

# Question Paper Preview

<b>Question Paper Name :</b>	Agricultural Engineering 14th Sep 2020 Shift1
<b>Subject Name :</b>	Agricultural Engineering
<b>Duration :</b>	180
<b>Total Marks :</b>	200
<b>Display Marks:</b>	No
<b>Share Answer Key With Delivery Engine :</b>	Yes
<b>Actual Answer Key :</b>	Yes
<b>Is this Group for Examiner? :</b>	No

## Mathematics

<b>Section Number :</b>	1
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	50
<b>Number of Questions to be attempted :</b>	50
<b>Section Marks :</b>	50
<b>Display Number Panel :</b>	Yes
<b>Group All Questions :</b>	Yes
<b>Mark As Answered Required? :</b>	Yes

**Question Number : 1 Question Id : 61097512425 Question Type : MCQ Display Question  
Number : Yes Is Question Mandatory : No Single Line Question Option : No Option  
Orientation : Vertical**

If  $\begin{vmatrix} 15-x & 11 & 10 \\ 11-3x & 17 & 16 \\ 7-x & 14 & 13 \end{vmatrix} = 0$  then the value of  $x$  is

**Options :**

1. 6
2. 5
3. 7
4. -6

**Question Number : 2 Question Id : 61097512426 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The co-factors of the elements 2,-5 in the matrix  $\begin{pmatrix} -1 & 0 & 5 \\ 1 & 2 & -2 \\ -4 & -5 & 3 \end{pmatrix}$  is

**Options :**

1. 16,3
2. 17,-3
3. 17,3
4. -17,-3

**Question Number : 3 Question Id : 61097512427 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The solution of the following simultaneous linear equations by using Cramer's rule  $3x+4y+5z=18$ ;

$2x-y+8z=13$ ;  $5x-2y+7z=20$  is

**Options :**

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

**Question Number : 4 Question Id : 61097512428 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $A = \begin{pmatrix} 0 & 4 & -2 \\ -4 & 0 & 8 \\ 2 & -8 & x \end{pmatrix}$  is a skew symmetric matrix then the value of  $x$  is

**Options :**

1. 1
2. -8
3. -4
4. 0

**Question Number : 5 Question Id : 61097512429 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

**Options :**

1.  $\begin{pmatrix} 0 & 4 & -2 \\ 4 & -2 & 8 \\ 2 & -8 & 0 \end{pmatrix}$

2.  $\begin{pmatrix} 7 & -3 & -3 \\ -1 & 1 & 0 \\ -1 & 0 & 1 \end{pmatrix}$

3.  $\begin{pmatrix} 7 & 3 & 3 \\ 1 & 1 & 0 \\ 1 & 0 & 1 \end{pmatrix}$

4.  $\begin{pmatrix} 5 & 4 & 2 \\ 4 & 2 & 8 \\ 2 & -8 & 0 \end{pmatrix}$

**Question Number : 6 Question Id : 61097512430 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Resolve the rational function  $\frac{5x+1}{(x+2)(x-1)}$  into partial fractions

**Options :**

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

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

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

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

**Question Number : 7 Question Id : 61097512431 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Resolve the rational function  $\frac{x^2}{(x^2+1)^2}$  into partial fractions

**Options :**

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

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

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

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

**Question Number : 8 Question Id : 61097512432 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Suppose that  $A, B, C$  are positive and  $A + B + C = 90^\circ$  then the value of  $\sum \tan A \tan B$  is

**Options :**

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

**Question Number : 9 Question Id : 61097512433 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The value of  $\cos 100^\circ \cos 40^\circ + \sin 100^\circ \sin 40^\circ$  is

**Options :**

1.  $\frac{1}{2}$
2.  $-\frac{1}{2}$
3.  $\frac{1}{4}$
4.  $\frac{1}{8}$

**Question Number : 10 Question Id : 61097512434 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If  $\frac{\cos\alpha}{a} = \frac{\sin\alpha}{b}$  then the value of  $a\cos 2\alpha + b\sin 2\alpha$  is

**Options :**

1.  $-a$

2.  $b$

3.  $a$

4.  $-a$

**Question Number : 11 Question Id : 61097512435 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If  $x + \frac{1}{x} = 2\cos\theta$  then the value of  $x^3 + \frac{1}{x^3}$  is

**Options :**

1.  $2\cos 3\theta$

2.  $2\cos 2\theta$

3.  $3\cos 3\theta$

4.  $2\sin 3\theta$

**Question Number : 12 Question Id : 61097512436 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If  $\sin x + \sin y = \frac{1}{4}$  and  $\cos x + \cos y = \frac{1}{3}$  then the value of  $\tan\left(\frac{x+y}{2}\right)$  is

**Options :**

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

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

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

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

**Question Number : 13 Question Id : 61097512437 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The general solution for  $\sqrt{3}\cos\theta = \sin\theta$  is

**Options :**

1.  $-n\pi + \frac{\pi}{3}$

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

3.  $n\pi - \frac{\pi}{3}$

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



**Question Number : 14 Question Id : 61097512438 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The common solution for  $\cos\theta = -\frac{1}{\sqrt{2}}$ ,  $\tan\theta = -1$  is

**Options :**

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

2.  $2n\pi + \frac{5\pi}{3}$

3.  $5n\pi + \frac{\pi}{3}$

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

**Question Number : 15 Question Id : 61097512439 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $x$  is an acute angle and  $\sin(x + 10^\circ) = \cos(3x - 68^\circ)$  then the value of  $x$  is

**Options :**

1.  $-37^\circ$

2.  $37^\circ$

3.  $38^\circ$

4.  $10^\circ$

**Question Number : 16 Question Id : 61097512440 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

**Options :**

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

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

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

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

**Question Number : 17 Question Id : 61097512441 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The value of  $\cos \left[ \sin^{-1} \left( \frac{1}{2} \right) + \cos^{-1} \left( -\frac{\sqrt{3}}{2} \right) \right]$  is

**Options :**

1. 0

2. 1

3. 3

4. <sup>-1</sup>

**Question Number : 18 Question Id : 61097512442 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The modulus of the complex number  $(-1 - \sqrt{3}i)$  is

**Options :**

1. 1

2. 6

3. 2

4. 4

**Question Number : 19 Question Id : 61097512443 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The value of  $\left(\frac{\sqrt{3}}{2} + \frac{i}{2}\right)^5 - \left(\frac{\sqrt{3}}{2} - \frac{i}{2}\right)^5$  is

**Options :**

1.  $i$

2.  $-i$

3.  $2i$

4.  $-3i$

**Question Number : 20 Question Id : 61097512444 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The radius of the circle of the equation  $x^2 + y^2 - 4x - 8y - 41 = 0$  is

**Options :**

1.  $\sqrt{31}$

2.  $\sqrt{41}$

3.  $\sqrt{71}$

4.  $\sqrt{61}$

**Question Number : 21 Question Id : 61097512445 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If the line  $2y = 5 + k$  is a tangent to the parabola  $y^2 = 6x$  then the value of  $k$  is

**Options :**

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

2.

