Andhra Pradesh State Council of Higher Education

Notations:

Is this Group for Examiner?:

1.Options shown in green color and with ✓ icon are correct.

2.Options shown in red color and with * icon are incorrect.

Agricultural Engineering 19th Sep 2021 **Question Paper Name:** Shift1 **Duration:** 180 **Total Marks:** 200 **Display Marks:** No **Calculator:** None **Magnifying Glass Required?:** Nο **Ruler Required?:** No **Eraser Required?:** Nο **Scratch Pad Required?:** No Rough Sketch/Notepad Required?: No **Protractor Required?:** No **Show Watermark on Console?:** Yes **Highlighter:** No Auto Save on Console? (SA type of questions will Yes be always auto saved):

Mathematics

No

Section Id :

Section Number :

Mandatory or Optional: Mandatory

Number of Questions: 50

Section Marks: 50

Enable Mark as Answered Mark for Review and

Clear Response:

Question Number: 1 Question Id: 47720317625 Display Question Number: Yes Is Question

477203347

1

Yes

Mandatory: No

If
$$A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$
 and $B = \begin{bmatrix} 5 & 6 \\ 7 & 8 \end{bmatrix}$ then $AB^T =$

Options:

$$\begin{bmatrix} 17 & 23 \\ 39 & 53 \end{bmatrix}$$

Question Number : 2 Question Id : 47720317626 Display Question Number : Yes Is Question

Mandatory : No

If A is any square matrix, then $A - A^{T}$ is

Options:

Question Number : 3 Question Id : 47720317627 Display Question Number : Yes Is Question Mandatory : No

If
$$\begin{vmatrix} 4 & -5 & 6 \\ 7 & x & 8 \\ -1 & 2 & -3 \end{vmatrix} = 0$$
, then, $x =$

$$-\frac{55}{6}$$

$$-\frac{15}{2}$$

Mandatory: No

If $A = \begin{bmatrix} 3 & -5 \\ -7 & 2 \end{bmatrix}$, $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ and B is a square matrix such that AB = I, then, B = I

Options:

$$\begin{bmatrix} 2 & 5 \\ 7 & 3 \end{bmatrix}$$

$$\begin{bmatrix} -2 & 5 \\ 7 & -3 \end{bmatrix}$$

$$-\frac{1}{29}\begin{bmatrix}2 & 5\\7 & 3\end{bmatrix}$$

 $-\frac{1}{29} \begin{bmatrix} -2 & 5 \\ 7 & -3 \end{bmatrix}$

Question Number: 5 Question Id: 47720317629 Display Question Number: Yes Is Question Mandatory: No

If $x = \alpha$, $y = \beta$, $z = \gamma$ is the unique solution of the system of simultaneous linear equations x - 2y + z = 5, 2x + y - 2z = -3 and x - 2y + 3z = 9, then, y = -3

Question Number : 6 Question Id : 47720317630 Display Question Number : Yes Is Question Mandatory : No

If
$$\frac{4x-22}{3x^2+2x-8} = \frac{A}{x+2} + \frac{B}{3x-4}$$
, then, A+B =

Options:

Question Number : 7 Question Id : 47720317631 Display Question Number : Yes Is Question Mandatory : No

If
$$\frac{4-7x^2}{3x^3+6x^2} = \frac{A}{x} + \frac{Bx+C}{x^2+2}$$
, then, A+C =

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

Question Number : 8 Question Id : 47720317632 Display Question Number : Yes Is Question Mandatory : No

If $\tan \theta = -\frac{4}{3}$ and θ is not in the second quadrant, then, $\cos \theta + \csc \theta =$

Options:

$$-\frac{13}{20}$$

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

$$\frac{27}{20}$$

Question Number : 9 Question Id : 47720317633 Display Question Number : Yes Is Question Mandatory : No

The sine function, whose period is $\frac{4}{5}$, is

$$\sin \frac{5\pi}{4}x$$

$$\sin \frac{4\pi}{5}x$$

2. \$

$$\sin \frac{5\pi}{2}x$$

3. 💙

$$\sin \frac{2\pi}{5}x$$

4. 💸

Question Number : 10 Question Id : 47720317634 Display Question Number : Yes Is Question Mandatory : No

If A+B =
$$\frac{3\pi}{4}$$
, then, $(1 - \tan A)(1 - \tan B) =$

Options:

1. * 0

2. * 1

3. 🗸 2

Mandatory: No

If
$$0 < A < \frac{\pi}{4}$$
 and $\sin A = \frac{3}{5}$, then, $\sin 2A + \cos 2A =$

Options:

Question Number : 12 Question Id : 47720317636 Display Question Number : Yes Is Question Mandatory : No

$$\cos 56^{0} + \sin 26^{0} - \sin 86^{0} =$$

Question Number : 13 Question Id : 47720317637 Display Question Number : Yes Is Question Mandatory : No

The general solution of the trigonometric equation $\sec x = 4 \cos x$ is x =

Options:

$$2n\pi \pm \frac{\pi}{3} \text{ or } 2n\pi \pm \frac{2\pi}{3}$$

$$2n\pi \pm \frac{\pi}{6} \text{ or } 2n\pi \pm \frac{5\pi}{6}$$

$$2n\pi \pm \frac{\pi}{4} \text{ or } 2n\pi \pm \frac{3\pi}{4}$$

$$n\pi + (-1)^n \frac{\pi}{3} \text{ or } n\pi + (-1)^n \frac{2\pi}{3}$$

Question Number : 14 Question Id : 47720317638 Display Question Number : Yes Is Question Mandatory : No

The general solution of the trigonometric equation $\cos 4\theta = \cos 3\theta$ is $\theta =$

$$n\pi + \frac{\pi}{6}$$

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

$$\frac{2n\pi}{7} \text{ or } 2n\pi$$

$$\frac{n\pi}{7}$$
 or $n\pi$

4. 💥

Question Number : 15 Question Id : 47720317639 Display Question Number : Yes Is Question Mandatory : No

$$\cos\left[\frac{\pi}{2} + \cos^{-1}\left(-\frac{3}{5}\right)\right] =$$

Options:

$$\frac{4}{1}$$

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

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

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

4. 3

Question Number : 16 Question Id : 47720317640 Display Question Number : Yes Is Question Mandatory : No

$$\cot\left[\operatorname{Tan}^{-1}\left(\frac{1}{6}\right) + \operatorname{Tan}^{-1}\left(\frac{5}{7}\right)\right] =$$

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

Question Number : 17 Question Id : 47720317641 Display Question Number : Yes Is Question Mandatory : No

In a triangle ABC, if b = 3, c = 4 and $\cos A = \frac{7}{8}$, then, a =

Options:

Question Number : 18 Question Id : 47720317642 Display Question Number : Yes Is Question Mandatory : No

If
$$i^2 = -1$$
, then, $(1 - i)^{2020} =$

Options:

Question Number : 19 Question Id : 47720317643 Display Question Number : Yes Is Question Mandatory : No

If
$$i^2 == -1$$
, then, $(\sqrt{3} + i)^4 + (\sqrt{3} - i)^4 =$

Options:

Question Number : 20 Question Id : 47720317644 Display Question Number : Yes Is Question

Mandatory: No

If (1,2) and (2,1) are the ends of one of the diameters of a circle, then the equation of the circle is

Options:

$$x^2 + y^2 - 3x - 3y - 4 = 0$$

$$x^2 + y^2 - 3x + 3y - 4 = 0$$

$$x^2 + y^2 + 3x - 3y - 4 = 0$$

$$x^{2} + y^{2} - 3x - 3y + 4 = 0$$
4.

Question Number : 21 Question Id : 47720317645 Display Question Number : Yes Is Question Mandatory : No

The equation of the circle of radius 2 with its centre at (2,2) is

1.
$$\checkmark$$
 $x^2 + y^2 - 4x - 4y + 4 = 0$

$$x^2 + y^2 + 4x + 4y + 4 = 0$$

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

$$x^2 + y^2 + 4x + 4y + 12 = 0$$

Question Number: 22 Question Id: 47720317646 Display Question Number: Yes Is Question Mandatory: No If the centre of the circle $x^2 + y^2 - 6x + ky + 9 = 0$ lies on the line 2x + y - 4 = 0, then, the radius of that circle is **Options:** 3. * 3 4. * 4 Question Number: 23 Question Id: 47720317647 Display Question Number: Yes Is Question

Mandatory: No

Distance from the focus of the parabola $y^2 = 8x$ to the point (2,4) on it is

Options:

- 1. ** 1
- 2. * 2

Question Number: 24 Question Id: 47720317648 Display Question Number: Yes Is Question

Mandatory: No

If e is the eccentricity and a is the length of the semi-minor axis of the ellipse $9x^2 + 4y^2 = 36$, then, $e^2 + a^2 = 36$

Options:

Question Number : 25 Question Id : 47720317649 Display Question Number : Yes Is Question Mandatory : No

One of the foci of the hyperbola $\frac{x^2}{9} - \frac{y^2}{16} = -1$ is

Question Number: 26 Question Id: 47720317650 Display Question Number: Yes Is Question

Mandatory: No

$$\lim_{x \to 0} \frac{2^x - 1}{\sqrt{2 + x} - \sqrt{2}} =$$

Options:

$$\sqrt{2} \log 2$$

1. **

$$2\sqrt{2} \log 2$$

Question Number: 27 Question Id: 47720317651 Display Question Number: Yes Is Question Mandatory: No

If
$$y=\sqrt{\frac{2+x^2}{2-x^2}}\,$$
 , then, $\frac{dy}{dx}=$

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

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

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

$$\begin{array}{c}
2x \\
(2-x^2)\sqrt{4-x^4}
\end{array}$$

Question Number : 28 Question Id : 47720317652 Display Question Number : Yes Is Question Mandatory : No

If
$$2x^2 - 3xy + y^2 - 4x + 6y - 7 = 0$$
, then, $\frac{dy}{dx} =$

Options:

$$\begin{array}{r}
 -4x - 3y + 4 \\
 \hline
 3x + 2y + 6
 \end{array}$$

$$4x - 3y - 4$$

$$3x - 2y - 6$$

$$\frac{4x + 3y + 4}{3x - 2y - 6}$$

$$4x - 3y - 4
3x + 2y - 6$$

Question Number : 29 Question Id : 47720317653 Display Question Number : Yes Is Question Mandatory : No

If the radius of a sphere is increased from 5 cm to 5.03 cm, then, the approximate relative error in its surface area is

Options:

Question Number : 30 Question Id : 47720317654 Display Question Number : Yes Is Question Mandatory : No

The equation of the normal at (1,1) to the curve $y = 2x^3 - 3x^2 + x + 1$ is

Options:

$$x + y - 2 = 0$$

$$x - y = 0$$

$$3.$$
 $2x - 3y + 1 = 0$

$$x - 2y + 1 = 0$$

Question Number : 31 Question Id : 47720317655 Display Question Number : Yes Is Question Mandatory : No

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

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

Question Number : 32 Question Id : 47720317656 Display Question Number : Yes Is Question Mandatory : No

If the volume of a cube is increasing at the rate of 5 cu. cm./sec, the rate of change in the length of the edge of the cube, when the length of the edge is 5 cm., is

Mandatory: No

The interval in which the function $f(x) = 2x^3 - 9x^2 + 12x - 6$ is strictly increasing is

Options:

$$(-\infty,1) \cup (2,\infty)$$

Question Number : 34 Question Id : 47720317658 Display Question Number : Yes Is Question Mandatory : No

If the perimeter of a rectangle is 40 units, then the area of that rectangle is maximum when its dimensions are

Options:

Question Number : 35 Question Id : 47720317659 Display Question Number : Yes Is Question

Mandatory: No

If
$$u = \frac{x^2 + y^2}{x - y}$$
, then, $\frac{\partial u}{\partial x} + \frac{\partial u}{\partial y} =$

Options:

$$2\left(\frac{x+y}{x-y}\right)$$

Question Number : 36 Question Id : 47720317660 Display Question Number : Yes Is Question Mandatory : No

$$\int \frac{x^2 + 2x - 1}{\sqrt{x^3 + 3x^2 - 3x + 6}} \, dx =$$

$$\frac{2}{3}\sqrt{x^3 + 3x^2 - 3x + 6} + c$$

$$\frac{1}{3}\sqrt{x^3 + 3x^2 - 3x + 6} + c$$

$$\frac{2}{3\sqrt{x^3 + 3x^2 - 3x + 6}} + c$$

$$\frac{1}{6\sqrt{x^3 + 3x^2 - 3x + 6}} + c$$

4. 🕷

Question Number : 37 Question Id : 47720317661 Display Question Number : Yes Is Question Mandatory : No

$$\int e^{2x} \sec 2x (1 + \tan 2x) dx =$$

Options:

$$e^{2x} \sec 2x + c$$

$$e^{2x} \tan 2x + c$$

$$\frac{1}{2}e^{2x}\sec 2x + c$$

$$2e^{2x} \sec 2x + c$$

4. 🕷

Question Number : 38 Question Id : 47720317662 Display Question Number : Yes Is Question Mandatory : No

$$\int \frac{dx}{\sqrt{x^2 - 2x + 5}} =$$

Options:

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

1. *

$$Sinh^{-1}(x-1) + c$$

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

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

Question Number : 39 Question Id : 47720317663 Display Question Number : Yes Is Question Mandatory : No

$$\int_{-2}^2 \frac{x^2}{x-1} \, \mathrm{d}x =$$

Options:

$$8 + \log \frac{1}{3}$$

Question Number : 40 Question Id : 47720317664 Display Question Number : Yes Is Question Mandatory : No

The area enclosed between the X-axis and the curve $y = (x - 2)^2 - 9$ is

Options:

54

$$\frac{124}{3}$$

Question Number : 41 Question Id : 47720317665 Display Question Number : Yes Is Question Mandatory : No

The volume formed when the area bounded by the parabola $y^2 = 8x$, the X-axis and the ordinates at x = 0 and x = 2 rotates about the X-axis is (in cubic units)

- 1. * 4π
- 2. * 8π
- 32π
- 4. **✓** 16π

Mandatory: No

Mean value of $\frac{1}{4+x^2}$ on [-2,2] is

Options:

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

$$\frac{\pi}{32}$$

$$4. \checkmark \frac{\pi}{16}$$

Question Number : 43 Question Id : 47720317667 Display Question Number : Yes Is Question Mandatory : No

Root Mean Square value of $\sqrt{9-2x^2}$ over the range x=0 to x=3 is

Question Number : 44 Question Id : 47720317668 Display Question Number : Yes Is Question Mandatory : No

The differential equation of the family of curves $y = Ae^{3x} + Be^{-2x}$, where A and B are arbitrary constants, is

Options:

$$\frac{d^2y}{dx^2} - 5\frac{dy}{dx} + 6y = 0$$

$$\frac{\mathrm{d}^2 y}{\mathrm{d}x^2} - \frac{\mathrm{d}y}{\mathrm{d}x} + 6y = 0$$

$$\frac{\mathrm{d}^2 y}{\mathrm{d}x^2} + \frac{\mathrm{d}y}{\mathrm{d}x} - 6y = 0$$
3. *

$$\frac{\mathrm{d}^2 y}{\mathrm{d}x^2} - \frac{\mathrm{d}y}{\mathrm{d}x} - 6y = 0$$

Question Number : 45 Question Id : 47720317669 Display Question Number : Yes Is Question Mandatory : No

The general solution of the differential equation $\frac{dy}{dx} = e^{x+y}$ is

$$e^x + e^y = c$$

$$e^x - e^y = c$$

$$e^{x+y} + ce^y + 1 = 0$$

$$e^{x+y} = ce^y + 1$$

Question Number : 46 Question Id : 47720317670 Display Question Number : Yes Is Question Mandatory : No

The general solution of the differential equation $\frac{dy}{dx} - \frac{3y}{x} = \frac{2y^2}{x^2}$ is

Options:

$$y = cx^2(x + y)$$

$$\frac{y}{x-y} = cx^2$$

$$y = cx(x + y)$$

$$y = cx(x - y)$$

Question Number : 47 Question Id : 47720317671 Display Question Number : Yes Is Question Mandatory : No

The general solution of the differential equation $\frac{dy}{dx} - \frac{2y}{x} = x^2 e^{2x}$ is

$$2y = xe^{2x} + 2cx^2$$

$$2y = x^2 e^{2x} + 2cx^2$$

$$y = 2x^2e^{2x} + cx^2$$

$$y = x^2 e^{2x} + cx$$

Question Number : 48 Question Id : 47720317672 Display Question Number : Yes Is Question Mandatory : No

The general solution of the differential equation $\frac{dy}{dx} + y \cot x = y^3 \sin^2 x$ is

Options:

$$2x^2y + \csc^2 x = cy$$

$$2xy^2 + \sin^2 x = cy^2$$

$$2xy^2 + \csc^2 x = cy^2$$

$$2xy + \csc^2 x = cy^2$$

Question Number : 49 Question Id : 47720317673 Display Question Number : Yes Is Question Mandatory : No

The particular integral of the differential equation $(D^2 - 3D + 2)y = e^{3x}$ is

Options:

$$\frac{1}{20}e^{3x}$$

$$\frac{1}{16}e^{3x}$$

$$\frac{1}{3}e^{3x}$$

$$\frac{1}{2}e^{3x}$$

Question Number : 50 Question Id : 47720317674 Display Question Number : Yes Is Question Mandatory : No

The particular integral of the differential equation $(D^2 + 9)y = \sin 3x$ is

$$-\frac{x\cos 3x}{6}$$

$$\frac{x \cos 3x}{6}$$

$$-\frac{x\sin 3x}{6}$$

Physics

Section Id: 477203348

Section Number: 2

Mandatory or Optional: Mandatory

Number of Questions: 25

Section Marks: 25

Enable Mark as Answered Mark for Review and

Yes

Clear Response:

Question Number: 51 Question Id: 47720317675 Display Question Number: Yes Is Question

Mandatory: No

The dimension of Universal Gas Constant "R" is:

Options:

1.
$$\times$$
 [M² L² T⁻² K⁻¹]

2.
$$\times$$
 [M¹ L² T⁻²]

3.
$$\checkmark$$
 [M¹ L² T⁻² K⁻¹]

$$_{4.} * [M^2 L^2 T^{-2} K^0]$$

Question Number: 52 Question Id: 47720317676 Display Question Number: Yes Is Question

Mandatory: No

The value of Planck's constant 'h' is 6.626×10⁻³⁴ J.Hz⁻¹. Its value in eV is

Options:

Question Number : 53 Question Id : 47720317677 Display Question Number : Yes Is Question Mandatory : No

A unit vector perpendicular to $A = \hat{i} + \hat{j} - \hat{k}$ and $B = 2\hat{i} - \hat{j} + 3\hat{k}$ is

Options:

$$\hat{n} = (2\hat{i} - \hat{j} - 3\hat{k}) / \sqrt{14}$$

2.
$$\hat{n} = (2\hat{i} - 5\hat{j} - 3\hat{k})/\sqrt{38}$$

3. *
$$\hat{n} = (2\hat{i} - 5\hat{j} - 3\hat{k})/\sqrt{28}$$

4. *
$$\hat{n} = (\hat{i} - \hat{j} - \hat{k}) / \sqrt{3}$$

Question Number : 54 Question Id : 47720317678 Display Question Number : Yes Is Question Mandatory : No

If the two vectors **A** and **B** are such that $|\mathbf{A} \cdot \mathbf{B}| = |\mathbf{A} + \mathbf{B}|$ then

$$A = B$$

2. A is parallel to B

4. A is perpendicular to B

Question Number : 55 Question Id : 47720317679 Display Question Number : Yes Is Question Mandatory : No

A rubber ball of mass 0.2 kg falls onto the floor. The ball hits with a speed of 8 m/s and rebounds with approximately the same speed. High speed photographs show that the ball is in contact with the floor for 10⁻³ s. Then the average force exerted on the ball by the floor is

Options:

1, * 1,600 N

2. * 0 N

3, 4 3,200 N

4. × 320 N

Question Number : 56 Question Id : 47720317680 Display Question Number : Yes Is Question

Mandatory: No

A projectile is fired with a speed 'u' at an angle θ with the horizontal. Find its speed when its direction of motion makes an angle α with the horizontal.

Options:

1. $u\cos(\theta)\cos(\alpha)$

$$4. \checkmark u \cos(\theta) \sec(\alpha)$$

Question Number : 57 Question Id : 47720317681 Display Question Number : Yes Is Question Mandatory : No

A person travelling on a straight line moves with a uniform velocity 'v₁' for a distance 'x' and with a uniform velocity 'v₂' for the next equal distance. The average velocity 'v' is given by

Options:

$$v = \frac{v_1 + v_2}{2}$$

$$v = \sqrt{v_1 v_2}$$

$$\frac{2}{v} = \frac{1}{v_1} + \frac{1}{v_2}$$

$$\frac{1}{v} = \frac{1}{v_1} + \frac{1}{v_2}$$

Question Number : 58 Question Id : 47720317682 Display Question Number : Yes Is Question Mandatory : No

A ball is dropped from a height 'H'. If it takes 0.2 sec to cross the last 6.0 m before hitting the ground, the value of height 'H' from which it was dropped is

- 2. ***** 42 m
- 3. ***** 12 m
- 4. × 30 m

Question Number : 59 Question Id : 47720317683 Display Question Number : Yes Is Question Mandatory : No

Mark the correct statement about the frictional force 'f' when a body slides across a surface with coefficient of friction μ .

Options:

- 1. * The magnitude of 'f' is less than μN
- 2. of is independent of the area of contact
- 'f' depends on the area of contact
- 4 * 'f' is directly proportional to the instantaneous velocity of the body

Question Number : 60 Question Id : 47720317684 Display Question Number : Yes Is Question Mandatory : No

A body starts slipping down an incline and moves half meter in half second. How long will it take to move the next half meter?

- 1. 0.2 sec
- 2. **×** 0.5 sec

3. ***** 1.0 sec

4. ***** 0.1 sec

Question Number : 61 Question Id : 47720317685 Display Question Number : Yes Is Question Mandatory : No

The energy needed to eject a 50kg spacecraft from the surface of the earth is (radius of the earth is 6.4×10^6 m)

Options:

 $1.1 \times 10^4 \,\mathrm{J}$

2. * $1.1 \times 10^9 \,\mathrm{J}$

 $3. \times 3.13 \times 10^4 \,\mathrm{J}$

4. ✓ 3.13× 10⁹ J

Question Number : 62 Question Id : 47720317686 Display Question Number : Yes Is Question Mandatory : No

A particle of mass 'm' moves in one dimension along the positive x-axis. It is acted on by a constant force directed towards the origin with magnitude 'B', and an inverse square law repulsive force with magnitude (A/x^2) away from the origin. The equilibrium position x_0 of the mass is at

Options:

1. **x** x₀=0

2.
$$\checkmark$$
 $x_0=(A/B)^{1/2}$

3.
$$\times x_0 = (A/B)$$

Question Number: 63 Question Id: 47720317687 Display Question Number: Yes Is Question Mandatory: No

Ocean thermal energy is due to

Options:

- 1. * Energy stored by waves in the ocean
- 7 × Tides arising out in the ocean
- Pressure difference at different levels in the ocean
- Temperature difference at different levels in the ocean

Question Number : 64 Question Id : 47720317688 Display Question Number : Yes Is Question Mandatory : No

Consider the wave $y = (10 \text{ mm}) \sin[(2 \text{ cm}^{-1})x - (60 \text{ s}^{-1})t]$. The time period of this wave is

$$\frac{\pi}{30}$$
 sec

$$\frac{30}{\pi}$$
 sec

$$\frac{\pi}{60}$$
sec

$$\frac{\pi}{120}$$
 sec

Question Number : 65 Question Id : 47720317689 Display Question Number : Yes Is Question Mandatory : No

If the speed of sound at 0°C is 332ms⁻¹, then the atmospheric temperature of a day when sound travels 336 m in one second is

Options:

- 1. * 4⁰ C
- $2. \times 20^{0} \, \text{C}$
- 3. **×** 17⁰ C
- 4. ✓ 7⁰ C

Question Number : 66 Question Id : 47720317690 Display Question Number : Yes Is Question Mandatory : No

A sound source vibrates with a frequency of 1.0 kHz. Two sound waves, originating from this source, travel along different paths in air, where one path is 166 cm longer than other and then meet at a point. Then what will be the nature of interference? The speed of sound in air is 332 ms⁻¹.

- 1. It will be a constructive interference
- 2. * It will be a destructive interference
- 3. * Provided information is insufficient to say about nature of interference

4 * It will depend on the type of source

Question Number : 67 Question Id : 47720317691 Display Question Number : Yes Is Question Mandatory : No

A simple pendulum is taken to a place in space where its distance from the surface of the earth is equal to the radius of the earth. What will be the time period of small oscillations of the pendulum if the length of the string is 1.0 m. Take $g = \pi^2$ m/s² at the surface of the earth.

Options:

1 * 2 sec

2. 🗸 4 sec

 $\frac{1}{\pi}$ sec

2πsec

Question Number : 68 Question Id : 47720317692 Display Question Number : Yes Is Question Mandatory : No

The motion of a block of mass 'm' is restricted on x-axis by attaching two identical springs of spring constant 'k' on its opposite sides. The other ends of the springs are fixed on walls. When the mass is displaced from its equilibrium position on either side, it executes a simple harmonic motion. The period of oscillations for this oscillation is

$$2\pi\sqrt{\frac{m}{k}}$$

$$2\pi\sqrt{\frac{k}{m}}$$

$$2\pi\sqrt{\frac{2k}{m}}$$

$$2\pi\sqrt{\frac{m}{2k}}$$

Question Number : 69 Question Id : 47720317693 Display Question Number : Yes Is Question

Mandatory : No

Is it always true that $dU = C_v dT$?

