

Andhra Pradesh State Council of Higher Education

Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

Question Paper Name :

Agricultural Engineering 06th May 2025
Shift 1

Subject Name :

Agricultural Engineering

Creation Date :

2025-05-06 14:10:29

Duration :

180

Total Marks :

200

Display Marks:

No

Share Answer Key With Delivery Engine :

Yes

Change Font Color :

No

Change Background Color :

No

Change Theme :

No

Help Button :

No

Show Reports :

No

Show Progress Bar :

No

Agricultural Engineering

Group Number :

1

Group Id :

89040181

Group Maximum Duration :

0

Group Minimum Duration :

180

Show Attended Group? :

No

Edit Attended Group? :

No

Break time :

0

Group Marks :

200

Mathematics

Section Id :

890401315

Section Number :

1

Section type :

Online

Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	50
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	890401339
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 89040116013 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the matrix $A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$, then which of the following is true?

Options :

- ✘ *The matrix is invertible*
- ✔ *The matrix is singular*
- ✘ *The matrix is diagonalizable*
- ✘ *The matrix is symmetric.*

Question Number : 2 Question Id : 89040116014 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$, and the determinant of A is 5, then determinant of the matrix $2A$ is

Options :

- ✘ 10
- ✔ 20
- ✘ 5

4. ✖ 25

Question Number : 3 Question Id : 89040116015 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the matrix A is of order 3×3 and the system of equations $AX = B$ has a unique solution, what can be concluded about the determinant of A?

Options :

1. ✖ The determinant of A is zero
2. ✔ The determinant of A is non-zero
3. ✖ The determinant of A must be 1 only
4. ✖ The determinant of A cannot be negative

Question Number : 4 Question Id : 89040116016 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $A = \begin{bmatrix} x & 3 \\ 2 & 4 \end{bmatrix}$ and $A^{-1} = \begin{bmatrix} -2 & 1.5 \\ 1 & -0.5 \end{bmatrix}$ then the value of x is

Options :

1. ✖ -2
2. ✔ 1
3. ✖ 1.5
4. ✖ -0.5

Question Number : 5 Question Id : 89040116017 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 0 \\ 1 & 0 \end{bmatrix}$, then $(AB)^T =$

Options :

1. ✘ $\begin{bmatrix} 0 & 0 \\ 3 & 4 \end{bmatrix}$

2. ✘ $\begin{bmatrix} 0 & 0 \\ 3 & 7 \end{bmatrix}$

3. ✔ $\begin{bmatrix} 3 & 7 \\ 0 & 0 \end{bmatrix}$

4. ✘ $\begin{bmatrix} 3 & 6 \\ 0 & 0 \end{bmatrix}$

Question Number : 6 Question Id : 89040116018 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $\frac{2x+5}{(x-1)(x+3)} = \frac{A}{(x-1)} + \frac{B}{(x+3)}$ then $A+B =$

Options :

1. ✘ -2

2. ✔ 2

3. ✘ 1

4. ✘ -1

Question Number : 7 Question Id : 89040116019 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $\frac{3x-1}{(x-1)(x-2)(x-3)} = \frac{A}{(x-1)} + \frac{B}{(x-2)} + \frac{C}{(x-3)}$ then the values of (A, B, C) are

Options :

1. ✓ (1, -5, 4)
2. ✗ (1, 5, 4)
3. ✗ (4, 5, 1)
4. ✗ (1, 4, 5)

Question Number : 8 Question Id : 89040116020 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $\sin \theta = \frac{3}{5}$, then $\cos \theta =$

Options :

1. ✗ $\frac{4}{5}$ but not $-\frac{4}{5}$
2. ✓ $-\frac{4}{5}$ or $\frac{4}{5}$
3. ✗ $-\frac{4}{5}$ but not $\frac{4}{5}$
4. ✗ $\frac{3}{5}$ but not $-\frac{3}{5}$

Question Number : 9 Question Id : 89040116021 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $\cos \theta \operatorname{cosec} \theta = -1$ and θ lies in the second quadrant then $\cos \theta =$

Options :

1. ✗

$$\frac{-\sqrt{3}}{2}$$

2. ✘ $\frac{\sqrt{2}}{2}$

3. ✔ $-\frac{\sqrt{2}}{2}$

4. ✘ $-\sqrt{2}$

Question Number : 10 Question Id : 89040116022 Question Type : MCQ Option Shuffling : No
 Display Question Number : Yes
 Correct Marks : 1 Wrong Marks : 0

If $5 \sin \theta = 4$ then the value of $\frac{\operatorname{Cosec} \theta - \cot \theta}{\operatorname{Cosec} \theta + \cot \theta}$ is

Options :

1. ✘ $-1/4$

2. ✘ $-1/2$

3. ✘ $1/2$

4. ✔ $1/4$

Question Number : 11 Question Id : 89040116023 Question Type : MCQ Option Shuffling : No
 Display Question Number : Yes
 Correct Marks : 1 Wrong Marks : 0