$\frac{3}{5}$

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

4.  $\frac{7}{5}$

**Question Number : 22 Question Id : 61097512446 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The length of latus rectum of the ellipse  $9x^2 + 16y^2 = 144$  is

**Options :**

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

2.  $\frac{9}{2}$

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

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

**Question Number : 23 Question Id : 61097512447 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The centre of the hyperbola  $4x^2 - 5y^2 - 16x + 10y + 31 = 0$  is

**Options :**

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

**Question Number : 24 Question Id : 61097512448 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The angle between two tangents drawn from the point (1,4) to the parabola  $y^2 = 12x$  is

**Options :**

1.  $\tan^{-1}(2)$
2.  $\tan^{-1}(3)$
3.  $\tan^{-1}(5)$
4.  $\tan^{-1}\left(\frac{1}{2}\right)$

**Question Number : 25 Question Id : 61097512449 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The length of the tangent from (1,3) to the circle  $x^2 + y^2 - 2x + 4y - 11 = 0$  is

**Options :**

1.  $-3$

2.  $3$

3.  $5$

4.  $4$

**Question Number : 26 Question Id : 61097512450 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The value of  $\lim_{x \rightarrow 0} \left( \frac{\sqrt{1+x}-1}{x} \right)$  is

**Options :**

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

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

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

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

**Question Number : 27 Question Id : 61097512451 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The derivative of  $f(x) = \frac{a-x}{a+x}$  ( $x \neq -a$ ) is

**Options :**

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

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

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

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

**Question Number : 28 Question Id : 61097512452 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If  $x = a \left[ \cos t + \log \left( \tan \frac{t}{2} \right) \right]$ ,  $y = a \sin t$  then  $\frac{dy}{dx}$  is

**Options :**

1.  $-\tan t$

2.  $\tan t$

3.  $\tan t + \sin t$

4.  $\sin t$



**Question Number : 29 Question Id : 61097512453 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If an error of 3% occurs in measuring the side of a cube then the percentage error in its volume is

**Options :**

1.  $-9$

2.  $7$

3.  $8$

4.  $9$

**Question Number : 30 Question Id : 61097512454 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The slope of the tangent to the curve  $y = 5x^2$  at the point  $x = -1$  is

**Options :**

1.  $10$

2.  $7$

3.  $-10$

4.  $-9$

**Question Number : 31 Question Id : 61097512455 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The angle between the curves  $xy = 2$  and  $x^2 + 4y = 0$  is

**Options :**

1.  $-\tan^{-1}(3)$

2.  $\tan^{-1}(3)$

3.  $\sin^{-1}(3)$

4.  $\cos^{-1}(3)$

**Question Number : 32 Question Id : 61097512456 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

For all values of  $a$  and  $b$ ,  $f(x) = x^3 + 3ax^2 + 3a^2x + 3a^3 + b$  is

**Options :**

1. Increasing only

2. Decreasing only

3. Increasing and Decreasing

4. maximum

**Question Number : 33 Question Id : 61097512457 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The minimum value of  $f(x) = 4x^2 - 4x + 11$  for any  $x$  in  $R$  is

**Options :**

1.  $-10$  at  $x = \frac{1}{2}$

2.  $10$  at  $x = -\frac{1}{2}$

3.  $8$  at  $x = \frac{1}{2}$

4.  $10$  at  $x = \frac{1}{2}$

**Question Number : 34 Question Id : 61097512458 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

If  $z = \log(\tan x + \tan y)$  then  $(\sin 2x) \frac{\partial z}{\partial x} + (\sin 2y) \frac{\partial z}{\partial y}$  is

**Options :**

1.  $2$

2.  $-2$

3.  $4$

4. 6

**Question Number : 35 Question Id : 61097512459 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $u = \tan^{-1}\left(\frac{x^2+y^2}{x+y}\right)$  then  $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y}$  is

**Options :**

1.  $-\frac{1}{2}\sin 2u$

2.  $-\frac{1}{2}\cos 2u$

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

4.  $\frac{1}{2}\tan 2u$

**Question Number : 36 Question Id : 61097512460 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The value of  $\int \sin^2 x \, dx$  on  $R$  is

**Options :**

1.  $\frac{x}{2} + \frac{\sin 2x}{4} + c$

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

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

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

**Question Number : 37 Question Id : 61097512461 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The value of  $\int x\sqrt{x} dx$  on  $(0, \infty)$  is

**Options :**

1.  $\frac{2}{5}x^{5/2} + c$

2.  $-\frac{2}{5}x^{5/2} + c$

3.  $\frac{2}{5}x^{-5/2} + c$

4.  $\frac{2}{3}x^{3/2} + c$

**Question Number : 38 Question Id : 61097512462 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The value of  $\int_0^2 \sqrt{4-x^2} dx$  is

**Options :**

1.

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

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

3.  $\pi$

4.  $-\pi$

**Question Number : 39 Question Id : 61097512463 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The value of  $\int_{\pi/6}^{\pi/3} \frac{\sqrt{\sin x}}{\sqrt{\sin x} + \sqrt{\cos x}} dx$  is

**Options :**

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

2.  $\frac{\pi}{12}$

3.  $-\frac{\pi}{12}$

4.  $\pi$

**Question Number : 40 Question Id : 61097512464 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The area enclosed by the curves  $y = 3x$  and  $y = 6x - x^2$  in square units is

**Options :**

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

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

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

4.  $\frac{9}{2}$

**Question Number : 41 Question Id : 61097512465 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The value of  $\int \frac{e^x(1+x)}{(2+x)^2} dx$  on  $I \in R \setminus \{-2\}$  is

**Options :**

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

2.  $-\frac{e^x}{2+x} + C$

3.  $\frac{e^x}{2-x} + C$

4.  $\frac{e^{3x}}{2+x} + C$

**Question Number : 42 Question Id : 61097512466 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The value of  $\int \frac{1}{1+4x^2} dx$  on  $\mathbb{R}$  is

**Options :**

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

2.  $\frac{1}{2}\tan^{-1}(5x) + c$

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

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

**Question Number : 43 Question Id : 61097512467 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The value of  $\int \frac{2x^2-5x+1}{x^2(x^2-1)} dx$  is