Options:

1. * Yes.

2. No, it is never true

3. V It is true only for ideal gas

4. * It is true only for non-ideal gas

Question Number : 70 Question Id : 47720317694 Display Question Number : Yes Is Question

Mandatory : No

One mole of ideal monatomic gas is confined in a cylinder by a piston and is maintained at a constant temperature T₀ by thermal contact with a heat reservoir. The gas slowly expands from V₁ to V₂ while being held at the same temperature T₀. The change in internal energy of the gas is

Options:

1. * RToln(V2/V1)

Question Number : 71 Question Id : 47720317695 Display Question Number : Yes Is Question Mandatory : No

A pan filled with hot food cools from 94 °C to 86 °C in 2 minutes when the room temperature is at 20 °C. How long will it take to cool from 71 °C to 69 °C?

Options:

Question Number : 72 Question Id : 47720317696 Display Question Number : Yes Is Question Mandatory : No

In an adiabatic expansion of an ideal gas

$$PV^{\gamma-1} = \text{constant}$$

$$TV^{\gamma} = \text{constant}$$

$$P^{1-\gamma}T^{\gamma} = \text{constant}$$

Question Number: 73 Question Id: 47720317697 Display Question Number: Yes Is Question Mandatory: No

The rms speed of a nitrogen (N₂) molecule at 300K is (One mole of N₂ has a mass of 28 g and kB = 1.38×10^{23} JK⁻¹)

Options:

- 1. **×** 450 ms⁻¹
- 2. ***** 123 ms⁻¹
- 3. \checkmark 517 ms⁻¹
- 4. **2**30 ms⁻¹

Question Number : 74 Question Id : 47720317698 Display Question Number : Yes Is Question Mandatory : No

Which of the following are not the properties of superconductors?

- 1. * They possess infinite conductivity
- 2 * They possess zero resistivity
- 3. They are ferromagnetic in nature

They are diamagnetic in nature

Question Number: 75 Question Id: 47720317699 Display Question Number: Yes Is Question

Mandatory: No

The minimum energy required for a photoelectron to escape from a metal plate in a photocell is called

Options:

- Planck's constant
- 2. Work function
- 3 * Threshold energy
- 4. * Stopping voltage

Chemistry

Section Id: 477203349

Section Number: 3

Mandatory or Optional: Mandatory

Number of Questions: 25

Section Marks: 25

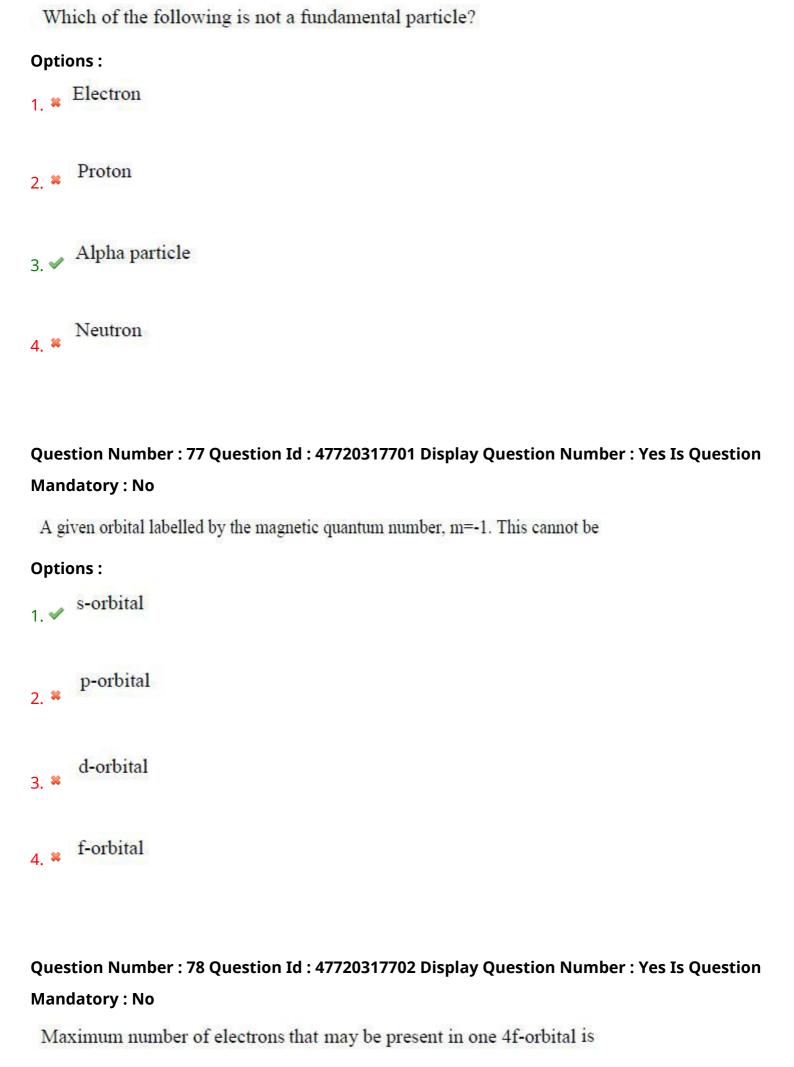
Enable Mark as Answered Mark for Review and

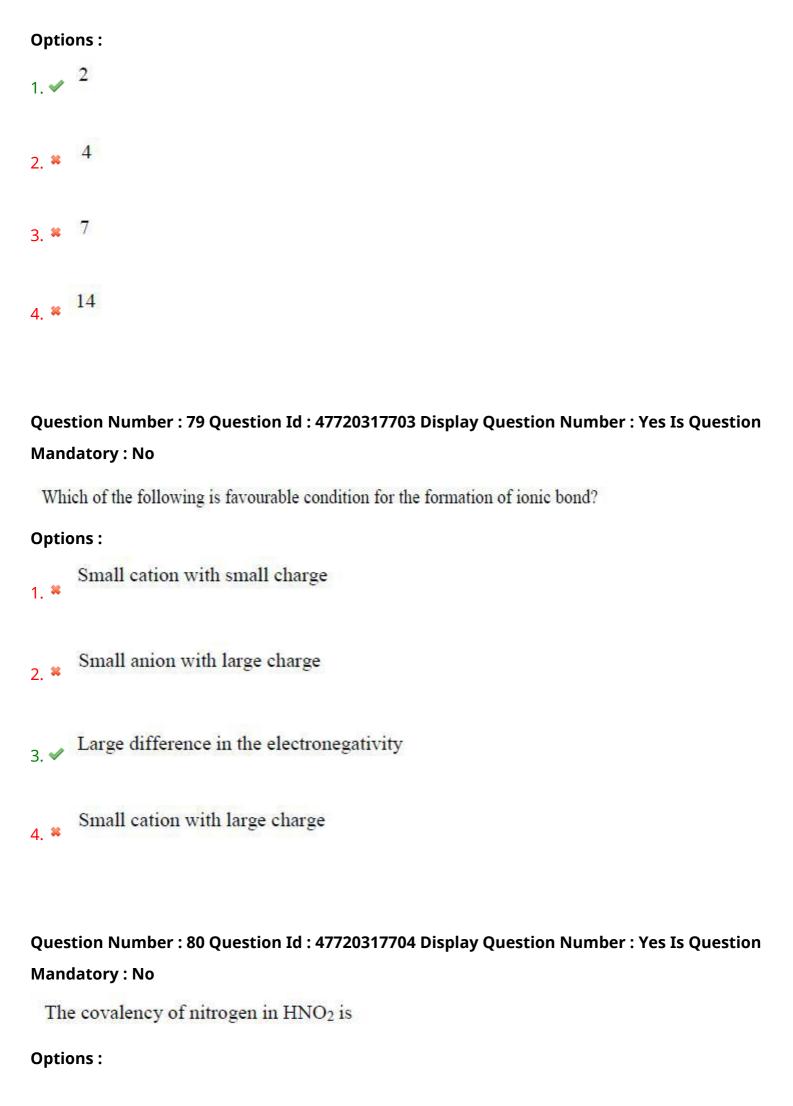
Yes

Clear Response:

Question Number: 76 Question Id: 47720317700 Display Question Number: Yes Is Question

Mandatory: No





1. * 0
2. ** 2
3.
4. **
Question Number : 81 Question Id : 47720317705 Display Question Number : Yes Is Question Mandatory : No
The normality of 0.98%(w/v) H ₂ SO ₄ solution is
Options :
1. * ^{0.1N}
2. ✓ 0.2N
0.4N
4. * 1 N
Question Number : 82 Question Id : 47720317706 Display Question Number : Yes Is Question Mandatory : No
The equivalent weight of CuSO ₄ when it is converted to Cu ₂ I ₂ (M= Mol.wt)

Options:

1. 🗸

M/2

3. ***** M/3

4. ***** 2M

Question Number : 83 Question Id : 47720317707 Display Question Number : Yes Is Question Mandatory : No

Which of the following is centi-normal solution?

Options:

1. * 1 N

2. ***** N/10

3. ***** N/20

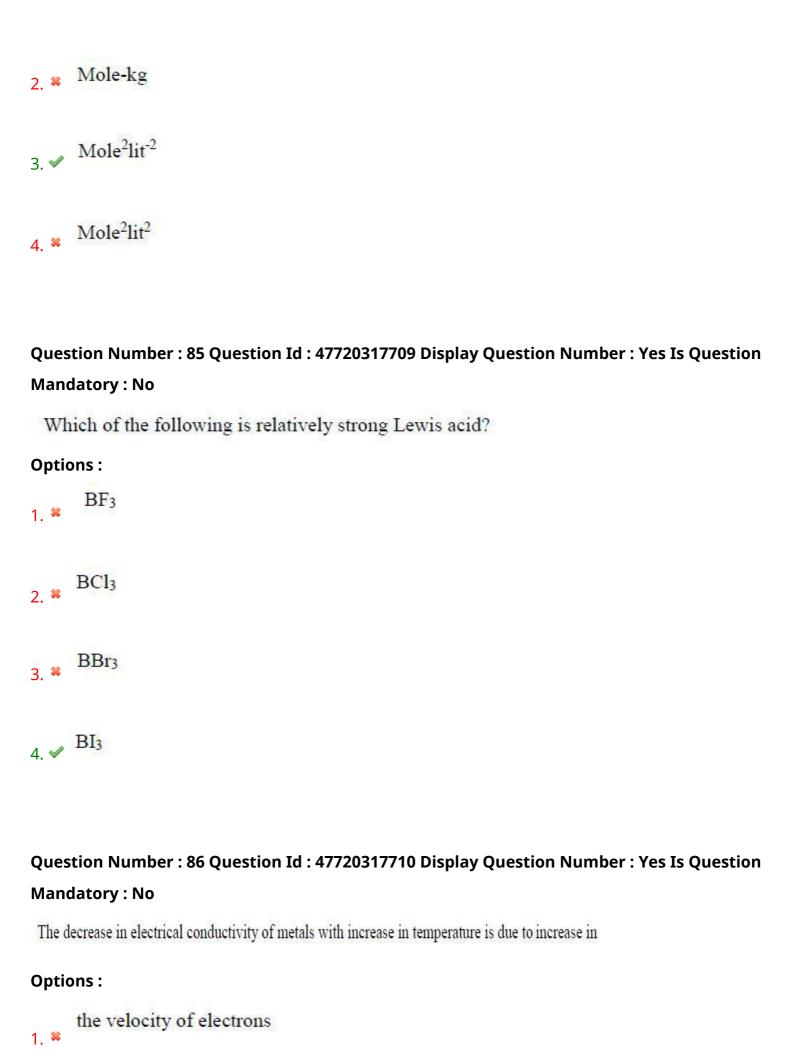
4. **√** N/100

Question Number : 84 Question Id : 47720317708 Display Question Number : Yes Is Question Mandatory : No