For real x and if $x + \frac{1}{x} = 2 \cos \theta$ then $\cos \theta$ is

Options :

1. ✔ ± 1

2. ✘ $1/2$

3. ✘ 1

4. ✘ $\pm \frac{1}{2}$

Question Number : 12 Question Id : 89040116024 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$$\sin^6 \theta + \cos^6 \theta + 3\sin^2 \theta \cos^2 \theta =$$

Options :

1. ✘ 0

2. ✔ 1

3. ✘ 2

4. ✘ -1

Question Number : 13 Question Id : 89040116025 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The maximum value of $3 \cos \theta + 4 \sin \theta$ is

Options :

1. ✘ 2

2. ✘ 4

3. ✔ 5

4. ✘ 1

Question Number : 14 Question Id : 89040116026 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $\sin 5x + \sin 3x + \sin x = 0$ then the value of x other than zero lying between $0 \leq x \leq \frac{\pi}{2}$ is

Options :

1. ✘ $\frac{\pi}{6}$

2. ✔ $\frac{\pi}{3}$

3. ✘ $\frac{\pi}{12}$

4. ✘ $\frac{\pi}{4}$

Question Number : 15 Question Id : 89040116027 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The general solution of the equation $\tan^2 x = 1$ is

Options :

1. ✘ $n\pi + \frac{\pi}{4}$ only

2. ✔ $n\pi \pm \frac{\pi}{4}$

3. ✘ $2n\pi \pm \frac{\pi}{4}$

4. ✘ $n\pi - \frac{\pi}{4}$ only

Question Number : 16 Question Id : 89040116028 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The value of $\cos \frac{5\pi}{17} + \cos \frac{7\pi}{17} + 2\cos \frac{11\pi}{17} \cos \frac{\pi}{17}$ is

Options :

1. ✓ 0
2. ✗ 1
3. ✗ -1
4. ✗ $1/2$

Question Number : 17 Question Id : 89040116029 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✗ $\frac{5}{\sqrt{34}}$
2. ✗ $-\frac{5}{\sqrt{34}}$
3. ✗ $-\frac{\sqrt{34}}{25}$
4. ✓ $\frac{\sqrt{34}}{5}$

Question Number : 18 Question Id : 89040116030 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The real part of $\frac{1+2i}{(2-i)^2}$ is

Options :

1. ✓ $-\frac{1}{5}$

2. ✗ $\frac{1}{5}$

3. ✗ $-\frac{2}{5}$

4. ✗ $\frac{2}{5}$

Question Number : 19 Question Id : 89040116031 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Modulus of the complex number $\frac{(1+i)^{10}}{(2i-4)^4}$ is equal to

Options :

1. ✓ $\frac{2}{25}$

2. ✗ $-\frac{2}{25}$

3. ✗ $\frac{1}{25}$

4. ✗ $-\frac{1}{25}$

Question Number : 20 Question Id : 89040116032 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a circle with center O, a 6cm long chord is at a distance 4 cm from the center.

Then the length of diameter is

Options :

1. ✘ 5 cm
2. ✔ 10 cm
3. ✘ 15 cm
4. ✘ 8 cm

Question Number : 21 Question Id : 89040116033 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

The length of the tangent from the point (5, 1) to the circle $x^2 + y^2 + 6x - 4y - 3 = 0$ is

Options :

1. ✘ 81
2. ✔ 7
3. ✘ 29
4. ✘ 21

Question Number : 22 Question Id : 89040116034 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

If length of the tangent is 8 cm and the distance between the center of the circle and the external point is 11 cm, then the area of the circle is

Options :

1. ✘ 100 cm
2. ✘ 197.14 cm

3. ✓ 179.14 cm

4. ✗ 110.14 cm

Question Number : 23 Question Id : 89040116035 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The equation of the parabola with focus (2, 0) and vertex (1, 0) is

Options :

1. ✗ $y^2 = 4x$

2. ✓ $y^2 = 4x - 4$

3. ✗ $y^2 = 4(x + 1)$

4. ✗ $y^2 = -4(x - 1)$

Question Number : 24 Question Id : 89040116036 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

If (2,0) is the vertex and y-axis is the directrix of a parabola then its focus is

Options :

1. ✗ (2, 0)

2. ✗ (-2, 0)

3. ✓ (4, 0)

4. ✗ (-4, 0)

Question Number : 25 Question Id : 89040116037 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The *eccentricity* of the ellipse $16x^2 + 7y^2 = 112$ is

Options :

1. ✘ $\frac{4}{3}$

2. ✘ $\frac{7}{16}$

3. ✘ $\frac{3}{\sqrt{7}}$

4. ✔ $\frac{3}{4}$

Question Number : 26 Question Id : 89040116038 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The value of $\lim_{n \rightarrow \infty} \frac{4x^3 - x + 1}{x^2 - 4x(1 - x^2)} =$