**Options :**

1.  $\frac{1}{x} + \log \left| \frac{x^5}{(x^2-1)(x+1)^3} \right| + C$

2.  $\frac{1}{x} - \log \left| \frac{x^5}{(x^2-1)(x+1)^3} \right| + C$



3.  $\frac{1}{x} + \log \left| \frac{x^5}{(x^2+1)(x+1)^3} \right| + C$

4.  $\frac{1}{x} - \log \left| \frac{x^5}{(x^2+1)(x+1)^3} \right| + C$

**Question Number : 44 Question Id : 61097512468 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

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

**Options :**

1.  $(x + 2y)^2 + 2x = c$

2.  $(x - 2y)^2 - 2x = c$

3.  $(x - 2y)^2 + 2x = c$

4.  $(x - 4y)^2 + 2x = c$

**Question Number : 45 Question Id : 61097512469 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The solution of the homogeneous differential equation  $xy^2 dy - (x^3 + y^3) dx = 0$  is

**Options :**

1.  $y^3 = -3x^3 \log(xc)$

2.  $y^3 = 3x^3 \log(x/c)$

3.  $y^3 = 3x^3 \log(x^2c)$

4.  $y^3 = 3x^3 \log(xc)$

**Question Number : 46 Question Id : 61097512470 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The solution of the linear differential equation  $\frac{dy}{dx} + y \cot x = \cos x$  is

**Options :**

1.  $y - \sin x = -\frac{\cos 2x}{4} + c$

2.  $y/\sin x = -\frac{\cos 2x}{4} + c$

3.  $y \sin x = -\frac{\cos 2x}{4} + c$

4.  $y \sin x = \frac{\cos 2x}{4} + c$

**Question Number : 47 Question Id : 61097512471 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The solution of Bernoulli's equation  $x^3 \frac{dy}{dx} - x^2 y = -y^4 \cos x$  is

**Options :**

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

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

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

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

**Question Number : 48 Question Id : 61097512472 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The particular integral for the differential equation  $(D^2 + 3D + 2)y = 12x^2$  is

**Options :**

1.  $6x^2 + 18x - 21$

2.  $6x^2 - 18x + 21$

3.  $-6x^2 + 18x - 21$

4.  $6x^2 + 18x + 21$

**Question Number : 49 Question Id : 61097512473 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The particular integral for the differential equation  $6\frac{d^2y}{dx^2} + 17\frac{dy}{dx} + 12y = e^{-x}$  is

**Options :**

1.  $-e^{-x}$

2.  $e^x$

3.  $e^{-2x}$

4.  $e^{-x}$

**Question Number : 50 Question Id : 61097512474 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The particular integral for the differential equation  $(D^2 - 4D + 13)y = \cos 2x$  is

**Options :**

1.  $\frac{1}{145}(9 \cos 2x - 8 \sin 2x)$

2.  $\frac{1}{145}(9 \cos 2x + 8 \sin 2x)$

3.  $\frac{1}{145}(-9 \cos 2x - 8 \sin 2x)$

4.  $\frac{1}{135}(9 \cos 2x - 8 \sin 2x)$

## Physics

<b>Section Number :</b>	2
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	25
<b>Number of Questions to be attempted :</b>	25
<b>Section Marks :</b>	25
<b>Display Number Panel :</b>	Yes
<b>Group All Questions :</b>	Yes
<b>Mark As Answered Required? :</b>	Yes

**Question Number : 51 Question Id : 61097512475 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Young's modulus of steel is  $2 \times 10^{11} \text{ N/m}^2$ . Its value in  $\text{dyne/cm}^2$  is

**Options :**

1.  $2 \times 10^{12}$

2.  $2 \times 10^{10}$

3.  $2 \times 10^8$

4.  $2 \times 10^{-11}$

**Question Number : 52 Question Id : 61097512476 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Dimension of velocity gradient is

**Options :**

1.  $[M^0L^0T^{-1}]$

2.  $[ML^{-1}T^{-1}]$

3.  $[M^0LT^{-1}]$

4.  $[ML^0T^{-1}]$

**Question Number : 53 Question Id : 61097512477 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Unit vector parallel to the resultant of vectors  $A = 4\hat{i} - 3\hat{j}$  and  $B = 8\hat{i} + 8\hat{j}$  will be

**Options :**

1.  $\frac{24\hat{i}+5\hat{j}}{13}$

2.  $\frac{12\hat{i}+5\hat{j}}{13}$

$$\frac{6i+5j}{13}$$

3.

$$\frac{12i-5j}{13}$$

4.

**Question Number : 54 Question Id : 61097512478 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The resultant of two forces  $3P$  and  $2P$  is  $R$ . If the first force is doubled, then the resultant is also doubled. The angle between the two forces is

**Options :**

1.  $60^\circ$

2.  $120^\circ$

3.  $30^\circ$

4.  $135^\circ$

**Question Number : 55 Question Id : 61097512479 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A particle is projected vertically upward with a speed of  $40 \text{ m/s}$ , then the velocity of the particle 2 seconds before it reaches the maximum height is (Take  $g = 10 \text{ m/s}^2$ )

**Options :**

1.

20 m/s<sup>2</sup>

2. 4.2 m/s<sup>2</sup>

3. 9.8 m/s<sup>2</sup>

4. 10 m/s<sup>2</sup>

**Question Number : 56 Question Id : 61097512480 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

A car moving with constant acceleration covered the distance between two points 60 m apart in 6 s. Its speed as it passes the second point was 15 m/s. The acceleration is

**Options :**

1.  $\frac{1}{3} \text{ ms}^{-2}$

2.  $\frac{2}{3} \text{ ms}^{-2}$

3.  $\frac{3}{5} \text{ ms}^{-2}$

4.  $\frac{5}{3} \text{ ms}^{-2}$

**Question Number : 57 Question Id : 61097512481 Question Type : MCQ Display Question**



**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

A stone is thrown vertically upwards. When stone is at half of its maximum height, its speed is  $10 \text{ ms}^{-1}$ ; then the maximum height attained by the stone is ( $g=10\text{m/s}^2$ )

**Options :**

1. 25m

2. 10m

3. 15m

4. 20m

**Question Number : 58 Question Id : 61097512482 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Identify the correct statement.