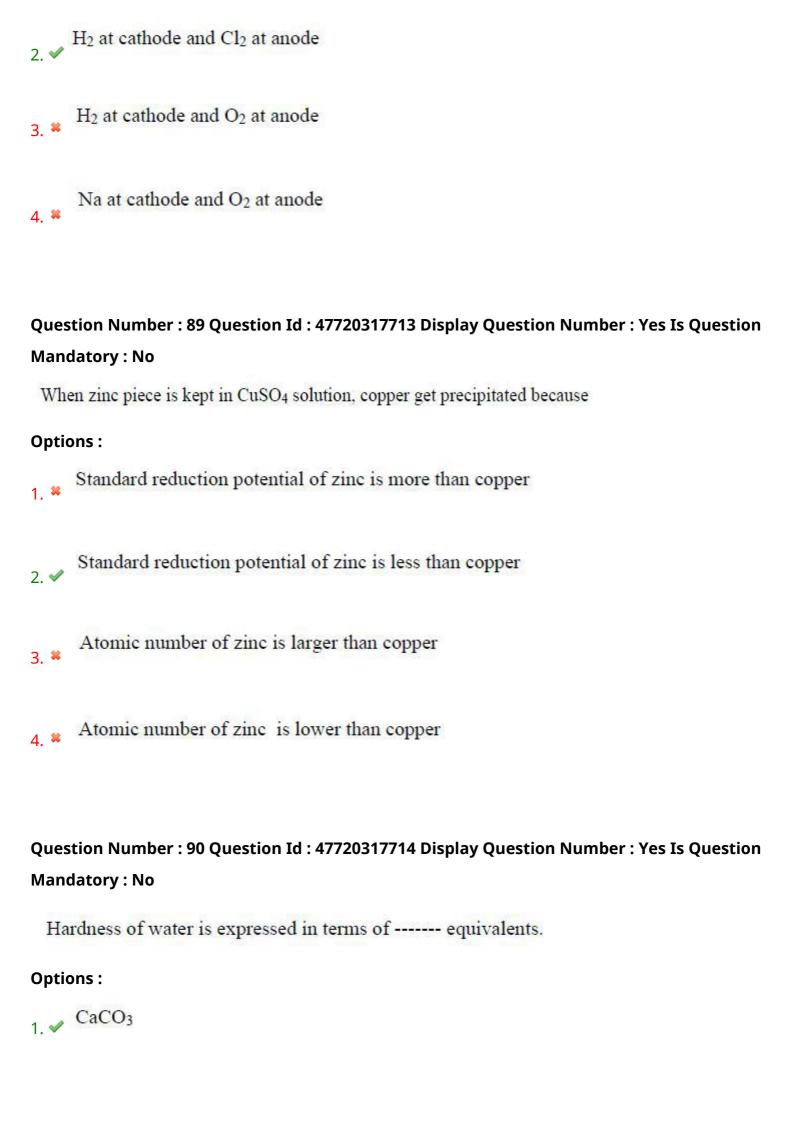
The unit for ionic product of water is

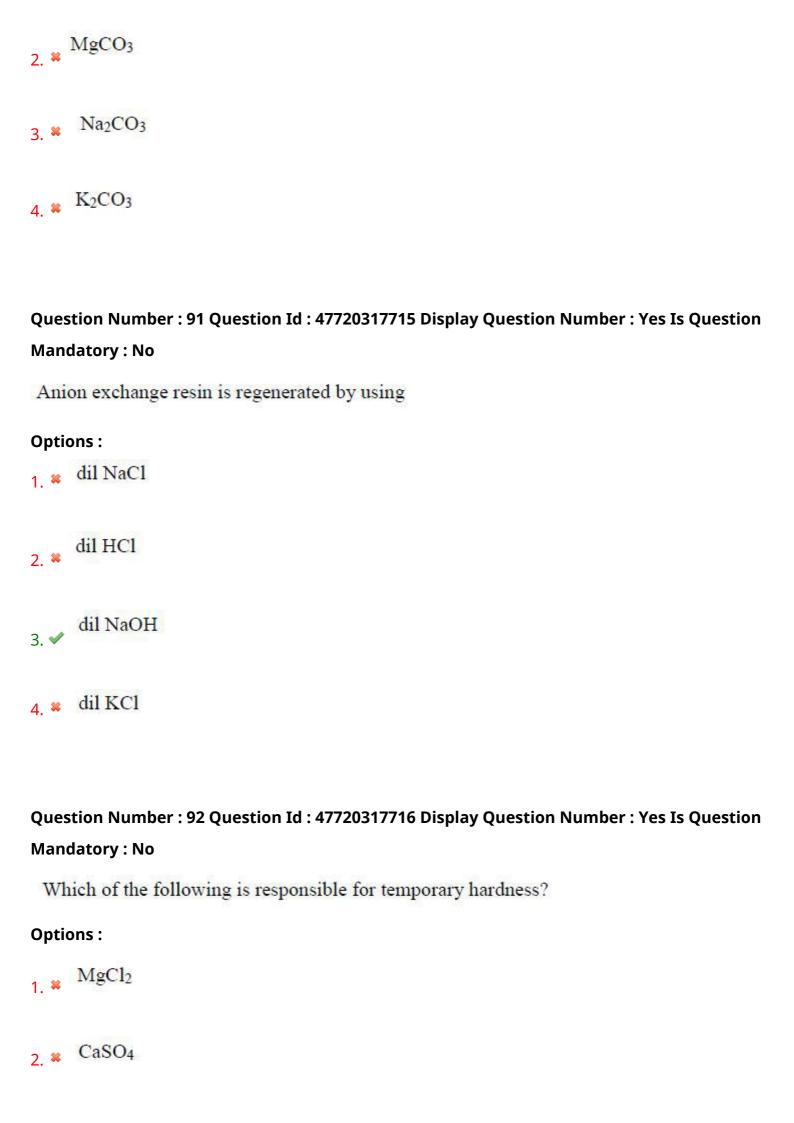
Options:

Mole/kg

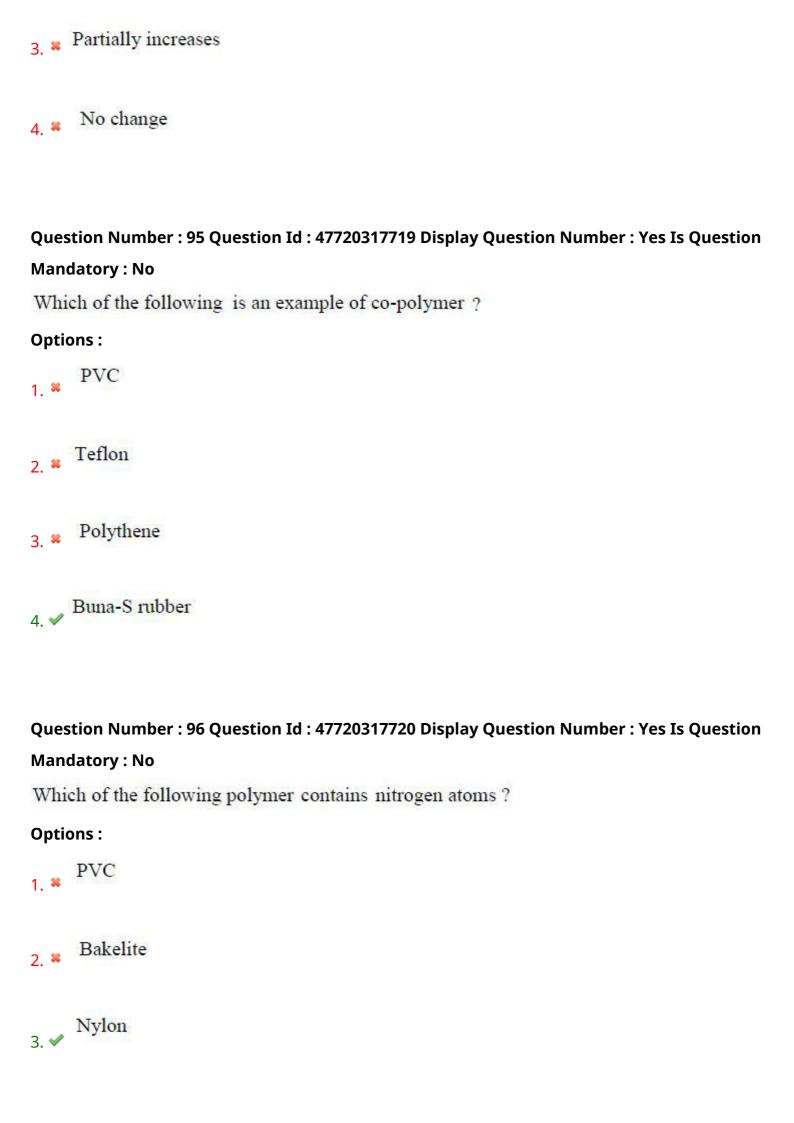


the resistance of the metal 2. the number of electrons the number of metal atoms Question Number: 87 Question Id: 47720317711 Display Question Number: Yes Is Question Mandatory: No In the electrolytic cell, flow of electrons is from: **Options:** Cathode to anode in the solution Cathode to anode through external circuit 2. 💥 Anode to cathode through external circuit Anode to cathode in the solution Question Number: 88 Question Id: 47720317712 Display Question Number: Yes Is Question Mandatory: No The product of electrolysis of aqueous NaCl solution are **Options:** 1. * Na at cathode and Cl₂ at anode





```
3. MgSO<sub>4</sub>
4. ✓ Mg(HCO<sub>3</sub>)<sub>2</sub>
Question Number: 93 Question Id: 47720317717 Display Question Number: Yes Is Question
Mandatory: No
  Corrosion is an example of -----
Options:
      Oxidation
     Reduction
     Electrolysis
      Hydrolysis
Question Number: 94 Question Id: 47720317718 Display Question Number: Yes Is Question
Mandatory: No
 In electrochemical corrosion, if the formed corrosion product is insoluble in the medium then the corrosion rate further ------
Options:
1. * Increases
2. Decreases
```



4. * Teflon Question Number: 97 Question Id: 47720317721 Display Question Number: Yes Is Question Mandatory: No Isoprene is monomer of **Options:** Teflon 2. Nylon 3. V Natural rubber 4. PVC Question Number: 98 Question Id: 47720317722 Display Question Number: Yes Is Question Mandatory: No The only liquid fuel in nature is **Options:** 1. * Kerosene 2. * Diesel 3. * Petrol Petroleum
4. ✓

Question Number : 99 Question Id : 47720317723 Display Question Number : Yes Is Question Mandatory : No

The medium which reacts with pollutant is called

Options:

- 1. V Sink
- 2. * Receptor
- 3. * Speciation
- 4. Contaminant

Question Number : 100 Question Id : 47720317724 Display Question Number : Yes Is Question Mandatory : No

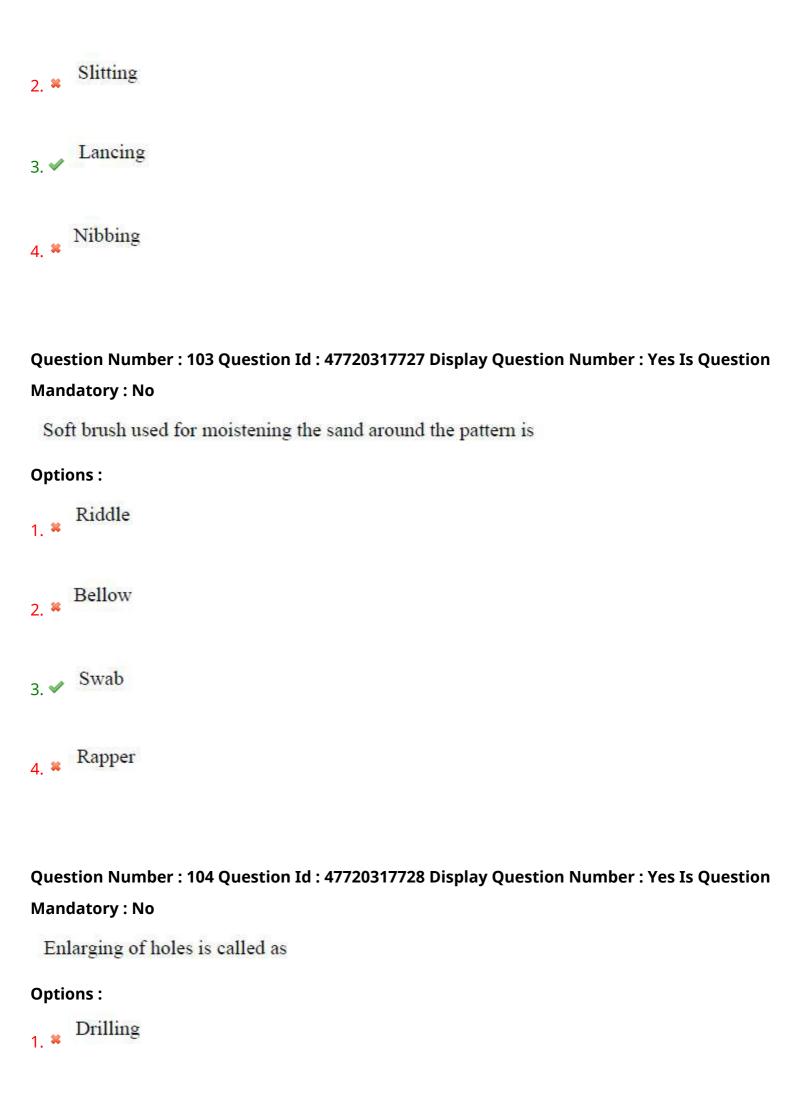
Which of the following is used in the estimation of Chemical Oxygen Demand (COD)?