Options :

1. ✘ 0

2. ✔ 1

3. ✘ -1

4. ✘ ∞

Question Number : 27 Question Id : 89040116039 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The value of $\lim_{x \rightarrow 1} \left(\frac{x^3 - 1}{x - 1} \right)$ is

Options :

1. ✘ 0
2. ✘ 1
3. ✔ 3
4. ✘ Limit does not exist

Question Number : 28 Question Id : 89040116040 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The derivative of x^x with respect to x is

Options :

1. ✘ $x^x(x + \log x)$
2. ✘ $x^x(x - \log x)$
3. ✘ $x^x(1 - \log x)$
4. ✔ $x^x(1 + \log x)$

Question Number : 29 Question Id : 89040116041 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\frac{d}{dx} \left(\tan^{-1} \frac{x}{a} \right) =$

Options :

1. ✘ $\frac{a}{a^2-x^2}$

2. ✘ $\frac{1}{a^2+x^2}$

3. ✘ $\frac{1}{a^2-x^2}$

4. ✔ $\frac{a}{a^2+x^2}$

Question Number : 30 Question Id : 89040116042 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $y = \sqrt{\sin x + \sqrt{\sin x + \sqrt{\sin x + \dots \infty}}}$ then $\frac{dy}{dx} =$

Options :

1. ✘ $\frac{\cos x}{1-2y}$

2. ✘ $\frac{\sin x}{1-2y}$

3. ✘ $\frac{-\sin x}{1-2y}$

4. ✔ $\frac{-\cos x}{1-2y}$

Question Number : 31 Question Id : 89040116043 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Slope of the normal to the curve $x^{2/3} + y^{2/3} = 2$ at the point (1, 1) is

Options :

1. ✘ -1

2. ✔ 1

3. ✘ $1/2$

4. ✘ $-1/2$

Question Number : 32 Question Id : 89040116044 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The equation of the tangent to the curve $y = x^3$ at $(1, 1)$ is

Options :

1. ✘ $3x - y + 2 = 0$

2. ✘ $x - 10y - 50 = 0$

3. ✔ $3x - y - 2 = 0$

4. ✘ $x - 10y + 50 = 0$

Question Number : 33 Question Id : 89040116045 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For what value of x , the function $2x^3 + 3x^2 - 36x + 10$ has minimum

Options :

1. ✘ -2

2. ✘ -3

3. ✔

4. ✘ 1

Question Number : 34 Question Id : 89040116046 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $z = x^2 - y^2$ then $\frac{1}{x} \frac{\partial z}{\partial x} + \frac{1}{y} \frac{\partial z}{\partial y} =$

Options :

1. ✘ 1

2. ✘ $2x + 2y$

3. ✔ 0

4. ✘ $2x - 2y$

Question Number : 35 Question Id : 89040116047 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $u = e^{xy}$, then the value of $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2}$ at (1, 1) is

Options :

1. ✘ e

2. ✔ $2e$

3. ✘ 1

4. ✘ 0

Question Number : 36 Question Id : 89040116048 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The value of $\int (\log \sec x) \tan x \, dx$ is

Options :

1. ✘ $\sec x + c$

2. ✘ $\log \sec x + c$

3. ✔ $\frac{1}{2} (\log \sec x)^2 + c$

4. ✘ $\log (\log \sec x)$

Question Number : 37 Question Id : 89040116049 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\int \sin^2 x \, dx =$

Options :

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

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

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

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

Question Number : 38 Question Id : 89040116050 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$$\int \frac{dx}{25-x^2} =$$

Options :

1. ✘ $\frac{1}{5} \log \left| \frac{x-5}{x+5} \right| + c$

2. ✘ $\frac{1}{5} \log \left| \frac{x+5}{x-5} \right| + c$

3. ✔ $\frac{1}{10} \log \left| \frac{5+x}{5-x} \right| + c$

4. ✘ $\frac{1}{10} \log \left| \frac{5-x}{5+x} \right| + c$

Question Number : 39 Question Id : 89040116051 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The value of $\int_0^1 x(1-x)^9 dx$ is

Options :

1. ✔ $\frac{1}{110}$

2. ✘ $\frac{1}{120}$

3. ✘ $\frac{-1}{110}$

4. ✘ $\frac{-1}{120}$

Question Number : 40 Question Id : 89040116052 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$$\int_{-a}^a |x| dx =$$

Options :

1. ✘ a
2. ✘ $2a$
3. ✘ 0
4. ✔ a^2

Question Number : 41 Question Id : 89040116053 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$$\int_0^{\pi/2} \frac{\cos 2x}{\sin x + \cos x} dx =$$

Options :

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

Question Number : 42 Question Id : 89040116054 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The area bounded by the curve $y = 4x^2$, the x-axis, the line $x=0$ and the line $x = 1$ is

Options :

