial population

Question Number : 144 Question Id : 6780943946 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The ideal tubular-flow fermenter without radial variations is called a

Options :

1. Plug flow fermenter

2. Continuous stirred tank fermenter (CSTF)

3. Column fermenter

4. Rotating drum fermenter

Question Number : 145 Question Id : 6780943947 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When the product formation is approximately equal to the rate of cell growth, the pattern of product formation is termed as

Options :

1. uncoupled

2. growth associated

3. non-growth associated

4. metabolically uncoupled

Question Number : 146 Question Id : 6780943948 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For continuous mode of operation the specific mass balance equation for chemostat is

Options :

1. $Y_{Sx}=\mu/r_s$

2. $\mu=D$

3. $\mu_{max}= Cs/Cs-ks$

4. F/V

Question Number : 147 Question Id : 6780943949 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The vast majority of closed loop controllers used in bioprocess engineering are

Options :

1. Proportional control

2. Integral control

3. Adaptive control

4. Proportional integral derivative (PID) control

Question Number : 148 Question Id : 6780943950 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Saturated clean steam is used for sterilization in place operations in bioreactors. The optimal steam pressure required is

Options :

1. 10.2-10.5 bar gauge

2. 5.6-10.2 bar gauge

3. 1.1-1.4 bar gauge

4. 12.3-16.0 bar gauge

Question Number : 149 Question Id : 6780943951 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Sterilization in – place operation in a bioreactor mainly requires a complex arrangement of pipe work , valves and

Options :

1. Foam Breaker

2. Filters

3. Sight Glass

4. Cold Water

Question Number : 150 Question Id : 6780943952 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a 50 L Stirred Tank Bioreactor for animal or plant cell culture applications the impeller speed should not exceed

Options :

1. 180 rpm

2. 120 rpm

3. 30 rpm

4. 200 rpm

Question Number : 151 Question Id : 6780943953 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Polymerase chain reaction is used to

Options :

1. Amplify small amount of DNA

2. Cleave the DNA

3. Seal the sticky end

4. Identification of plasmids

Question Number : 152 Question Id : 6780943954 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During DNA replication what is the first process to occur?

Options :

1. Synthesis of lagging strand

2. Unwinding of parental strand

3. Synthesis of leading strand

4. Sealing of nicks between short DNA sections

Question Number : 153 Question Id : 6780943955 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The process where DNA is copied into messenger RNA is called

Options :

1. Translation

2. Translocation

3. Transversion

4. Transcription

Question Number : 154 Question Id : 6780943956 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is not true about alkatonuria?

Options :

1. It is called black wine disease

2. It is inherited genetic disorder of phenylalnine and tyrosine metabolism

3. Affects glueocunidase

4. Homogenistic acid build up in the body.

Question Number : 155 Question Id : 6780943957 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

DNA is called double helix. What does it mean?

Options :

1. Two X shaped strands

2. Two loops like figure eight

3. Two spirals, like a twisty ladder

4. Two Y shaped strand

Question Number : 156 Question Id : 6780943958 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Agarose gel, electrophoresis separate nucleic acids based on their

Options :

1. G+C/A+T content

2. Ratio of mass/charge

3. Length

4. Origin of organism

Question Number : 157 Question Id : 6780943959 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An operon is a transcriptional unit in bacteria that contains

Options :

1. RNA polymerase loading zones

2. A promoter site, an operator site one or more regulatory genes

3. A promoter site, an operator site and two or more structural genes

4. Two acting elements with transacting factors

Question Number : 158 Question Id : 6780943960 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Eukaryotic DNA replication is

Options :

1. Conservative

2. Semiconservative

3. Dispersive

4. Semi-dispersive

Question Number : 159 Question Id : 6780943961 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is an incorrect statement about essential genes?

Options :

1. Essential genes are relatively preserved throughout bacterial kingdom than nonessential genes

2. They have higher proportion of large and small proteins

3. They are thought to be critical for the survival of the organism

4. They are not necessary for survival

Question Number : 160 Question Id : 6780943962 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

DNA is made from RNA with the help of

Options :

1. Restriction enzyme
2. Polymerase
3. Reverse transcriptase
4. Ligase

Question Number : 161 Question Id : 6780943963 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Callus can be defined as

Options :

1. A differentiated mass of cells
2. An undifferentiated mass of cells
3. Shoot cultures
4. Organized cultures

Question Number : 162 Question Id : 6780943964 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Media most widely used for plant tissue culture

Options :

1. LB media
2. Nutrient agar
3. MS media
4. YEB media

Question Number : 163 Question Id : 6780943965 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is not an application of plant tissue culture?