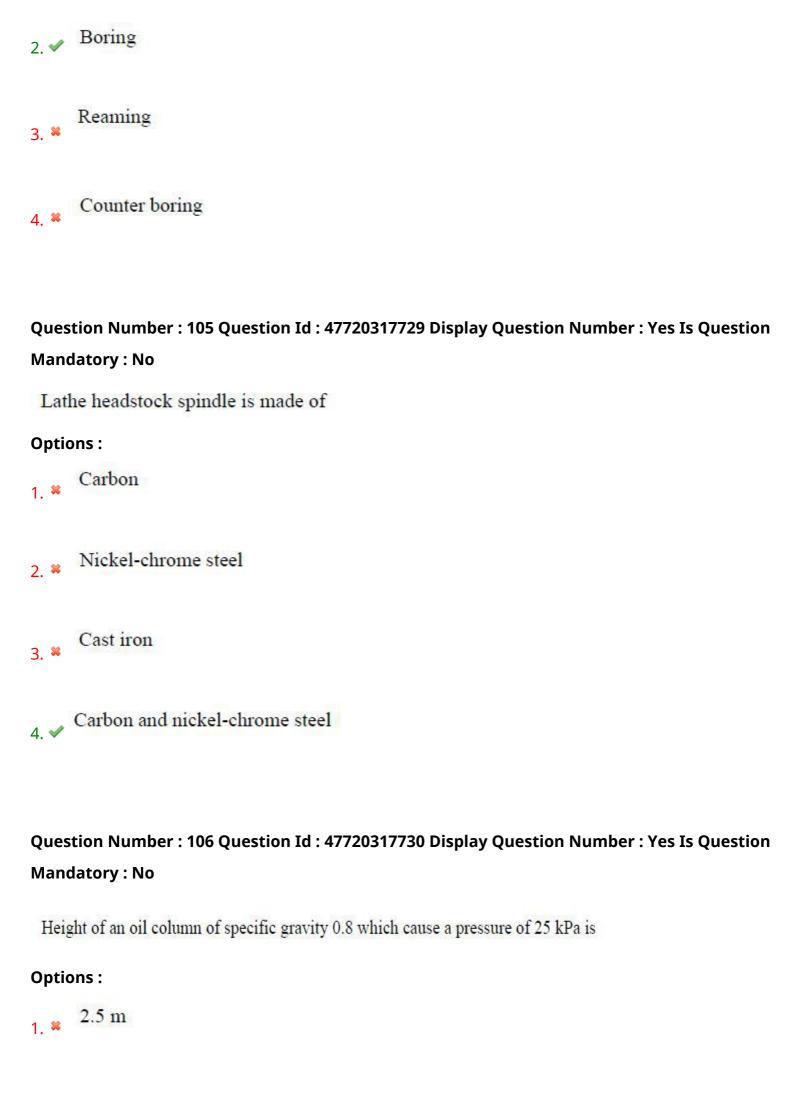
- Methyl orange
- 2. × K₂Cr₂O₇ + 50% H₂SO₄
- 3. * CaOCl₂ + 50% H₂SO₄
- Alum +CaO

Agricultural Engineering

J	
Section Id :	477203350
Section Number :	4
Mandatory or Optional :	Mandatory
Number of Questions :	100
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Question Number : 101 Question Id : 47720317725 Mandatory : No	Display Question Number : Yes Is Question
Type of chisels useful for cutting oil grooves and cha	annels in bearings are
Options: 1. ★ Flat 2. ★ Cross-cut 3. ✔ Round nose 4. ★ Diamond point	
Question Number : 102 Question Id : 47720317726 Mandatory : No	Display Question Number : Yes Is Question
Making a cut part away across a strip of metal sh	eet is
Ontions:	

1. Notching





- 2. * 3.125 m
- 4. **✓** 3.2 m

Question Number : 107 Question Id : 47720317731 Display Question Number : Yes Is Question Mandatory : No

Centre of pressure of 3 m² circular gate its centre placed 4 m below under water level and having 2 m⁴ moment of inertia is

Options:

- 1. ***** 4.0 m
- 2. 🗸 4.3 m
- 3. **×** 5.0 m
- 4. ***** 5.3 m

Question Number : 108 Question Id : 47720317732 Display Question Number : Yes Is Question Mandatory : No

For frictionless flow, head loss is equal to

Options:

3 m

- 2. * 2 m
- 1 m
- 4. **✓** 0 m

Question Number : 109 Question Id : 47720317733 Display Question Number : Yes Is Question Mandatory : No

Time of emptying completely from $10 \text{ m} \times 6 \text{ m}$ tank having water depth of 1.25 m through 0.23 m^2 bottom orifice, if $C_d = 0.62$, is

Options:

- 1. * 112 s
- 2. 🗸 212 s
- 3. **3** 312 s
- 4. ***** 412 s

Question Number : 110 Question Id : 47720317734 Display Question Number : Yes Is Question Mandatory : No

Bazin's constant for discharge of rectangular weir for head of 600 mm is

- 1. * 0.35
- 2. 🗸 0.41

Question Number : 111 Question Id : 47720317735 Display Question Number : Yes Is Question Mandatory : No

Critical depth for 4 m²/s discharge/unit width is

Options:

Question Number : 112 Question Id : 47720317736 Display Question Number : Yes Is Question Mandatory : No

Temperature produced in a power stoke of an engine is about

- 3. ***** 160 °C
- 4. ✓ 1600 °C

Question Number : 113 Question Id : 47720317737 Display Question Number : Yes Is Question Mandatory : No

Temperature at which fuel is cooled to calculate the higher calorific value is

Options:

- 1. ✓ 15 °C
- 2. **≈** 35 °C
- 3. **≈** 65 °C
- 4. **≈** 75 °C

Question Number : 114 Question Id : 47720317738 Display Question Number : Yes Is Question Mandatory : No

Which law states that total pressure of the mixture of gases is equal to the sum of the partial pressure of the individual gases in the mixture?

- Charles law
- Dulong's formula
- Clausius law

4. * Avogadro's law Question Number: 115 Question Id: 47720317739 Display Question Number: Yes Is Question Mandatory: No Storage battery of tractor -ve plates are made of **Options:** Lead 2. * Antimony 3. **✓** Spongy lead Lead and antimony Question Number: 116 Question Id: 47720317740 Display Question Number: Yes Is Question Mandatory: No Speed variation of good governor at full loaded and no-load conditions is about Options: 1. * 500 rpm 2. **2**00 rpm 3. **1**00 rpm

4. * 150 rpm

Question Number : 117 Question Id : 47720317741 Display Question Number : Yes Is Question Mandatory : No

If whole circle bearing of a line is 68°32', it's quadrantal bearing is

Options:

N. 68°32' E.

S. 68°32' E.

N. 68°32' W.

4. E. 68°32' W.

Question Number : 118 Question Id : 47720317742 Display Question Number : Yes Is Question Mandatory : No

Sum of interior angles of a pentagon is equal to

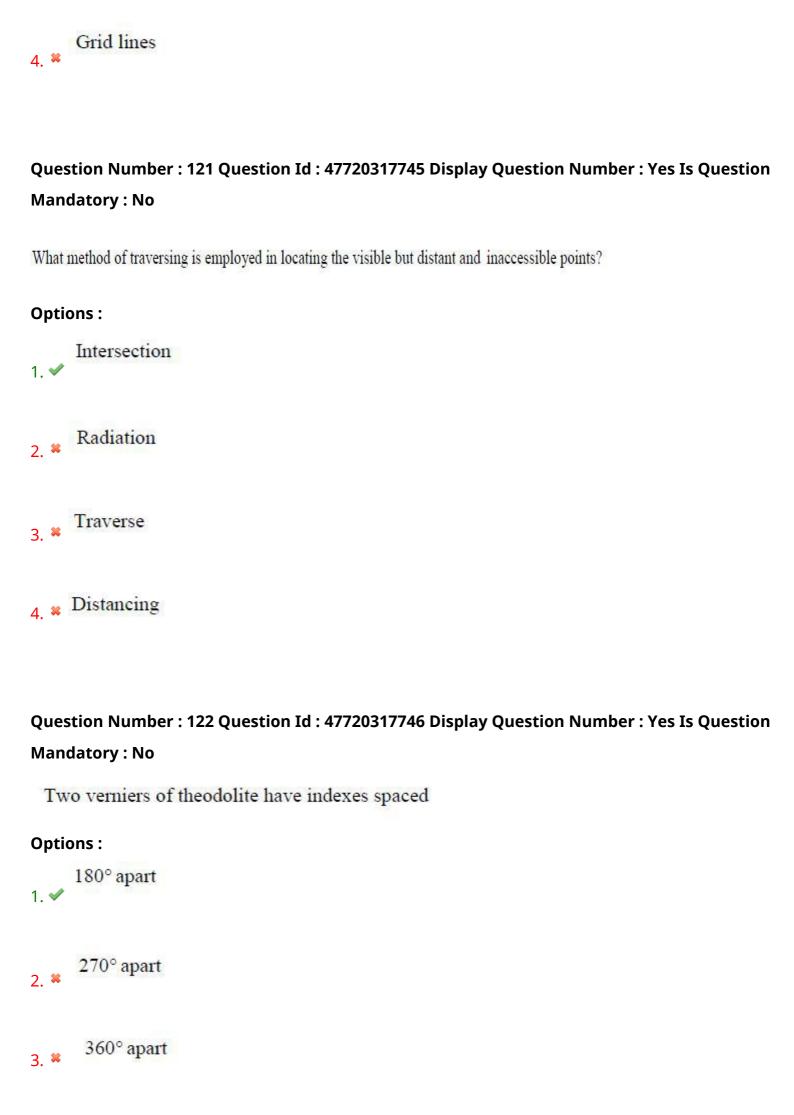
Options:

1. **×** 180°

2. ***** 360°

3. **✓** 540°

4. *
Question Number : 119 Question Id : 47720317743 Display Question Number : Yes Is Question Mandatory : No
In a prismatic compass, the graduations start from zero marked at the
Options :
East end of the needle 1. **
2. ✓ South end of the needle
North end of the needle
West end of the needle 4. *
Question Number : 120 Question Id : 47720317744 Display Question Number : Yes Is Question Mandatory : No
Lines connecting points whose declination is zero are known as
Options :
Isogonic lines 1. **
2. ✓ Agonic lines
Isogonic charts 3. **



90° apart 4. **¥** Question Number: 123 Question Id: 47720317747 Display Question Number: Yes Is Question Mandatory: No Type of compass provided in all modern theodolites is Options: 1. V Tubular Z. T-shaped 3. * Screw 4. W-shaped Question Number: 124 Question Id: 47720317748 Display Question Number: Yes Is Question **Mandatory: No** Indirect method of contouring followed when the area is not very extensive is **Options:** 1. ✓ Squares 2. * Cross-section 3. * Radial lines

```
Straight lines
Question Number: 125 Question Id: 47720317749 Display Question Number: Yes Is Question
Mandatory: No
 Lens fitted to tacheometer is
Options:
1. * Convex
Concave 2. *
3. * Prism
Anallactic
Question Number: 126 Question Id: 47720317750 Display Question Number: Yes Is Question
Mandatory: No
 Rays that distomats use to measure distance are
Options:
1. * Visible
2. *
3. 🗸 IR
```

4. * Radio waves
Question Number : 127 Question Id : 47720317751 Display Question Number : Yes Is Questior Mandatory : No
Physical property that is applied in the design of oscillating conveyors, threshers, etc. is
Options :
Terminal velocity 1. **
2. Angle of repose
Plane of rupture 3. **
Frictional property 4.
Question Number : 128 Question Id : 47720317752 Display Question Number : Yes Is Questior Mandatory : No
Generally, it has been observed that at very low speeds of sliding, with speed, coefficient of kinetic friction
Options:
Increases 1. ✓
Decreases 2. **
3. * Independent

Neither increases nor decreases 4. **
Question Number : 129 Question Id : 47720317753 Display Question Number : Yes Is Question
Mandatory : No
Property of material that is important in separation of chaff from wheat using air stream
Options:
Frictional Drag
2. ** Density
3. ✓ Terminal velocity
Profile drag 4. **
Question Number : 130 Question Id : 47720317754 Display Question Number : Yes Is Question Mandatory : No
If particle size is less than 4 mesh, suitable screens are
Options:
Grizzles 1. **
2. Shaking screens
Vibrating screens 3. **

4. 🗸

Oscillating screens

Question Number : 131 Question Id : 47720317755 Display Question Number : Yes Is Question Mandatory : No

Sticky materials can be conveyed by

Options:

- 1. * Belt conveyor
- Screw conveyor 2. ✔
- 3. * Bucket elevator
- Chain conveyor