1. ✘ 2

2. ✘ $\frac{2}{3}$

3. ✘ $\frac{1}{3}$

4. ✔ $\frac{4}{3}$

Question Number : 43 Question Id : 89040116055 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The RMS value of x^2 in $[0, 1]$ is

Options :

1. ✔ $\frac{1}{\sqrt{5}}$

2. ✘ $\frac{1}{5}$

3. ✘ $\frac{1}{\sqrt{3}}$

4. ✘ $\frac{1}{3}$

Question Number : 44 Question Id : 89040116056 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The degree of the differential equation $y' + y = \frac{5}{y'}$ is

Options :

1. ✘ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Question Number : 45 Question Id : 89040116057 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

The order of the differential equation whose general solution is $y = a \sin x + b \cos x$ is

(where a and b are arbitrary constants)

Options :

1. ✔ 2

2. ✖ 4

3. ✖ 1

4. ✖ 3

Question Number : 46 Question Id : 89040116058 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

The differential equation $\frac{dy}{dx} = -\left(\frac{x+y}{1+x^2}\right)$ is

Options :

1. ✖ of Variable separable form

2. ✔ First order Linear equation

3. ✖ Homogeneous

4. ✖ Exact differentia Equation

Question Number : 47 Question Id : 89040116059 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The solution of the differential equation $\frac{dy}{dx} = 1 + y^2$ is

Options :

1. ✘ $y = \tan x + c$
2. ✔ $y = \tan (x + c)$
3. ✘ $y = \tan x$
4. ✘ $y = -\tan (x + c)$

Question Number : 48 Question Id : 89040116060 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The solution of the differential equation $\frac{dy}{dx} + \frac{y}{x} = x^2$ under the condition that $y(1) = 1$ is

Options :

1. ✘ $4xy = x^3 + 3$
2. ✔ $4xy = x^4 + 3$
3. ✘ $4xy = x^3 - 3$
4. ✘ $4xy = x^4 - 3$

Question Number : 49 Question Id : 89040116061 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The solution of the differential equation $\frac{d^3y}{dx^3} + 3\frac{d^2y}{dx^2} + 2\frac{dy}{dx} = 0$ is

Options :

1. ✓ $y = a + be^{-x} + ce^{-2x}$

2. ✗ $y = a + be^x + ce^{2x}$

3. ✗ $y = ae^{-x} + be^{-2x} + ce^x$

4. ✗ $y = a + be^{-2x} + ce^{-3x}$

Question Number : 50 Question Id : 89040116062 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The particular integral of $\frac{d^2y}{dx^2} + 3\frac{dy}{dx} + 2y = e^{-2x}$ is

Options :

1. ✓ $-xe^{-2x}$

2. ✗ xe^{-2x}

3. ✗ $-\frac{x}{2}e^{-2x}$

4. ✗ $\frac{x}{2}e^{-2x}$

Physics

Section Id :	890401316
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory

Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	890401340
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 89040116063 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

If we choose velocity V , length L and force F as fundamental physical quantities then how would you express power in terms of V , L and F ?

Options :

1. ✓ $F^1 L^0 V^1$
2. ✗ $F^1 L^{-1} V^1$
3. ✗ $F^1 L^{-1} V^2$
4. ✗ $F^1 L^{-2} V^3$

Question Number : 52 Question Id : 89040116064 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Which pair of physical quantities have same dimensional formula

Options :

1. ✗ Torque and momentum
2. ✗ Surface tension and tension
3. ✓ Pressure and modulus of elasticity
4. ✗ Force constant and Planck's constant

Question Number : 53 Question Id : 89040116065 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $A + B = C$ and $A^2 + B^2 = C^2$ then the angle between vectors A and B is

Options :

1. ✘ 0°
2. ✘ 60°
3. ✔ 90°
4. ✘ 120°

Question Number : 54 Question Id : 89040116066 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The area of rectangle with sides as $A = 3i + 4j$ and $B = i + 3j$ is

Options :

1. ✔ $5\sqrt{10}$ units
2. ✘ 10 units
3. ✘ $2\sqrt{10}$ units
4. ✘ $10\sqrt{5}$ units

Question Number : 55 Question Id : 89040116067 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If a pebble is thrown vertically upwards from the top of a tower with velocity 5 m/s. It strikes the ground after 3 seconds. With what velocity the pebble strikes the ground? (take $g = 10 \text{ ms}^{-2}$)

Options :

1. ✘ 10 m/s
2. ✘ 20 m/s
3. ✔ 25 m/s
4. ✘ 30 m/s

Question Number : 56 Question Id : 89040116068 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If a body released from the top of a tower of height H meter takes T seconds to reach the ground , where is the body at time T/2 seconds from the ground ?