Options :

1. Micropropagation
2. Haploid production
3. Protoplast fusion

4. Wide hybridization in field

Question Number : 164 Question Id : 6780943966 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The enzyme combination used for protoplast isolation is

Options :

1. Cellulase, Pectinase, Hemicellulase

2. Protease, lipase, xylanase

3. Ligase, endonucleases

4. Polymerases, proteases

Question Number : 165 Question Id : 6780943967 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Major component of plant cell wall is

Options :

1. Peptidoglycan

2. Chitin

3. Cellulose

4. Phospholipids

Question Number : 166 Question Id : 6780943968 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which part of the Ti plasmid gets transferred to plant during Transformation

Options :

1. T-DNA

2. Virulence genes

3. Origin of replication

4. Overdrive

Question Number : 167 Question Id : 6780943969 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is not a direct gene transfer technique?

Options :

1. Microinjection

2. PEG mediated transformation

3. Gene gun

4. *Agrobacterium* mediated transformation

Question Number : 168 Question Id : 6780943970 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following gene is not a part of nitrogen fixation?

Options :

1. Nod gene

2. Nif gene

3. Hup gene

4. Rol gene

Question Number : 169 Question Id : 6780943971 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following plant does not have an association with *Rhizobium*

Options :

1. Lentil

2. Peas

3. Alfalfa

4. Pumpkin

Question Number : 170 Question Id : 6780943972 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not applied for sustained crop protection by preventing losses due to pests and diseases?

Options :

1. Insecticide act

2. Integrated pest management

3. Plant quarantine

4. DNA banking

Question Number : 171 Question Id : 6780943973 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Primary cell cultures are composed of cells taken directly from

Options :

1. Cells from dead animals

2. Cells taken directly from living animals

3. Stem cells

4. Tissues from accident sites

Question Number : 172 Question Id : 6780943974 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Enzymes required for establishment of primary cell lines are

Options :

1. Trypsin, Collagenases

2. Pectinase, cellulose

3. Xylanase

4. Lipase

Question Number : 173 Question Id : 6780943975 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is not related to purification of pharmaceutical products from cell cultures

Options :

1. The purity must fulfil the specifications

2. Structure and activity should be stable

3. Product should be free from viruses

4. Modifications

Question Number : 174 Question Id : 6780943976 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The parameters maintained in CO_2 incubator used in animal cell culture laboratory are

Options :

1. 5%$C0_2$, 37^{0}C, 100% humidity

2. 100%$C0_2$, 37^{0}C, 5% humidity

3. 0%$C0_2$, 37^{0}C, 5% humidity

4. 0%$C0_2$, 37^{0}C, 100% humidity

Question Number : 175 Question Id : 6780943977 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Advantage of using animal cells rather than microbial cells for the production of recombinant proteins is

Options :

1. Post transcriptional modification

2. DNA replication

3. Transcription

4. Post translational modification

Question Number : 176 Question Id : 6780943978 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following is used as a cryoprotectant

Options :

1. Dimethyl sulphoxide

2. Sodium dodecyl sulphate

3. Ethylene diamine tetra acetic acid

4. Serum

Question Number : 177 Question Id : 6780943979 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is not an application of organ culture?

Options :

1. Study of pattern of growth

2. Bioassays for action of drugs and carcinogenic agents

3. Production of tissues for implantations

4. Production of phytochemicals

Question Number : 178 Question Id : 6780943980 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In microinjection transgenic animals can be produced by transfer of

Options :

1. DNA into somatic cell

2. DNA into pronucleus of reproductive cell

3. RNA into somatic cell

4. RNA into pronucleus of reproductive cell

Question Number : 179 Question Id : 6780943981 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is used for maintaining the pH of the media of mammalian cell culture

Options :

1. Phenol red

2. Neutral red

3. Trypan blue

4. Bromophenol blue

Question Number : 180 Question Id : 6780943982 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The technique not used for organ culture is

Options :

1. Plasma clot

2. Raft methods

3. Grid method

4. Electroporation

Question Number : 181 Question Id : 6780943983 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is a DNA sequence database?