Question Number : 132 Question Id : 47720317756 Display Question Number : Yes Is Question Mandatory : No

Screen interval of ASTM Standard screens is

- 1. ** 2
- 2. * 21/2
- 3. **2** 2 1/4

Question Number : 133 Question Id : 47720317757 Display Question Number : Yes Is Question Mandatory : No

Average size of particles $\overline{D_p}$ in mm, in terms of fineness modulus, FM, is given by the equation

Options:

Question Number : 134 Question Id : 47720317758 Display Question Number : Yes Is Question Mandatory : No

Jaw crushers make an angle of

4. ***** 40°-50°

Question Number : 135 Question Id : 47720317759 Display Question Number : Yes Is Question Mandatory : No

Empirical constant, s, of filter cake compressibility is

Options:

- 1. **✓** 0.1-0.8
- 2. * 0.8-1.6
- 3. * 1.6-2.4
- 4. * 2.4-3.2

Question Number : 136 Question Id : 47720317760 Display Question Number : Yes Is Question Mandatory : No

Extra portion of material above the horizontal level in a troughed belt V-conveyor is called as

- Super charge
- 2. Surcharge
- 3. Sub-charge
- 4. * Trough charge

Question Number : 137 Question Id : 47720317761 Display Question Number : Yes Is Question Mandatory : No

In rubber roll Sheller, speed ratio between the fast and slow rollers may be lie between

Options:

- 0.75:1 and 1:0.80
- 2. 1:0.75 and 1:0.80
- 3. * 1:0.50 and 1:0.80
- 4. * 0.5:1 and 0.80:1

Question Number : 138 Question Id : 47720317762 Display Question Number : Yes Is Question Mandatory : No

After pre-treatment (pulse with oil), pulses are kept on the floor for oil diffusion about

Options:

- 1. * 6 h
- 2. × 8 h
- 3. **✓** 12 h
- 4. × 16 h

Question Number: 139 Question Id: 47720317763 Display Question Number: Yes Is Question

Mandatory: No

In comparison to raw rice bran, parboiled bran contains

Options:

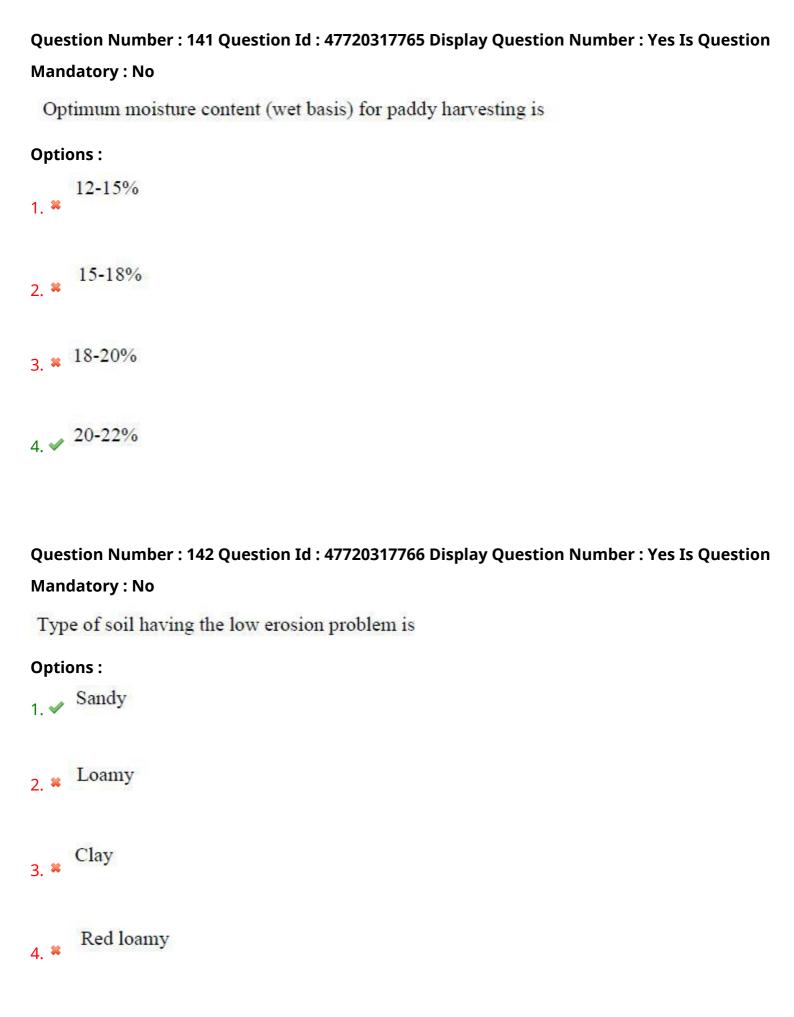
- Less starch and more oil
- More starch and less oil
- More starch and more oil
- Less starch and less oil

Question Number : 140 Question Id : 47720317764 Display Question Number : Yes Is Question Mandatory : No

Angular velocity of under runner disc varies from

Options:

- 1. 11-13 m/s
- 2. ***** 11-17 m/s
- 3. **21-26** m/s
- 4. ***** 7-11 m/s



Question Number: 143 Question Id: 47720317767 Display Question Number: Yes Is Question

Mandatory: No

Contour trenching is followed when land slope exceeds

Options:

Question Number : 144 Question Id : 47720317768 Display Question Number : Yes Is Question Mandatory : No

Staggered trenches have length of

Options:

Question Number : 145 Question Id : 47720317769 Display Question Number : Yes Is Question

An example of artificial vegetation is Options: Shrubs Brushwood dam Sod flume 3. ✓ 4. * Agave plantation Question Number: 146 Question Id: 47720317770 Display Question Number: Yes Is Question Mandatory: No Rational formula predicts Options: Peak rate of nunoff Rainfall excess Direct runoff 4. * Infiltration

Question Number : 147 Question Id : 47720317771 Display Question Number : Yes Is Question Mandatory : No

Two primary tillage equipment are

0	pt	io	ns	
$\mathbf{\circ}$	μι	··	113	•

- Mould board plough and disc harrow
- Disc plough and disc harrow
- Disc harrow and cultivator 3. *
- Mould board plough and sub-soiler 4. ✓

Question Number : 148 Question Id : 47720317772 Display Question Number : Yes Is Question Mandatory : No

Tilt angle in a disc plough varies from

Options:

- 5° to 10°
- 10° to 15°
- 3. 15° to 2°
- 4. **2**5° to 30°

Question Number: 149 Question Id: 47720317773 Display Question Number: Yes Is Question

Mandatory: No Maximum clearance under the landside and horizontal surface when M.B. plough is resting on ground surface is **Options:** Throat clearance Horizontal suction 3. Vertical suction Vertical clevis Question Number: 150 Question Id: 47720317774 Display Question Number: Yes Is Question Mandatory: No A strip of unploughed land that left at each end of the field for tractor turning is **Options:** Gathering 2. * Casting 3. ✓ Head land 4. Crown Question Number: 151 Question Id: 47720317775 Display Question Number: Yes Is Question

Concavity of 60 cm diameter disc of disc plough is about **Options:** 1. **✓** 8 cm 2. × 5 cm 3. * 10 cm 4. * 15 cm Question Number: 152 Question Id: 47720317776 Display Question Number: Yes Is Question Mandatory: No Evaporative cooling systems for greenhouses are developed to reduce the problem of Options: Excess heat Excess cool

Question Number : 153 Question Id : 47720317777 Display Question Number : Yes Is Question Mandatory : No

Excess heat and cool

Relative humidity

3. 🗱

Different structural designs of greenhouse based on the types of Options: Structure Frames 3. * Glass 4. [♣] Plastic film Question Number: 154 Question Id: 47720317778 Display Question Number: Yes Is Question Mandatory: No In general, the percentage of carbon dioxide in the atmosphere is Options: 1. **✓** 345 ppm 350 ppm 435 ppm 3. **※** 4. × 360 ppm

Question Number : 155 Question Id : 47720317779 Display Question Number : Yes Is Question Mandatory : No

Light transmission of Tefzel T² film is

Options:

- 80%
- 2. * 85%
- 3. **
- 4. **✓** 95%

Question Number : 156 Question Id : 47720317780 Display Question Number : Yes Is Question Mandatory : No

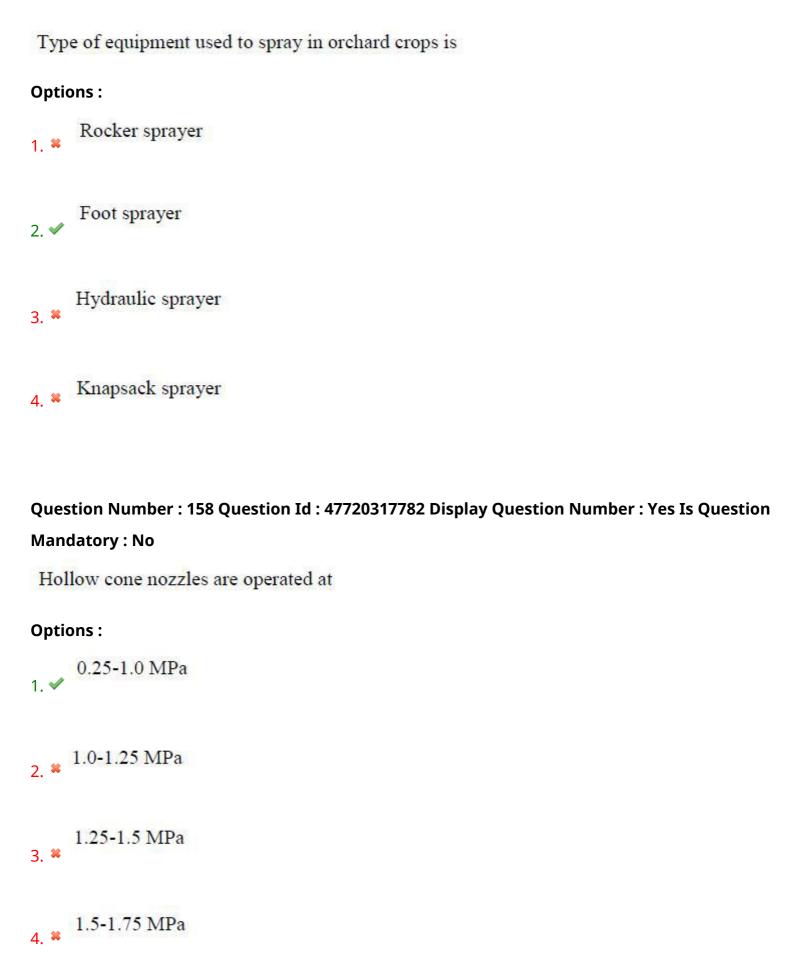
Greenhouse is placed against the side of an existing building is

Options:

- Lean-to type

 1. ✓
- Even span type
- Saw tooth type
- Quonset type

Question Number: 157 Question Id: 47720317781 Display Question Number: Yes Is Question



Question Number : 159 Question Id : 47720317783 Display Question Number : Yes Is Question Mandatory : No

In a cotton picker with drum type spindle arrangement, for machine's forward speed of 4.3 km/h the picking time is

Options:

- 0.1 s
- 2. **v** 0.2 s
- 3. **3** 0.3 s
- 4. ***** 0.4 s

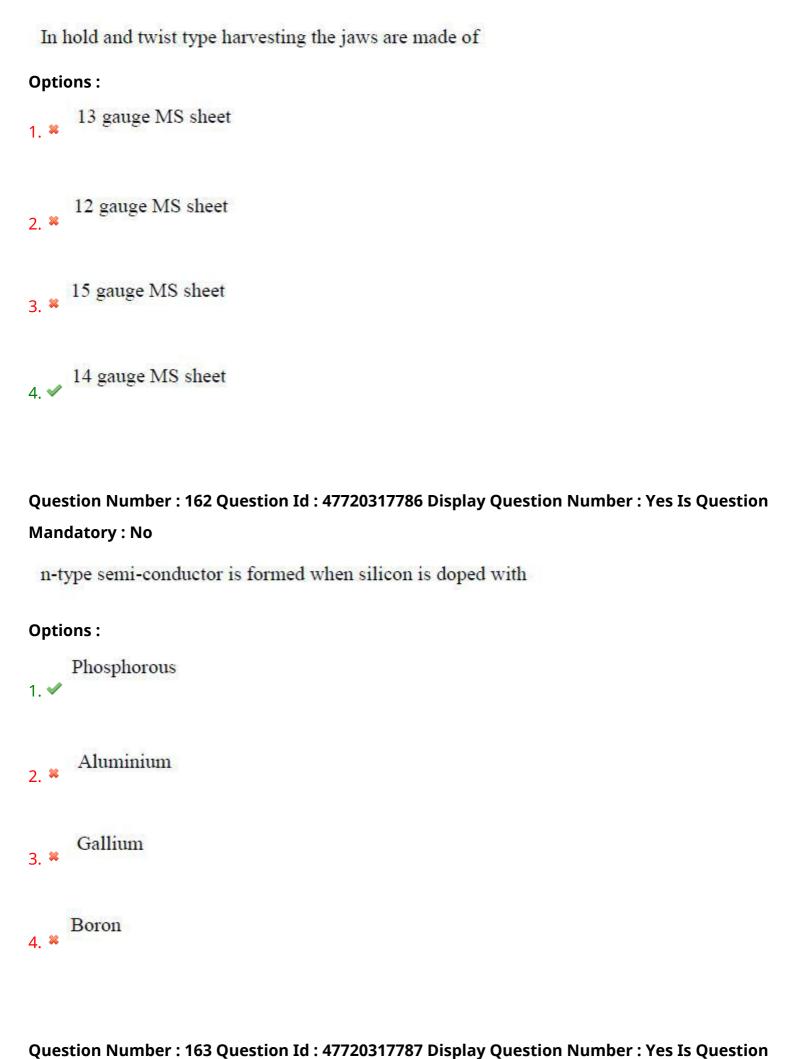
Question Number : 160 Question Id : 47720317784 Display Question Number : Yes Is Question Mandatory : No