Options :

1. ✘ $\frac{H}{2}$
2. ✘ $\frac{H}{4}$
3. ✔ $\frac{3H}{4}$
4. ✘ $\frac{2H}{3}$

Question Number : 57 Question Id : 89040116069 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A body starts from rest and travels with uniform acceleration. If the distance covered in first 2 seconds is 'x' and next 2 seconds is 'y', then

Options :

1. ✘ $y = x$
2. ✘ $y = 2x$
3. ✔ $y = 3x$
4. ✘ $y = 4x$

Question Number : 58 Question Id : 89040116070 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A juggler throws ball into air. He throws one whenever the previous one is at its highest point. How high do the balls rise if he throws n balls each second ?

Options :

1. ✔ $\frac{g}{2n^2}$
2. ✘ $\frac{g}{n}$
3. ✘ $\frac{g}{2n}$
4. ✘ $\frac{n^2}{g}$

Question Number : 59 Question Id : 89040116071 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A block of mass m is lying on an inclined plane. The coefficient of friction between the plane and the block is μ . The force required to move the block up the inclined plane will be

Options :

1. ✘ $mg \sin \theta - \mu mg \cos \theta$
2. ✔ $mg \sin \theta + \mu mg \cos \theta$
3. ✘ $mg \cos \theta - \mu mg \sin \theta$
4. ✘ $mg \cos \theta + \mu mg \sin \theta$

Question Number : 60 Question Id : 89040116072 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The time taken by a body to slide down the smooth inclined plane is 4sec. The time taken by a body to slide $1/4^{\text{th}}$ of the length of the plane is

Options :

1. ✘ 1 sec
2. ✔ 2 sec
3. ✘ 3 sec
4. ✘ 0.5 sec.

Question Number : 61 Question Id : 89040116073 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A body of mass 2 Kg changes its velocity from $(3 \mathbf{i} - 4 \mathbf{j})$ m/s to $(6 \mathbf{j} - 2 \mathbf{k})$ m/s.

what is the change in kinetic energy of the body?

Options :

1. ✓ 15 J
2. ✗ 12 J
3. ✗ 18 J
4. ✗ 20 J

Question Number : 62 Question Id : 89040116074 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

At her maximum height a girl in a swing is 3m above the ground and at the lowest point she is 2m above the ground. Her maximum velocity is

Options :

1. ✗ $\sqrt{29.4}$ m/s
2. ✗ $\sqrt{9.8}$ m/s
3. ✓ $\sqrt{19.6}$ m/s
4. ✗ 9.8 m/s

Question Number : 63 Question Id : 89040116075 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

An engine delivers 1000 watt of power with 80% efficiency. The input power is

Options :

1. ✘ 800 W
2. ✘ 1000 W
3. ✔ 1250 W
4. ✘ 1500 W

Question Number : 64 Question Id : 89040116076 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If a seconds pendulum on the earth is taken to a planet whose gravity is half of the gravity on earth , its time period on that planet is

Options :

1. ✘ 2 sec
2. ✘ 4 sec
3. ✘ $4\sqrt{2}$ sec
4. ✔ $2\sqrt{2}$ sec

Question Number : 65 Question Id : 89040116077 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The amplitude of a simple harmonic oscillator is A. When the velocity of particle is half of its maximum velocity, then its position is at

Options :

1. ✘ $\frac{A}{2}$
2. ✘

$$\frac{\sqrt{3} A}{4}$$

3. ✘ $\frac{A}{4}$

4. ✔ $\frac{\sqrt{3} A}{2}$

Question Number : 66 Question Id : 89040116078 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The displacement of a particle executing SHM is $x = 3 \sin 2t + 4 \cos 2t$.

The amplitude of particle is

Options :

1. ✘ 7

2. ✘ 3

3. ✘ 4

4. ✔ 5

Question Number : 67 Question Id : 89040116079 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The beats are produced by two sound sources of same amplitude and of nearly equal frequencies. The maximum intensity of beats will be _____ when compared to that of one source is

Options :

1. ✘ Same

2. ✘ Double

3. ✓ Four times

4. ✗ Eight times

Question Number : 68 Question Id : 89040116080 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A siren emitting sound of frequency 800 Hz is going away from a static listener with a speed of 30 m/s. Frequency of sound heard by the listener is
(Velocity of sound in air = 340 m/s)

Options :

1. ✗ 286.5 Hz

2. ✗ 418.2 Hz

3. ✓ 733.3 Hz

4. ✗ 644.5 Hz

Question Number : 69 Question Id : 89040116081 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

During the melting of a slab of ice at 273K at atmospheric pressure

Options :

1. ✗ Positive work is done by the ice-water system on the atmosphere

2. ✓ Positive work is done on the ice-water system by the atmosphere

3. ✗ Negative work is done on the ice-water system by the atmosphere

4. ✗ The internal energy of the ice-water system decreases

Question Number : 70 Question Id : 89040116082 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A gas is compressed at a constant pressure of 50 N/m^2 from a volume of 10 m^3 to a volume of 4 m^3 . Energy of 100 J is then added to the gas by heating. Its internal energy is