**Options :**

1. Static friction depends on the area of contact.

2. Kinetic friction depends on the area of contact.

3. Coefficient of static friction does not depend on the area of the surface in contact.

4. Coefficient of kinetic friction is less than the coefficient of static friction.

**Question Number : 59 Question Id : 61097512483 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The coefficient of friction between the tyres and the road is 0.25. The maximum speed with which a car can be driven round a curve of radius 40 m without skidding is (assume  $g=10\text{m/s}^2$ )

**Options :**

1.  $40 \text{ ms}^{-1}$

2.  $20 \text{ ms}^{-1}$

3.  $15 \text{ ms}^{-1}$

4.  $10 \text{ ms}^{-1}$

**Question Number : 60 Question Id : 61097512484 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

During a projectile motion, if the maximum height is equal to the horizontal range, then the angle of projection with the horizontal is

**Options :**

1.  $\tan^{-1}(1)$

2.  $\tan^{-1}(2)$

3.  $\tan^{-1}(4)$

4.  $\tan^{-1}(3)$

**Question Number : 61 Question Id : 61097512485 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The potential energy of a certain spring when stretched through a distance S is 10 joule. The amount of work (in joule) that must be done on this spring to stretch it through additional distance S will be

**Options :**

1. 30

2. 40

3. 10

4. 20

**Question Number : 62 Question Id : 61097512486 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A machine gun fires six bullets per second into a target. The mass of each bullet is 3 g and the speed is 500 m/s. The power delivered to the bullets is

**Options :**

1. 1.5 kW

2. 2.25 kW

3. 0.75 kW

4. 375 kW

**Question Number : 63 Question Id : 61097512487 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is the cheapest renewable energy ?

**Options :**

1. Solar energy

2. Wind energy

3. Hydel energy

4. Nuclear energy

**Question Number : 64 Question Id : 61097512488 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The maximum velocity of particle executing simple harmonic motion with an amplitude of 7 mm is 4.4 m/s. The time period of oscillation is

**Options :**

1. 100 s

2. 10 s

3. 0.1 s

4. 0.01 s

**Question Number : 65 Question Id : 61097512489 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Two waves of lengths 50 cm and 51 cm produced 12 beats per second. The velocity of sound is

**Options :**

1. 340 m/s

2. 331 m/s

3. 306 m/s

4. 360 m/s

**Question Number : 66 Question Id : 61097512490 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The apparent frequency of the whistle of an engine changes in the ratio 9:8 as the engine passes a stationary observer. If the velocity of the sound is  $340 \text{ ms}^{-1}$ , then the velocity of the engine is

**Options :**

1. 40 m/s

2. 20 m/s

3. 340 m/s

4. 180 m/s

**Question Number : 67 Question Id : 61097512491 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Quality of sound is decided by

**Options :**

1. loudness

2. intensity

3. number of overtones

4. frequency

**Question Number : 68 Question Id : 61097512492 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Inaudibility limit is

**Options :**

1. one hundredth of initial intensity

2. one tenth of initial intensity
3. one thousandth of initial intensity
4. one millionth of initial intensity

**Question Number : 69 Question Id : 61097512493 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A Carnot's engine operates with source at  $127^{\circ}\text{C}$  and sink at  $27^{\circ}\text{C}$ . If the source supplies 40 kJ of heat energy, the work done by the engine is

**Options :**

1. 30 kJ
2. 10 kJ
3. 4 kJ
4. 1 kJ

**Question Number : 70 Question Id : 61097512494 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A monoatomic gas initially at  $17^{\circ}\text{C}$  is suddenly compressed to one eighth of its original volume. The temperature after compression is

**Options :**

1. 1160K
2. 36.25K
3. 2320K
4. 887K

**Question Number : 71 Question Id : 61097512495 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Two cylinders of volumes 20 cc and 30 cc have gases at pressures 40 cm and 50 cm of Hg under the same temperature. If they are connected by a very narrow pipe the pressure in cm of Hg will be

**Options :**

1. 45
2. 50
3. 46
4. 15

**Question Number : 72 Question Id : 61097512496 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**



In an adiabatic expansion, a gas does 25J of work while in an adiabatic compression 100J of work is done on a gas. The change of internal energy in the two processes respectively are

**Options :**

1. 25J and -100J
2. - 25J and 100J
3. -25J and -100J
4. 25J and 100J

**Question Number : 73 Question Id : 61097512497 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The volume of one mole of an ideal gas changes from V to 2V at temperature of 300 K. If R is universal gas constant, then work done in this process is

**Options :**

1.  $300R\ln 2$
2.  $600R\ln 2$
3.  $300\ln 2$
4.  $600\ln 2$

**Question Number : 74 Question Id : 61097512498 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

The maximum kinetic energy of the photoelectrons emitted from a surface is dependent on the

**Options :**

1. intensity of incident radiation
2. potential of the collector electrode
3. frequency of incident radiation
4. angle of incident of radiation of the surface

**Question Number : 75 Question Id : 61097512499 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

In an optical fibre, relation between refractive index of core ( $n_1$ ) and refractive index of cladding ( $n_2$ ) is

**Options :**

1.  $n_1 > n_2$
2.  $n_1 < n_2$
3.  $n_1 = n_2$
4.  $n_1 \ll n_2$

<b>Section Number :</b>	3
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	25
<b>Number of Questions to be attempted :</b>	25
<b>Section Marks :</b>	25
<b>Display Number Panel :</b>	Yes
<b>Group All Questions :</b>	Yes
<b>Mark As Answered Required? :</b>	Yes

**Question Number : 76 Question Id : 61097512500 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The nucleus consists of

**Options :**

1. Proton and electron
2. Proton and Neutron
3. Proton and Duterium
4. Proton and photan

**Question Number : 77 Question Id : 61097512501 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The shape of P-Orbital is

**Options :**

1. Spherical

2. Dumbbell
3. Double Dumbbell
4. Oval

**Question Number : 78 Question Id : 61097512502 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The maximum number of electrons that a f-orbital can accommodate is

**Options :**

1. 2
2. 6
3. 10
4. 14

**Question Number : 79 Question Id : 61097512503 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In NaCl formation Sodium is donating ----- electrons

**Options :**

1. 0

2. 2

3. 1

4. 3

**Question Number : 80 Question Id : 61097512504 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

O<sub>2</sub> molecule contains

**Options :**

1. Covalent bond

2. Ionic bond

3. Hydrogen bond

4. Metallic bond

**Question Number : 81 Question Id : 61097512505 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Avagadro Number is

**Options :**

1.  $6.023 \times 10^{-23}$

2.  $6.023 \times 10^{23}$

3.  $60.23 \times 10^{23}$

4.  $6.023 \times 10^{25}$

**Question Number : 82 Question Id : 61097512506 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The normality of the solution obtained by dissolving 8 gm of NaOH in 1 Litre is

**Options :**

1. 2N

2. 0.2N

3. 0.25N

4. 0.02N

**Question Number : 83 Question Id : 61097512507 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Molecular weight of  $\text{MgSO}_4$  is

**Options :**

1. 120

2. 121

3. 119

4. 122

**Question Number : 84 Question Id : 61097512508 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A Lewis base is a substance which