Mechanical cotton picker having the harvesting speed (m/s)

Options:

- 1. 1.1 to 1.6
- 2 to 2.5
- 3. **3** to 4
- 4. × 1.8 to 2.7

Question Number : 161 Question Id : 47720317785 Display Question Number : Yes Is Question Mandatory : No



Savonius rotor type wind mill is of



- Vertical axis
- Horizontal axis
- 3. * Both vertical and horizontal
- 4. * Angular

Question Number : 164 Question Id : 47720317788 Display Question Number : Yes Is Question Mandatory : No

Minimum average wind speed at which wind energy conversion system works is about

Options:

- 3.5-4.5 m/s
- 2. ***** 4.5-5.5 m/s
- 3. **2**.5-3.5 m/s
- 4. **3** 5.5-6.5 m/s

Question Number : 165 Question Id : 47720317789 Display Question Number : Yes Is Question Mandatory : No

Device in which stored chemical energy is converted directly into electrical energy is

Options:

Solar cell

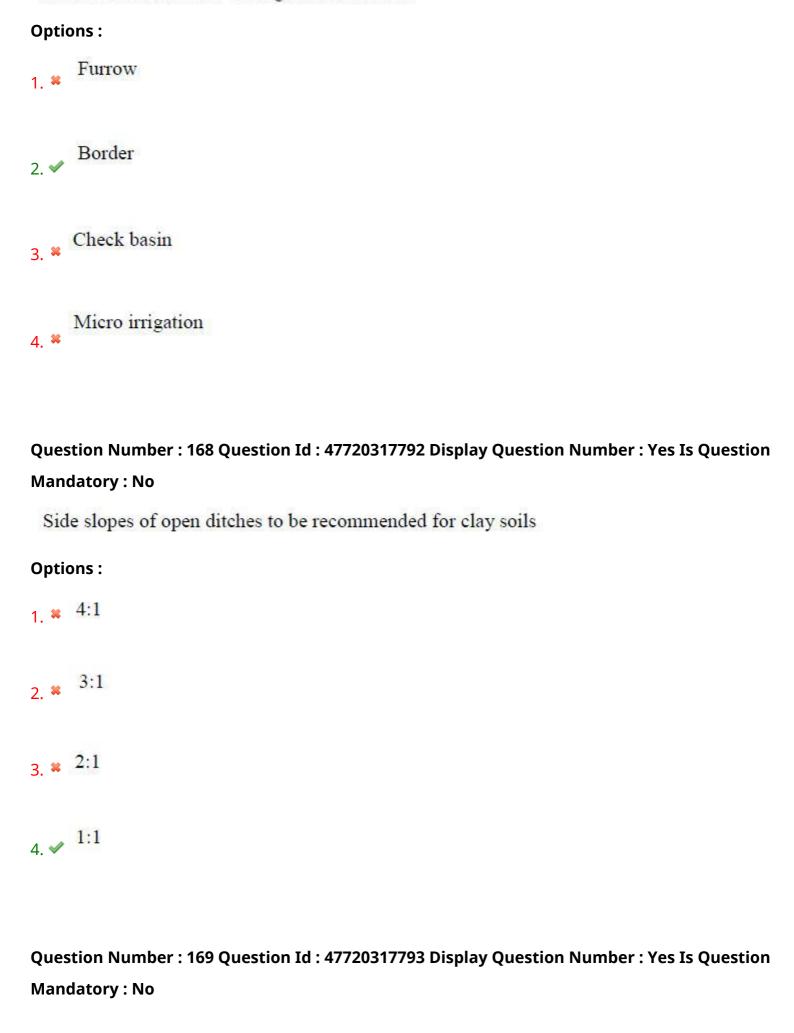


Question Number : 166 Question Id : 47720317790 Display Question Number : Yes Is Question Mandatory : No

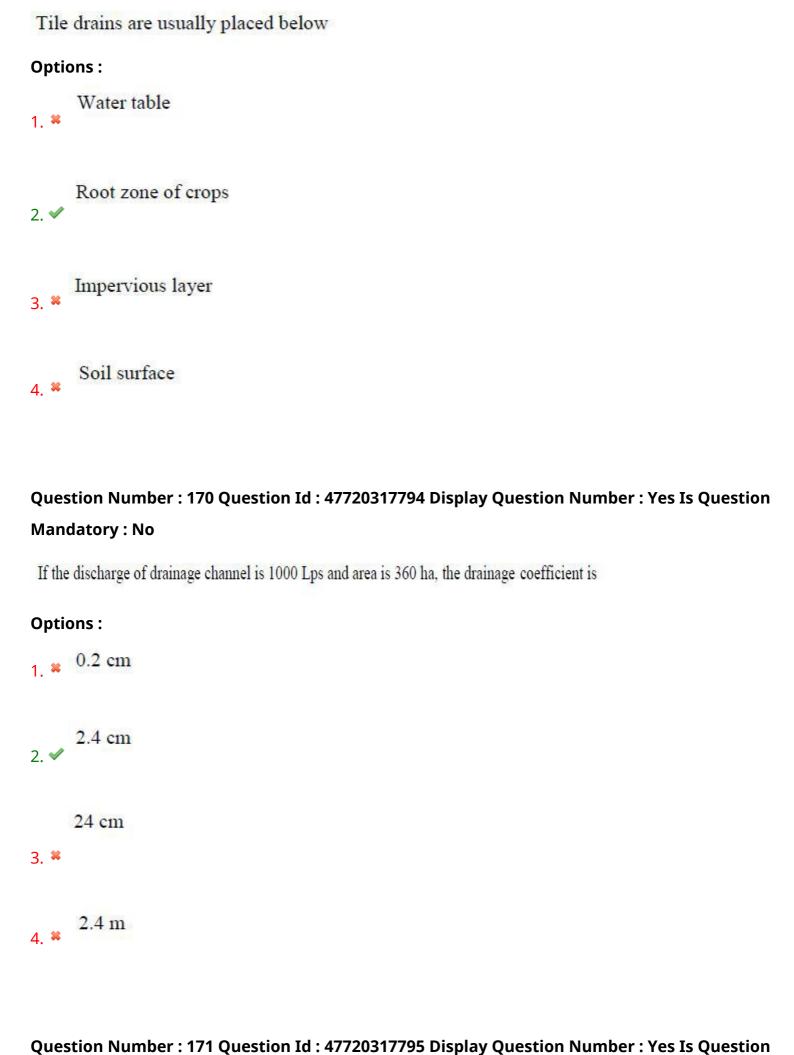
Actual value of solar constant slightly deviates with a range nearly due to slightly elliptical orbit of the earth around the sun is

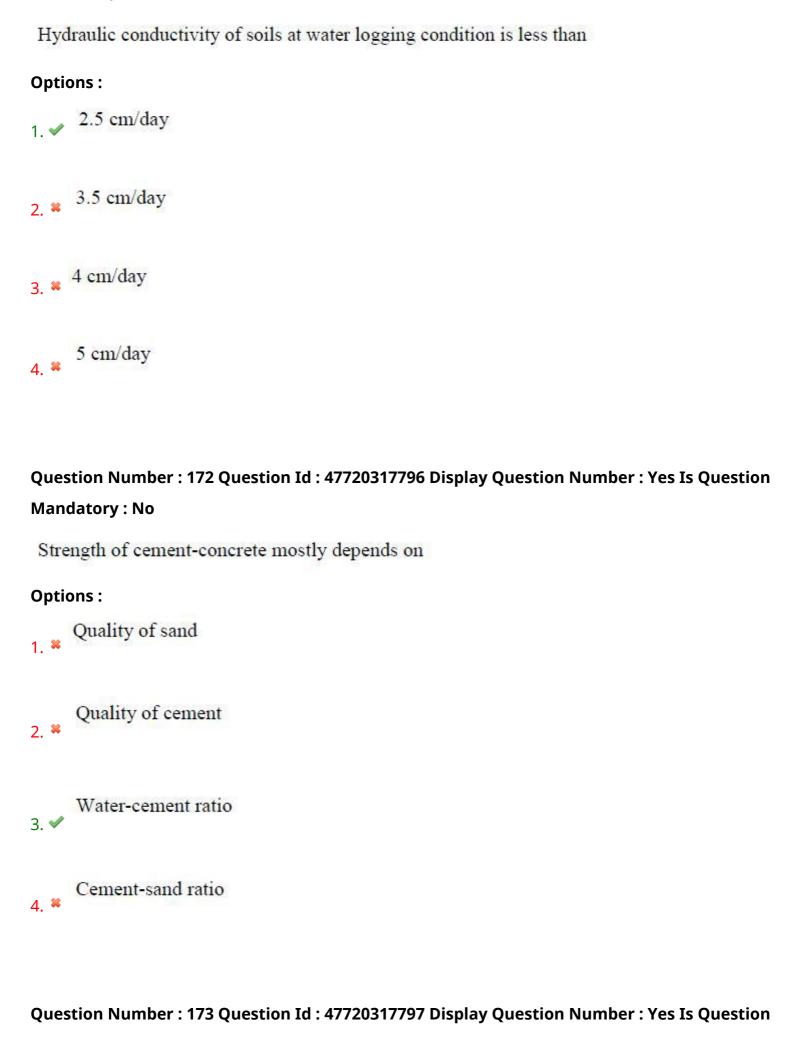
Options:

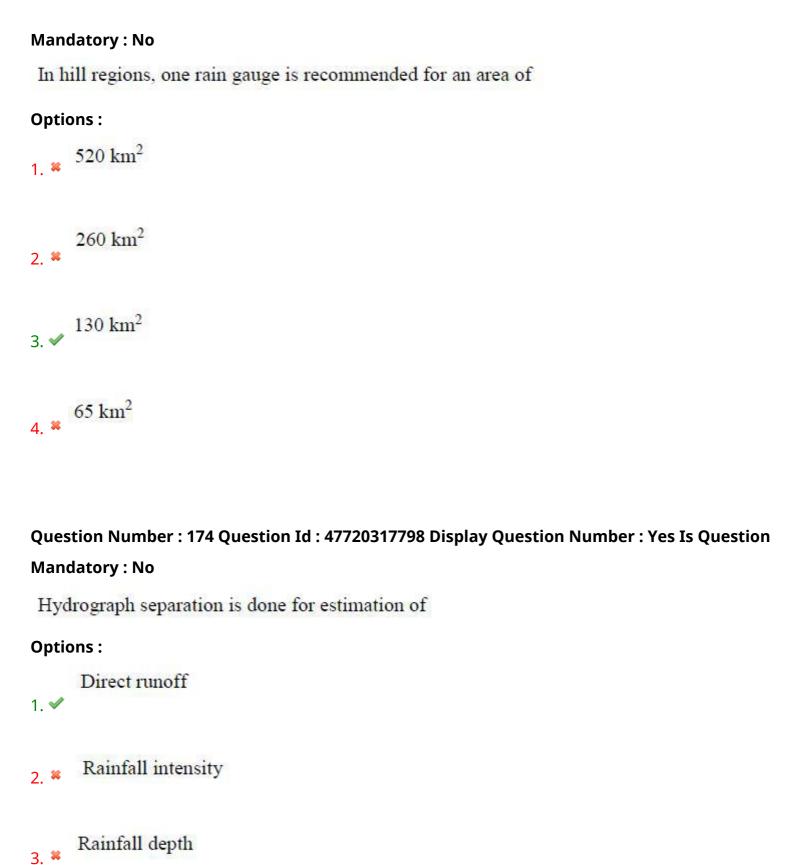
Question Number : 167 Question Id : 47720317791 Display Question Number : Yes Is Question