Options :

1. ✓ Increases by 400 J
2. ✗ Increases by 200 J
3. ✗ Increases by 100 J
4. ✗ Decreases by 200 J

Question Number : 71 Question Id : 89040116083 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A vessel containing 10 liters of an ideal gas at a pressure of 760 mm of Hg is connected to an evacuated 9 liter vessel. The resultant pressure is

Options :

1. ✓ 400 mm of Hg
2. ✗ 1440 mm of Hg
3. ✗ 40 mm of Hg
4. ✗ 760 mm of Hg

Question Number : 72 Question Id : 89040116084 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A sealed glass jar is full of water. When its temperature is decreased to 0°C

Options :

1. ✘ The glass jar remains as it is with ice
2. ✘ The glass jar remains as it is with water
3. ✘ Glass jar contains half the amount of ice mixed with water
4. ✔ The glass jar breaks due to the formation of ice

Question Number : 73 Question Id : 89040116085 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A bubble rises from the bottom of a lake 90 m deep on reaching the surface, its volume becomes (Atmospheric pressure is 10 m of water)

Options :

1. ✘ 4 times
2. ✘ 8 times
3. ✔ 10 times
4. ✘ 3 times

Question Number : 74 Question Id : 89040116086 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

An endoscope is employed by a physician to view the internal parts of a body organ. It is based on the principle of

Options :

1. ✘ Refraction
2. ✘ Reflection
3. ✘ Dispersion
4. ✔ Total internal reflection

Question Number : 75 Question Id : 89040116087 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Light of wavelength 5000 \AA falls on a sensitive plate with photo electric work function of 1.9 eV . The kinetic energy of the emitted photoelectron will be

Options :

1. ✔ 0.58 eV
2. ✘ 2.48 eV
3. ✘ 1.24 eV
4. ✘ 1.16 eV

Chemistry

Section Id :	890401317
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	890401341

Question Number : 76 Question Id : 89040116088 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the elements with atomic numbers $Z = 1$ to $Z=20$. The number of elements with only one unpaired electron in their ground state is

Options :

1. ✘ 10
2. ✘ 6
3. ✔ 8
4. ✘ 12

Question Number : 77 Question Id : 89040116089 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify the orbital which has lobes not orienting on the axis

Options :

1. ✘ P_x
2. ✘ P_y
3. ✘ $d_{x^2-y^2}$
4. ✔ d_{yz}

Question Number : 78 Question Id : 89040116090 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If n , l , m and s represent the symbols of quantum numbers, the impossible

quantum number set for the electron in terms of n , l , m and s respectively is

Options :

1. ✓ 2, 0, -1, +1/2

2. ✗ 3, 0, 0, -1/2

3. ✗ 4, 1, +1, +1/2

4. ✗ 3, 2, -1, -1/2

Question Number : 79 Question Id : 89040116091 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Consider the elements with atomic numbers $Z = 8, 9, 11, 19$ and 20 . The number

of ionic compounds possible with the elements having these atomic numbers is

Options :

1. ✓ 6

2. ✗ 5

3. ✗ 10

4. ✗ 8

Question Number : 80 Question Id : 89040116092 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In which of the molecules lone pair, bond pair of electrons ratio is 2:3 ?

Options :

1. ✘ Cl_2

2. ✘ O_2

3. ✘ HCl

4. ✔ N_2

Question Number : 81 Question Id : 89040116093 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

How many moles of urea is present in 250 ml of 0.2 M solution of it?

Options :

1. ✘ 0.03

2. ✘ 0.04

3. ✔ 0.05

4. ✘ 0.06

Question Number : 82 Question Id : 89040116094 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

x ml of 0.1 M NaOH solution is diluted with distilled water to get 250 ml of 0.01 M solution.

The value of x (in ml) is

Options :

1. ✘ 12.5

2. ✔ 25

3. ✘ 37.5

4. ✘ 50

Question Number : 83 Question Id : 89040116095 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

3×10^{22} molecules of Na_2CO_3 (molecular weight = 106) present in 500 ml of solution.

The normality of the solution formed is ($N = 6 \times 10^{23} \text{ mol}^{-1}$)

Options :

1. ✘ 0.1 N

2. ✔ 0.2 N

3. ✘ 0.4 N

4. ✘ 0.05 N

Question Number : 84 Question Id : 89040116096 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify the pair containing only Lewis acids

Options :

1. ✔ BF_3, NH_3

2. ✘ H^+, BF_3

3. ✘ $\text{F}^-, \text{H}_2\text{O}$

4. ✘ $\text{NH}_4^+, \text{NH}_3$

Question Number : 85 Question Id : 89040116097 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

4 g of NaOH is dissolved in 1.0 L solution. The pH of solution is

Options :

1. ✓ 13

2. ✗ 1

3. ✗ 12

4. ✗ 7.4

Question Number : 86 Question Id : 89040116098 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Number of coulombs corresponding to 1 mol of electrons approximately is equal to

Options :

1. ✗ 1.93×10^5

2. ✓ 9.65×10^4

3. ✗ 1.93×10^4

4. ✗ 9.65×10^5

Question Number : 87 Question Id : 89040116099 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Aqueous solution of which of the following does not act as electrolyte?