**Options :**

1. Accept protons
2. Accept a lone pair of electrons
3. Donate protons
4. Donate a lone pair of electrons

**Question Number : 85 Question Id : 61097512509 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

$P^H$  of a solution is 4.5, the solution is

**Options :**

1. Basic
2. Acidic

3. Neutral

4. Amphoteric

**Question Number : 86 Question Id : 61097512510 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

One Faraday is equal to

**Options :**

1. 96485 C

2. 98485 C

3. 96465 C

4. 96585 C

**Question Number : 87 Question Id : 61097512511 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Common electrolyte used in the salt bridge is

**Options :**

1. NaOH

2. NaCl



3. KCl

4. KOH

**Question Number : 88 Question Id : 61097512512 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

SI Units of Electrical conductivity are

**Options :**

1. Seimens per meter

2. Seimens per centimeter

3. Seimens per millimeter

4. Seimens per kilometer

**Question Number : 89 Question Id : 61097512513 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Calculate the standard e.m.f of the Zn-Cu cell, if the cell is represented as  $Zn, Zn^{+2}; Cu^+, Cu$  ( $E^0_{Zn^{+2}, Zn} = 0.86$  and  $(E^0_{Cu^{+2}, Cu} = 0.34$ ).

**Options :**

1. 1.20V

2. 0.52V

3. -1.20V

4. -0.11V

**Question Number : 90 Question Id : 61097512514 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Permanent Hardness is caused due to

**Options :**

1. Carbonates and Bicarbonates

2. Carbonates and Sulphates

3. Chlorides and Sulphates

4. Chlorides and Carbonates

**Question Number : 91 Question Id : 61097512515 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Permutit is chemically

**Options :**

1. Sodium Silicate

2. Aluminium Silicate

3. Hydrated Sodium alumino silicate

4. Calcium silicate

**Question Number : 92 Question Id : 61097512516 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The anion exchange resin possesses

**Options :**

1. Acidic group

2. Basic group

3. Amphoteric group

4. Benzo group

**Question Number : 93 Question Id : 61097512517 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Chemically the rust is

**Options :**

1.  $\text{Fe}_2\text{O}_3$

2.  $\text{Fe}_2\text{O}_3 \cdot \text{FeO}$

3.  $\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$

4.  $\text{Fe}_2\text{O}_3 \cdot \text{NH}_3$

**Question Number : 94 Question Id : 61097512518 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The gradual loss of a metal by chemical or electrochemical action of environment is called

**Options :**

1. Corrosion

2. Caustic embrittlement

3. Priming

4. foaming

**Question Number : 95 Question Id : 61097512519 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is a thermosetting plastic ?

**Options :**

1. Bakelite

2. Polystyrene

3. Polythene

4. Nylon

**Question Number : 96 Question Id : 61097512520 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Tetra Fluoro Ethane is a monomer of

**Options :**

1. Teflon

2. Nylon

3. Styrene

4. Rubber

**Question Number : 97 Question Id : 61097512521 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Buna-N is a copolymer of

**Options :**

1. Butadiene and Styrene

2. Butadiene and Acrylonitrile

3. Butadiene and Isoprene

4. Formaldehyde and Styrene

**Question Number : 98 Question Id : 61097512522 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Main constituent of Producer gas is

**Options :**

1.  $\text{CO} + \text{N}_2$

2.  $\text{CO} + \text{H}_2$

3.  $\text{CO} + \text{CO}_2$

4.  $\text{CO}_2 + \text{H}_2$

**Question Number : 99 Question Id : 61097512523 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Ozone layer is present at

**Options :**

1. Stratosphere

2. Inosphere

3.

Thermosphere

4. Atmosphere

**Question Number : 100 Question Id : 61097512524 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Acid Rain is caused due to

**Options :**

1. Chloro Fluoro Carbons

2. Methane

3. Oxides of Sulphur and Nitrogen

4. Carbon monoxide

## **Agricultural Engineering**

<b>Section Number :</b>	4
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	100
<b>Number of Questions to be attempted :</b>	100
<b>Section Marks :</b>	100
<b>Display Number Panel :</b>	Yes
<b>Group All Questions :</b>	Yes

Mark As Answered Required? :

Yes

**Question Number : 101 Question Id : 61097512525 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Improved form of marking gauge which has two scribing pins is

**Options :**

1. Simple scribing block
2. Scriber
3. Scribing knife
4. Mortise gauge

**Question Number : 102 Question Id : 61097512526 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Hacksaw blade thickness is

**Options :**

1. 0.5 mm
2. 0.6 mm
3. 0.7 mm
4. 0.8 mm



**Question Number : 103 Question Id : 61097512527 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Example for permanent mould casting is

**Options :**

1. Investment
2. Gravity die
3. Shell
4. Sand

**Question Number : 104 Question Id : 61097512528 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Tool post of lathe is located on the top of

**Options :**

1. Tail piece
2. Saddle
3. Apron
4. Compound rest

**Question Number : 105 Question Id : 61097512529 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Following mechanism makes the carriage to engage or disengage with lead screw

**Options :**

1. feeding mechanism
2. Half-nut mechanism
3. Gear mechanism
4. Screw mechanism

**Question Number : 106 Question Id : 61097512530 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

To machine flat surfaces production, suitable milling operation is

**Options :**

1. Form milling
2. End milling
3. Plain milling
4. Profile milling

**Question Number : 107 Question Id : 61097512531 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Kinetic viscosity of liquid having 5 poise viscosity and 0.8 specific gravity is

**Options :**

1.  $6.25 \times 10^{-4}$  stokes
2.  $6.25 \times 10^{-2}$  stokes
3.  $6.25 \times 10^{-3}$  stokes
4.  $6.25 \times 10^{-4}$  m<sup>2</sup>/s

**Question Number : 108 Question Id : 61097512532 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Total pressure on an immersed liquid surface at an angle  $\theta$  with the liquid surface is

**Options :**

1.  $wA\bar{x}$
2.  $wA\bar{x}/\sin\theta$
3.  $wA\bar{x}/\cos\theta$
4.  $wA\bar{x}/\tan\theta$

**Question Number : 109 Question Id : 61097512533 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A flow whose streamline may be represented by a straight line flow is known as

**Options :**

1. Stream function
2. One-dimensional flow
3. Incompressible flow
4. Unsteady flow

**Question Number : 110 Question Id : 61097512534 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

The head of liquid causing discharge through drowned orifice under pressure between connecting vessels is

**Options :**

1. Difference of liquid levels
2. Difference of pressure heads
3. Difference of liquid levels + Difference of pressure heads
4. Difference of liquid levels - Difference of pressure heads

**Question Number : 111 Question Id : 61097512535 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A 3000 m<sup>3</sup> water tank having 1.5 m wide rectangular notch and the height of the water above the sill is 1 m. The value of  $C_{d1}$  is 0.61. The time needed to empty the tank is

**Options :**

1. 1111 s
2. 2222 s
3. 3333 s
4. 4444 s

**Question Number : 112 Question Id : 61097512536 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Wetted perimeter of trapezoidal channel of side slopes 1:1.5 with bottom width 1.5 m and

depth of flow 2.5 m is

**Options :**

1. 6.8 m
2. 6.0 m
3. 9.4 m
4. 10.5 m

**Question Number : 113 Question Id : 61097512537 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Refrigeration system works on which law of thermodynamics ?