Options :

1. Genbank
2. PIR
3. Swiss prot
4. TREMBL

Question Number : 182 Question Id : 6780943984 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is a protein sequence database?

Options :

1. EMBL
2. GenBank
3. DDBJ
4. Swiss prot

Question Number : 183 Question Id : 6780943985 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is not an application of bioinformatics in Biotechnology?

Options :

1. Sequences and structure of genes and proteins
2. 3D molecular structure
3. Genome structure and functions.
4. Antisense technology

Question Number : 184 Question Id : 6780943986 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following BLAST search programme deals with amino acid sequences?

Options :

1. BLASTN

2. BLASTX

3. TBLASTN

4. BLASTP

Question Number : 185 Question Id : 6780943987 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which statement is not correct about proteomics?

Options :

1. Analyses all the proteins in a cell with then individual functions

2. Interaction of specific proteins with other cellular components

3. Study of genome

4. Protein interactions

Question Number : 186 Question Id : 6780943988 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

NCBI is

Options :

1. National Center for Biotechnology Information

2. National Center for Biological Information

3. National Center for Bioinformatics Information

4. National Center for Biochemical Information

Question Number : 187 Question Id : 6780943989 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The field of study involving the sequencing of the genomes of organisms is

Options :

1. Proteomics

2. Genomics

3. Bioinformatics

4. Molecular genetics

Question Number : 188 Question Id : 6780943990 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Orthologues mean

Options :

1. They are related by descent from a common ancestor. Orthologous genes normally have the same cellular function.

2. They are related by descent from a common ancestor. Orthologous genes normally have the different cellular function.

3. They are related by descent from a different ancestor. Orthologous genes normally have the different cellular function.

4. They are related by descent from a different ancestor. Orthologous genes normally have the same cellular function.

Question Number : 189 Question Id : 6780943991 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Phylogenetic analysis deals with

Options :

1. Finding out repetitive DNA

2. Finding out evolutionary relationship among Biomolecules (DNA, Proteins)

3. Sorting out structural and non-structural genes

4. Finding out promoter regions

Question Number : 190 Question Id : 6780943992 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is not a application of proteonomics technology?

Options :

1. Protein expression mapping

2. Annotation of the genome.

3. protein complex identification

4. sequence and structure of genes

Question Number : 191 Question Id : 6780943993 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following statement is correct about Coenzyme ?

Options :

1. Protein component of enzyme

2. Non protein component that bind with an enzyme to catalyze a reaction

3. Apoenzyme by non covalent bond

4. Can function alone

Question Number : 192 Question Id : 6780943994 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is not a type of enzyme specificity?

Options :

1. Absolute

2. Group

3. Linkage

4. Single

Question Number : 193 Question Id : 6780943995 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which does not affect enzyme activity ?

Options :

1. Environment conditions

2. Relative humidity

3. Cofactors and coenzymes

4. Enzyme inhibitors

Question Number : 194 Question Id : 6780943996 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Each enzyme has classification number consisting of

Options :

1. Four digits

2. Three digits

3. Two digits

4. One digit

Question Number : 195 Question Id : 6780943997 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Tenderization of meat can be done using pectolytic enzymes such as

Options :

1. Amylase

2. Lipolase

3. Papain

4. Esperase

Question Number : 196 Question Id : 6780943998 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In confectionary industry which enzyme is used for inversion of sucrose to a mixture of glucose and fructose

Options :

1. Carboxylase

2. Invertase

3. Celluzyme

4. Alcalase

Question Number : 197 Question Id : 6780943999 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is not applied for enzyme immobilization?

Options :

1. Lyophilization

2. Covalent bonding

3. Entrapment

4. Cross linking

Question Number : 198 Question Id : 6780944000 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The two main types of secondary structure of proteins are

Options :

1. Amino acid sequence
2. α-helix and the ß-sheet
3. Aggregate protein complex
4. 3-D structure

Question Number : 199 Question Id : 6780944001 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is not a property of enzymes?

Options :

1. Enzymes are proteins that increase the rate of reaction by lowering energy of activation
2. They catalyse nearly all the chemical reactions occurring in the body
3. Not altered or consumed during reaction
4. Non reusable

Question Number : 200 Question Id : 6780944002 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which is incorrect about the active site of an enzyme ?

Options :

1. The area where substrate attaches to
2. It is a small region of enzyme
3. It is a large region of enzyme
4. It is a special pocket on cleft