Most common method of irrigation in India is





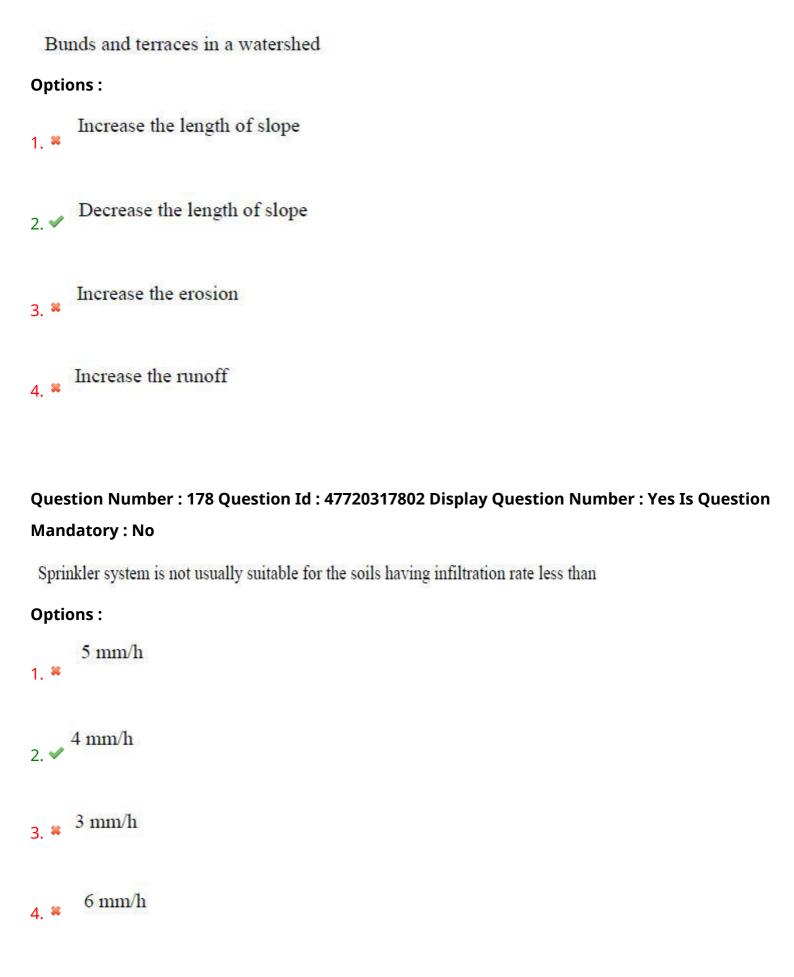


Question Number : 175 Question Id : 47720317799 Display Question Number : Yes Is Question Mandatory : No

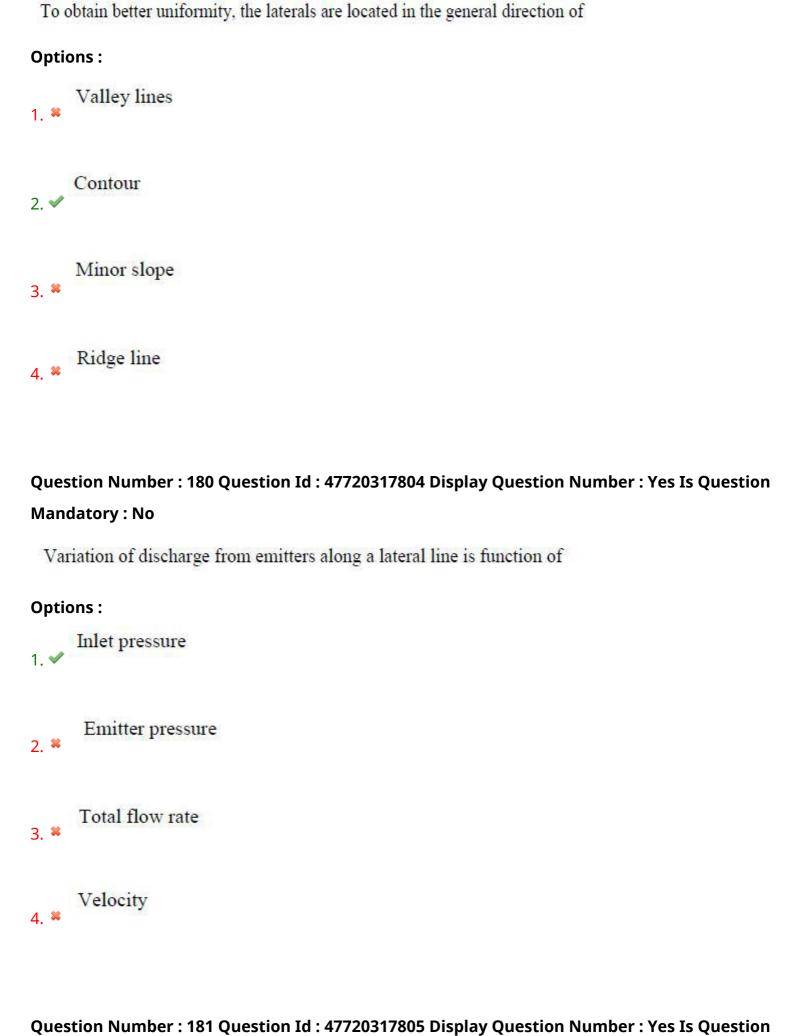
4. * Total runoff

Lysimeter is used to measure Options: Infiltration Evaporation 3. V Evapotranspiration 4. * Vapor pressure Question Number: 176 Question Id: 47720317800 Display Question Number: Yes Is Question Mandatory: No Area under a hydrograph is equal to Options: Depth of runoff Rain depth Volume of runoff 3. ✔ 4. * Intensity

Question Number : 177 Question Id : 47720317801 Display Question Number : Yes Is Question Mandatory : No



Question Number : 179 Question Id : 47720317803 Display Question Number : Yes Is Question Mandatory : No



Mandatory: No

In India, available discharge rate of emitter is

Options:

1. **4** Lph

2. ***** 5 Lph

3. **%** 6 Lph

4. * 7 Lph

Question Number : 182 Question Id : 47720317806 Display Question Number : Yes Is Question Mandatory : No

Number of nozzles for most commonly used sprinkler heads is

Options:

1. **

2. 🗸 2

3. ** 3

4. * 4

Question Number : 183 Question Id : 47720317807 Display Question Number : Yes Is Question

Mechanically operated clutch pedal free movement should be

Options:

Question Number : 184 Question Id : 47720317808 Display Question Number : Yes Is Question Mandatory : No

Differential casing is rigidly attached with

Options:

Crown wheel only

2. * Ring gear only

3. Both Crown wheel and Ring gear

4. * Bevel pinion

Question Number : 185 Question Id : 47720317809 Display Question Number : Yes Is Question

Difference in the distance of the centre lines of the back end and front end of front wheels of a tractor is called as



- Wheel track
- Toe-in 2. ✔
- 3. * Toe-out
- 4. * Ground clearance

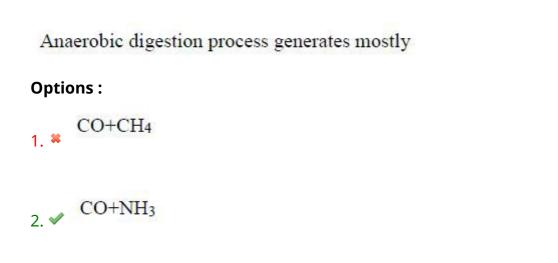
Question Number : 186 Question Id : 47720317810 Display Question Number : Yes Is Question Mandatory : No

Hydraulic pump of a tractor hydraulic system should be developing the oil pressure between

Options:

- 1. 150 to 200 kg/cm²
- 2. * 15 to 20 kg/cm²
- 15 to 200 kg/cm²
- 4. * 150 to 400 kg/cm²

Question Number : 187 Question Id : 47720317811 Display Question Number : Yes Is Question Mandatory : No



CO2+CH4

4. * CO₂+NH₃

Question Number : 188 Question Id : 47720317812 Display Question Number : Yes Is Question Mandatory : No

For using any type of biomass this gasifier is preferred

Options:

1. W Updraft

Downdraft **

3. * Cross draft

4. Fluidized bed

Question Number : 189 Question Id : 47720317813 Display Question Number : Yes Is Question Mandatory : No

Oil content of jatropha seed is (by weight basis)

Options:

Question Number : 190 Question Id : 47720317814 Display Question Number : Yes Is Question Mandatory : No

pH of slurry in the acid formation stage for biogas production is

Options:

4. * 10 and above

Question Number : 191 Question Id : 47720317815 Display Question Number : Yes Is Question

If the sum of all the forces acting on a body is zero, then body may be in equilibrium provided the forces are **Options:** 1. ✓ Concurrent 2. * Parallel Like parallel 4. Wulike parallel Question Number: 192 Question Id: 47720317816 Display Question Number: Yes Is Question Mandatory: No Centre of gravity of a triangle lies at what distance from its base **Options:** 1. ✓ (1/3)h 2. ***** (3/2)h 3. ***** (4/3)h

Question Number : 193 Question Id : 47720317817 Display Question Number : Yes Is Question Mandatory : No

(5/6)h

Law of machine is given by the relation

Options:

Question Number : 194 Question Id : 47720317818 Display Question Number : Yes Is Question Mandatory : No

In a kinematic chain, a quaternary joint is equivalent to

Options:

One binary joint

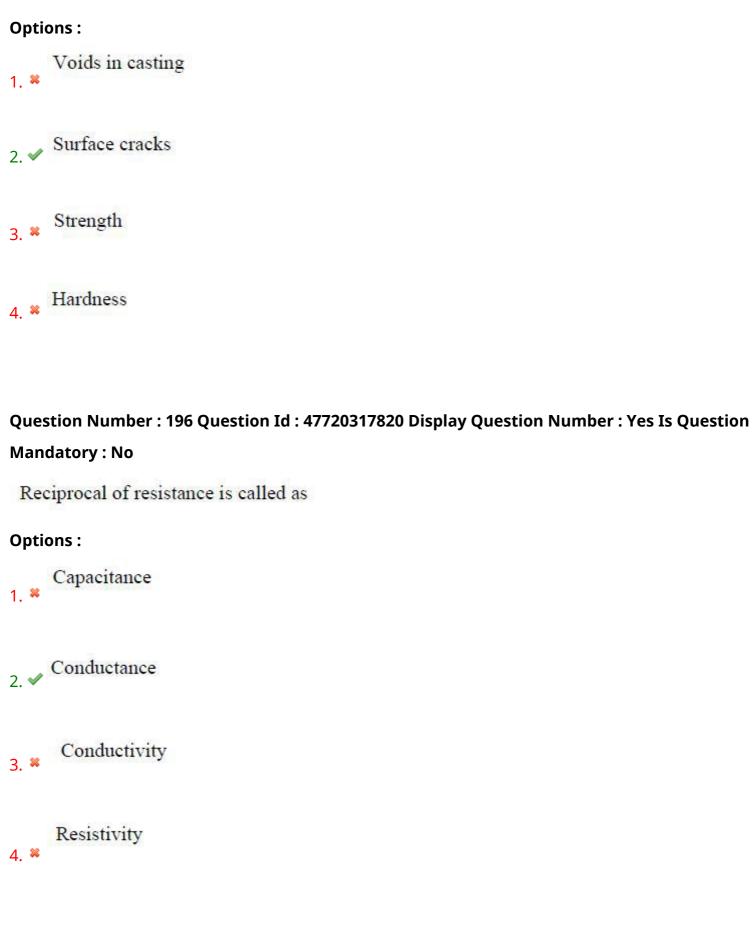
Two binary joints

Three binary joints 3. ✓

Four binary joints

Question Number : 195 Question Id : 47720317819 Display Question Number : Yes Is Question

Liquid penetrant test is used for detecting



Question Number : 197 Question Id : 47720317821 Display Question Number : Yes Is Question Mandatory : No

Material used in dry type finned capacitor is

$\mathbf{\cap}$	nti	<u> </u>	20	•
U	pti	UI	12	•

Ceramic glass

1. 🕷

2. Mica

3. Aluminum

4. * Copper

Question Number : 198 Question Id : 47720317822 Display Question Number : Yes Is Question Mandatory : No

Two resistors 10 Ω and 20 Ω are connected in parallel, then the total resistance of the circuit is

Options:

6.60 Ω

0.15 Ω

30 Ω

4. * 15 Ω

Question Number : 199 Question Id : 47720317823 Display Question Number : Yes Is Question

Which of the following part is related to 3-phase motor? Options: 1. ✓ Rotor Tube 2. 💥 End rod 4. * Fan Question Number: 200 Question Id: 47720317824 Display Question Number: Yes Is Question Mandatory: No In A.C motor, at full load the rotor speed is usually about (of that of rotating field) Options: 98% 2. 🗸 97% 96%

4. * 95%