**Options :**

1. Zeroth
2. First
3. Second
4. Third

**Question Number : 114 Question Id : 61097512538 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Solid fuel used for generation of thermal power is

**Options :**

1. Wood
2. Charcoal
3. Peat
4. Lignite

**Question Number : 115 Question Id : 61097512539 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Internal energy of a perfect gas is a function of

**Options :**

1. Volume
2. Pressure
3. Enthalpy
4. Temperature

**Question Number : 116 Question Id : 61097512540 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Compression ratio of diesel engine is

**Options :**

1. 14:1 to 22:1
2. 5:1 to 8:1
3. 10:1 to 19:1
4. 4:1 to 10:1

**Question Number : 117 Question Id : 61097512541 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Primary winding of ignition coil is made of copper wire of diameter

**Options :**

1. 0.8 mm

2. 0.6 mm
3. 1.0 mm
4. 0.9 mm

**Question Number : 118 Question Id : 61097512542 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which of the following is not used to measure the distance?

**Options :**

1. Tape
2. Pacing
3. Pedometer
4. Barometer

**Question Number : 119 Question Id : 61097512543 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Fore and back bearings of a line differ exactly by

**Options :**

1.  $60^\circ$



2.  $90^\circ$
3.  $180^\circ$
4.  $360^\circ$

**Question Number : 120 Question Id : 61097512544 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Instrument used in measuring distance is

**Options :**

1. Offset rods
2. Whites
3. Plumb bob
4. Chain

**Question Number : 121 Question Id : 61097512545 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Compass is based on the following method of traversing

**Options :**

1. By the chain angles
2. By the free or loose needle method

3. By the fast needle method

4. By rake angle

**Question Number : 122 Question Id : 61097512546 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In levelling, which denotes the shifting of the level?

**Options :**

1. Back sight

2. Fore sight

3. Change point

4. Bench Mark

**Question Number : 123 Question Id : 61097512547 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A curve followed by another curve having the centre in the opposite side is called as a

**Options :**

1. Reverse curve

2. Simple curve

3. Compound curve

4. Transition curve

**Question Number : 124 Question Id : 61097512548 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Method of interpolation adopted for greater accuracy in drawing of contour map is

**Options :**

1. Estimation

2. Graphical

3. Arthimatical calculation

4. Cross-sectional

**Question Number : 125 Question Id : 61097512549 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Turning of the telescope of the Theodolite in clock-wise direction about it's vertical axis in a horizontal plane is called

**Options :**

1. Left swing

2. Right swing

3. Plunging

4. Face change

**Question Number : 126 Question Id : 61097512550 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If main scale reading of theodolite is  $344^{\circ}-40'$  and vernier division is 16, the measured angle is

**Options :**

1.  $345^{\circ}-40'-20''$

2.  $344^{\circ}-40'-20''$

3.  $344^{\circ}-45'-20''$

4.  $345^{\circ}-45'-20''$

**Question Number : 127 Question Id : 61097512551 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If angles with theodolite are taken in direct and inverted position, then it is called as

**Options :**

1. Index error

2. Swinging

3. Double sighting

4. Centering

**Question Number : 128 Question Id : 61097512552 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Measure of the sharpness of the corners of the solid is

**Options :**

1. Circularity

2. Sphericity

3. Linearity

4. Roundness

**Question Number : 129 Question Id : 61097512553 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Time of retardation compared to time for total strain, in case of creep is about

**Options :**

1. 63%

2. 37%

3. 100%

4. 0%

**Question Number : 130 Question Id : 61097512554 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

For a free flowing bulk solid, the flow function (FF) value is

**Options :**

1.  $FF < 2$
2.  $4 > FF > 2$
3.  $10 > FF > 4$
4.  $FF > 10$

**Question Number : 131 Question Id : 61097512555 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Recommended speed of belt for carrying grain derivatives is

**Options :**

1. 3.5 m/s
2. 2.8 m/s
3. 2.5 m/s

4. 2.0 m/s

**Question Number : 132 Question Id : 61097512556 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Best drum screen cleaner is

**Options :**

1. Concentric
2. Series consecutive
3. Parallel consecutive
4. Eccentric

**Question Number : 133 Question Id : 61097512557 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Centre of gravity of an equilateral triangle with each side equal to 'a' cm is at which distance from any of three sides

**Options :**

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

3.  $\frac{a}{2\sqrt{3}}$

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

**Question Number : 134 Question Id : 61097512558 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If  $F_1$  and  $F_2$  are two forces acting at a point 'O' at an angle  $\alpha$  then the resultant is

**Options :**

1.  $R = \sqrt{(F_1^2 + F_2^2 + 2 F_1 F_2 \cos(90 - \alpha))}$

2.  $R = \sqrt{(F_1^2 + F_2^2 - 2 F_1 F_2 \cos(90 + \alpha))}$

3.  $R = \sqrt{(F_1^2 + F_2^2 - 2 F_1 F_2 \cos \alpha)}$

4.  $R = \sqrt{(F_1^2 + F_2^2 + 2 F_1 F_2 \cos \alpha)}$

**Question Number : 135 Question Id : 61097512559 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Load lifted/effort applied is called as

**Options :**

1. Velocity ratio



2. Mechanical advantage
3. Pitch
4. Effort

**Question Number : 136 Question Id : 61097512560 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A combination of kinematic pairs, joined in such a way that the relative motion between the links is completely constrained, is called as

**Options :**

1. Structure
2. Mechanism
3. Kinematic chain
4. Inversion

**Question Number : 137 Question Id : 61097512561 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Moment of inertia of a rectangle of width 'b' and depth d about the base AB is

**Options :**

1.  $I_{AB} = \frac{rdb^2}{32}$

2.  $I_{AB} = \frac{rd^2b}{64}$

3.  $I_{AB} = \frac{bd^3}{3}$

4.  $I_{AB} = \frac{bd^3}{12}$

**Question Number : 138 Question Id : 61097512562 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Separation of dry and wet grains is possible with