Options :

1. ✓ Urea
2. ✗ Copper Sulphate
3. ✗ Silver Nitrate
4. ✗ Sodium Chloride

Question Number : 88 Question Id : 89040116100 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The amount of silver (in mg) deposited when 9.65 coulombs of electricity is passed through an aqueous solution of silver nitrate is ($A_g=108$ u) ($1F=96500$ C mol⁻¹)

Options :

1. ✗ 16.2
2. ✗ 21.2
3. ✓ 10.8
4. ✗ 6.4

Question Number : 89 Question Id : 89040116101 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The standard electrode potentials of Zn, Ag and Cu are -0.76, +0.80 and +0.34 V respectively. Identify the correct statement from the following.

Options :

1. ✗ Ag can oxidize Zn and Cu

2. ✘ Ag can reduce Zn^{2+} and Cu^{2+}
3. ✔ Zn can reduce Ag^+ and Cu^{2+}
4. ✘ Cu can oxidize Zn and Ag

Question Number : 90 Question Id : 89040116102 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In the removal of permanent hardness of water by permutit process, Na^+ ions of permutit are exchanged with which ions of water ?

Options :

1. ✘ K^+ , Ba^{2+}
2. ✘ Fe^{2+} , K^+
3. ✔ Ca^{2+} , Mg^{2+}
4. ✘ Zn^{2+} , Cu^{2+}

Question Number : 91 Question Id : 89040116103 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the degree of hardness (in ppm) of a sample containing 19 mg of MgCl_2 (Molecular Weight = 95) in 2 kg water sample?
(express it in terms of equivalents of CaCO_3)

Options :

1. ✔ 10
2. ✘ 20

3. ✖ 30

4. ✖ 40

Question Number : 92 Question Id : 89040116104 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Identify the pair of chlorides responsible for permanent hardness of water.

Options :

1. ✖ NaCl, KCl

2. ✖ CaCl₂, KCl

3. ✖ AlCl₃, MgCl₂

4. ✔ MgCl₂, CaCl₂

Question Number : 93 Question Id : 89040116105 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The cell formed in bent pipes is an example of

Options :

1. ✖ Concentration Cell

2. ✖ Composition Cell

3. ✔ Stress Cell

4. ✖ Electrolytic Cell

Question Number : 94 Question Id : 89040116106 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Tarnishing of silver is due to formation of

Options :

1. ✘ Its sulphate layer
2. ✘ Its nitrate layer
3. ✔ Its sulphide layer
4. ✘ Its chloride layer

Question Number : 95 Question Id : 89040116107 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a co-polymer?

Options :

1. ✘ Buna-S rubber
2. ✔ Neoprene rubber
3. ✘ Bakelite
4. ✘ Urea – Formaldehyde

Question Number : 96 Question Id : 89040116108 Question Type : MCQ Option Shuffling : No

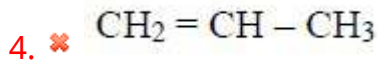
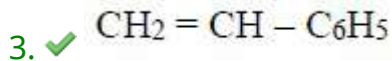
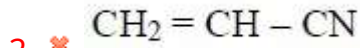
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The monomer involved in the formation of polystyrene is

Options :

1. ✘ $\text{CH}_2 = \text{CH} - \text{Cl}$



Question Number : 97 Question Id : 89040116109 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

We can overcome the undesirable properties of natural rubber by heating natural rubber with

Options :

1. ✘ Carbon

2. ✔ Sulphur

3. ✘ Phosphorus

4. ✘ Silicon

Question Number : 98 Question Id : 89040116110 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Liquefied petroleum gas (LPG) mainly contains

Options :

1. ✘ Methane, Ethane

2. ✘ Ethane, Propane

3. ✔ Butane, Isobutane

4. ✘ Ethene, Ethyne

Question Number : 99 Question Id : 89040116111 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Greenhouse effect is caused by

Options :

1. ✘ NO₂

2. ✘ CO

3. ✘ NO

4. ✔ CO₂

Question Number : 100 Question Id : 89040116112 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which compound is mainly responsible for the depletion of ozone layer?

Options :

1. ✘ CO₂

2. ✘ CH₄

3. ✘ CH₃OH

4. ✔ CF₂Cl₂

Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	890401342
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 89040116113 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

Which of the following equipment is used for the determination of specific gravity of granular agricultural materials?