**Options :**

1. Inclined belt
2. Concentric drum
3. Indented disc
4. Pneumatic separator

**Question Number : 139 Question Id : 61097512563 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Fineness is represented by whole numbers of

**Options :**

1. 1-10
2. 1-13
3. 1-16
4. 1-20

**Question Number : 140 Question Id : 61097512564 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

If the material is passed only once through equipment, then the process of grinding is

**Options :**

1. Closed circuit
2. Open circuit
3. Free crushing
4. Choke feeding

**Question Number : 141 Question Id : 61097512565 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Filter aid increases

**Options :**

1. Resistance of cake
2. Porosity of cake
3. Density of cake
4. Temperature of cake

**Question Number : 142 Question Id : 61097512566 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Air velocity to keep the grains in suspension is

**Options :**

1. 15-30 m/s
2. 20-35 m/s
3. 30-40 m/s
4. 35-55 m/s

**Question Number : 143 Question Id : 61097512567 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In centrifugal dehusker, the rotational speed of impeller is

**Options :**

1. 2000-2500 rpm

2. 1500-2000 rpm
3. 2500-3000 rpm
4. 3000-3500 rpm

**Question Number : 144 Question Id : 61097512568 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

For conditioning the pulses by alternate wetting and drying after sun drying, moisture is added

to the pulses to the tune of

**Options :**

1. 3.5%
2. 4.5%
3. 5.5%
4. 6.5%

**Question Number : 145 Question Id : 61097512569 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In Jadavpur university method of parboiling, steaming time is about

**Options :**

1. 3.5 min
2. 5.5 min
3. 4.5 min
4. 1.5 min

**Question Number : 146 Question Id : 61097512570 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Differential speed of wheat mill is

**Options :**

1. 2:1
2. 3.5:1
3. 3:1
4. 2.5:1

**Question Number : 147 Question Id : 61097512571 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In hydraulic press ghani, the percent oil loss (left with cake) is

**Options :**

1. 3-6%

2. 7-8%
3. 8-10%
4. 10-12%

**Question Number : 148 Question Id : 61097512572 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Type of bunds formed at extreme ends of the contour bund is

**Options :**

1. Supplemental bunds
2. Side bunds
3. Shoulder bunds
4. Marginal bunds

**Question Number : 149 Question Id : 61097512573 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In modified USLE, the new factor introduced is

**Options :**

1. Rainfall factor
2. Soil factor

3. Slope factor
4. Runoff factor

**Question Number : 150 Question Id : 61097512574 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Order of erosion with respect to configuration

**Options :**

1. Convex > Concave > Complex
2. Convex > Complex > Concave
3. Concave > Complex > Convex
4. Concave > Convex > Complex

**Question Number : 151 Question Id : 61097512575 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Type of bed load sampler having high trap efficiency is

**Options :**

1. Basket
2. Tray



3. Pressure difference
4. All of these

**Question Number : 152 Question Id : 61097512576 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

For design of permanent structures, number of years of rainfall data is to be considered for the design is

**Options :**

1. 10-20
2. 20-30
3. 25-50
4. 30-60

**Question Number : 153 Question Id : 61097512577 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Vertical suction of a plough influences

**Options :**

1. Pulverization
2. Depth of cut
3. Width of cut

4. Direction of pull

**Question Number : 154 Question Id : 61097512578 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Back furrow is caused while ploughing is done

**Options :**

1. Centre to side
2. Side to centre
3. One way ploughing
4. Two way

**Question Number : 155 Question Id : 61097512579 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Devise used to cut the furrow slice vertically from a land ahead of the plough bottom is

**Options :**

1. Gunnel
2. Coulter
3. Jointer

4. Gauge wheel

**Question Number : 156 Question Id : 61097512580 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Method of ploughing in which plough works round a strip of unploughed land is

**Options :**

1. Gathering
2. Casting
3. Head land
4. Dead furrow

**Question Number : 157 Question Id : 61097512581 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Thickness of disc of standard disc plough varies from

**Options :**

1. 60 to 90 mm
2. 5 to 10 mm
3. 40 to 60 mm
4. 25 to 30 mm

**Question Number : 158 Question Id : 61097512582 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Night temperature of greenhouse crops is generally in the range of

**Options :**

1. 1 to 5 °C
2. 10 to 15 °C
3. 7 to 21 °C
4. 15 to 50 °C

**Question Number : 159 Question Id : 61097512583 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Common types of cooling pads are made of

**Options :**

1. Wood
2. Aluminium
3. Glass
4. Cellulose

**Question Number : 160 Question Id : 61097512584 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Ability of air to remove solar heat from the greenhouse depends upon its

**Options :**

1. Volume
2. Weight
3. Mass
4. Speed

**Question Number : 161 Question Id : 61097512585 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which type of greenhouse is constructed on hilly terrains?

**Options :**

1. Lean-to type
2. Ridge and furrow type
3. Uneven span type
4. Quonset type

**Question Number : 162 Question Id : 61097512586 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Perimeter watering system in greenhouse can be used for crop production in

**Options :**

1. Benches
2. Trenches
3. Soil
4. Trays

**Question Number : 163 Question Id : 61097512587 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Rocker sprayers are operated at pressure

**Options :**

1. 10 to 14 kg/cm<sup>2</sup>
2. 14 to 18 kg/cm<sup>2</sup>
3. 18 to 20 kg/cm<sup>2</sup>
4. 20 to 24 kg/cm<sup>2</sup>

**Question Number : 164 Question Id : 61097512588 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Maximum spray angle of fan nozzle is

**Options :**

1.  $60^\circ$
2.  $70^\circ$
3.  $80^\circ$
4.  $90^\circ$

**Question Number : 165 Question Id : 61097512589 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Clearance between knife and ledger plate of a reaper ranges from

**Options :**

1. 0.5 to 1.0mm
2. 1 to 10mm
3. 0.1 to 5mm
4. 5 to 10mm

**Question Number : 166 Question Id : 61097512590 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Corn picker was first invented by

**Options :**

1. William F. Ketchum
2. Edmund Quincy
3. Darcy
4. William Watson

**Question Number : 167 Question Id : 61097512591 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

In machines with tapered spindles, the seed cotton is removed from the spindles by means of rotating

**Options :**

1. Straight spindles
2. Sprocket chain
3. Spindle moistner
4. Doffer plate

**Question Number : 168 Question Id : 61097512592 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**



**Orientation : Vertical**

With a solar focusing type collector, highest temperature that can be achieved is about

**Options :**

1. 100 °C
2. 300 °C
3. 500 °C
4. 1000 °C

**Question Number : 169 Question Id : 61097512593 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Doubling the diameter of the rotor will result in increase in the available wind power by

**Options :**

1. One fold
2. Two fold
3. Threefold
4. Four fold

**Question Number : 170 Question Id : 61097512594 Question Type : MCQ Display Question**

**Number : Yes Is Question Mandatory : No Single Line Question Option : No Option**

**Orientation : Vertical**

Wind speeds in relation to height

**Options :**

1. Decreases
2. Increases
3. No change
4. May increase or decrease

**Question Number : 171 Question Id : 61097512595 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Flat plate collectors are not suitable for applications where the temperature is above

**Options :**

1. 50 °C
2. 75 °C
3. 100 °C
4. 150 °C

**Question Number : 172 Question Id : 61097512596 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Beam radiation is also known as

**Options :**

1. Solar radiation
2. Direct radiation
3. Diffusion radiation
4. Global radiation

**Question Number : 173 Question Id : 61097512597 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Length recommended for border irrigation in light soils is

**Options :**

1. 60-120 m
2. 100-180 m
3. 150-300 m
4. 300-400 m

**Question Number : 174 Question Id : 61097512598 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Which is the most economical layout of the tile drainage system?

**Options :**

1. Grid iron
2. Herring bone
3. Random drain
4. Interceptor drain

**Question Number : 175 Question Id : 61097512599 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In the random field drain system, the minimum cross-sectional area should be

**Options :**

1.  $0.5 \text{ m}^2$
2.  $1.0 \text{ m}^2$
3.  $2.0 \text{ m}^2$
4.  $5.0 \text{ m}^2$

**Question Number : 176 Question Id : 61097512600 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Inundation irrigation system is also called as

**Options :**

1. Flood irrigation
2. Flow irrigation
3. Lift irrigation
4. Border irrigation

**Question Number : 177 Question Id : 61097512601 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Perforated pipe sprinkler is best suited, when height of crop doesn't exceed

**Options :**

1. 10-40 cm
2. 30-70 cm
3. 60-90 cm
4. 100 cm

**Question Number : 178 Question Id : 61097512602 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Substances with one or two valence electrons are called as

**Options :**

1. Transistors

2. Resistors
3. Insulators
4. Good conductors

**Question Number : 179 Question Id : 61097512603 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Unit of electric flux density is

**Options :**

1. Coulomb/m<sup>3</sup>
2. Coulomb/m<sup>2</sup>
3. Coulomb/m
4. Coulomb

**Question Number : 180 Question Id : 61097512604 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In which motor, field coil windings are connected in parallel

**Options :**

1. Shunt wound D.C. motor

2. A.C. motor
3. Series wound D.C. motor
4. Compound wound D.C motor

**Question Number : 181 Question Id : 61097512605 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Rotating part of the motor is called as

**Options :**

1. Armature
2. Rotor
3. Commutator
4. Fan

**Question Number : 182 Question Id : 61097512606 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Differences in the electric potentials of two charged bodies is known as

**Options :**

1. Conductance

2. Current
3. Potential difference
4. Power

**Question Number : 183 Question Id : 61097512607 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A hydrograph is a plot of

**Options :**

1. Rainfall intensity and time
2. Runoff discharge and time
3. Cumulative rainfall and time
4. Cumulative runoff and time

**Question Number : 184 Question Id : 61097512608 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A part of rainfall that infiltrates and moves laterally through the upper crusts of soil is

**Options :**

1. Direct runoff
2. Overland flow



3. Base flow

4. Interflow

**Question Number : 185 Question Id : 61097512609 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A unit hydrograph has one unit of

**Options :**

1. Peak discharge

2. Direct runoff

3. Rainfall duration

4. Base period

**Question Number : 186 Question Id : 61097512610 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Flows in small streams are usually due to

**Options :**

1. Overland flow

2. Base flow

3. Interflow

4. Sub-surface flow

**Question Number : 187 Question Id : 61097512611 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Relief of watershed has the units

**Options :**

1. m

2. km

3. sq.m

4. sq.km

**Question Number : 188 Question Id : 61097512612 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Application efficiency in drip irrigation system is

**Options :**

1. 90%

2. 85%

80%

3.

75%

4.

**Question Number : 189 Question Id : 61097512613 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Drip irrigation is not suitable for

**Options :**

1. Vegetables

2. Wheat

3. Fruit crops

4. Tobacco

**Question Number : 190 Question Id : 61097512614 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Most important component of sprinkler irrigation system is

**Options :**

1. Laterals

2. Sub main

3. Sprinkler head

4. Pipe

**Question Number : 191 Question Id : 61097512615 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Type of system adopted for mango crop is

**Options :**

1. On line

2. In line

3. Sprinkler

4. Micro sprinkler

**Question Number : 192 Question Id : 61097512616 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Design operating pressure head in drip irrigation system is

**Options :**

1. 10 m

2. 12 m

3. 14 m

4. 8 m

**Question Number : 193 Question Id : 61097512617 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Tractor flywheel having a gear is called as

**Options :**

1. Ring gear

2. Crown wheel

3. Bull gear

4. Helical gear

**Question Number : 194 Question Id : 61097512618 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A gear which is used in the differential unit of tractor to transmit power at  $90^\circ$  is

**Options :**

1. Helical gear

2. Bevel gear

3. Bull gear

4. Straight spur gear

**Question Number : 195 Question Id : 61097512619 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Point on the tractor body at which its weight may be considered as acting is called as

**Options :**

1. Centre of gravity

2. Wheel base

3. Toe-in

4. Centre of resistance

**Question Number : 196 Question Id : 61097512620 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

A wheel or an attachment to a wheel with spaced cross bars for improving the traction of the tractor in a wet field is called as

**Options :**

1. Pneumatic wheel

2. Gauge wheel

3. Cage wheel
4. Rear furrow wheel

**Question Number : 197 Question Id : 61097512621 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Temperature range of psychrophilic bacteria for survival is

**Options :**

1. 0-20 °C
2. 20-40 °C
3. 40-70 °C
4. 75-80 °C

**Question Number : 198 Question Id : 61097512622 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

In which of the following gasifier, Gas produced leaves from the bottom ?

**Options :**

1. Updraft
2. Downdraft

3. Cross draft

4. Side draft

**Question Number : 199 Question Id : 61097512623 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

Pressure range in case of binderless briquetting process in  $\text{kg/cm}^2$  is

**Options :**

1. 1200-2000

2. 500-1000

3. 100-200

4. 50-100

**Question Number : 200 Question Id : 61097512624 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical**

With a cubic meter of bio gas, 1 HP engine can run approximately for

**Options :**

1. 5 h

2. 2 h

3. Cannot run



4. 10 h