Options :

1. ✘ Distillation unit
2. ✘ Platform scale
3. ✔ Pycnometer
4. ✘ Particle analyzer

Question Number : 102 Question Id : 89040116114 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

In pneumatic conveying and separation processes, the material is lifted only when the air velocity is greater than its

Options :

1. ✘ Drag coefficient
2. ✘ Bulk density

3. ✘ Angle of repose

4. ✔ Terminal velocity

Question Number : 103 Question Id : 89040116115 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

The friction forces existing between the surfaces in relative motion is known as

Options :

1. ✘ Static friction

2. ✘ Angle of Repose

3. ✔ Kinetic friction

4. ✘ Rolling resistance

Question Number : 104 Question Id : 89040116116 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

The Newton's law of viscosity and a simple dashpot represent rheological model for

Options :

1. ✘ St. Venant body

2. ✘ Hookean body

3. ✘ Non Newtonian liquid

4. ✔ Newtonian liquid

Question Number : 105 Question Id : 89040116117 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The ability of a screen in closely separating the feed into overflow and underflow

according to its size is known as

Options :

1. ✘ Ideal screen
2. ✔ Screen effectiveness
3. ✘ Rotary screen
4. ✘ Screening

Question Number : 106 Question Id : 89040116118 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The shape of a unit hydrograph depends on

Options :

1. ✘ Rainfall intensity only
2. ✔ Catchment characteristics
3. ✘ Only the duration of rainfall
4. ✘ Wind speed

Question Number : 107 Question Id : 89040116119 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Inflation pressure of front wheel tyre of tractor ranges from ____ kg/cm²

Options :

1. ✘ 0.8 – 1.2
2. ✘ 0.8 – 1.5
3. ✘ 1.2 – 2.0
4. ✔ 1.5 – 2.5

Question Number : 108 Question Id : 89040116120 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

It is the relative movement of the wheel or track in the direction of travel for a given distance under load and at no load condition is known as

Options :

1. ✘ Rolling resistance
2. ✘ Rim pull
3. ✔ Wheel slip
4. ✘ Tractive efficiency

Question Number : 109 Question Id : 89040116121 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The oil pressure in the hydraulic pump of the tractor varies from

Options :

1. ✘ 70 to 80 kg/cm²
2. ✘ 100 to 120 kg/cm²

3. ✓ 150 to 200 kg/cm²

4. ✗ 200 to 250 kg/cm²

Question Number : 110 Question Id : 89040116122 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following equipment/machinery best suited for puddling operation in paddy ?

Options :

1. ✗ Tractor with cage wheels

2. ✗ Walking type tractor with rotary tiller

3. ✗ Crawler tractor

4. ✓ Tractor with rotavator

Question Number : 111 Question Id : 89040116123 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

On an average, a woman agricultural worker develops nearly _____ power for an 8-10 hours work per day.

Options :

1. ✗ 55W

2. ✓ 60W

3. ✗ 70W

4. ✗ 75W

Question Number : 112 Question Id : 89040116124 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A medium size bullock can develop power in the range of

Options :

1. ✘ 100-150W
2. ✘ 150-200W
3. ✘ 250-300W
4. ✔ 360-550W

Question Number : 113 Question Id : 89040116125 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The instrument which measures total or global radiation over a hemispherical field of view is

Options :

1. ✔ Pyranometer
2. ✘ Pyrhelimeter
3. ✘ Solarimeter
4. ✘ Sunshine recorder

Question Number : 114 Question Id : 89040116126 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A natural or artificial body of water for collecting and absorbing solar radiation energy and storing it as heat is known as

Options :

1. ✘ Solar cell
2. ✘ Solar collector
3. ✘ Solar still
4. ✔ Solar pond

Question Number : 115 Question Id : 89040116127 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In Trombe wall arrangement of thermal storage wall design, the distance between glazing and concrete wall is

Options :

1. ✔ 10 to 20 cm
2. ✘ 20 to 30 cm
3. ✘ 30 to 40 cm
4. ✘ 40 to 50 cm

Question Number : 116 Question Id : 89040116128 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following windmill has good power coefficient, high starting torque and low cost ?

Options :

1. ✘ Horizontal axis single blade type
2. ✔

Horizontal axis multibladed type

3. ✘ Sail type

4. ✘ Darrieus type

Question Number : 117 Question Id : 89040116129 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The self starting wind mill is

Options :

1. ✔ Darrieus rotor wind mill

2. ✘ Savonius rotor wind mill

3. ✘ Turbine tower wind mill

4. ✘ Dutch type horizontal axis wind mill

Question Number : 118 Question Id : 89040116130 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The biomass gasifier is most versatile and any biomass (including sewage sludge; pulping effluents) can be gasified by

Options :

1. ✘ Up draught gasifier

2. ✘ Down-draught gasifier

3. ✘

4. ✓ Fluidized bed gasifier

Question Number : 119 Question Id : 89040116131 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The process which produces high quality fuel with very low ash content (2-5 %) is

Options :

1. ✗ Gasification

2. ✓ Briquetting

3. ✗ Extrusion

4. ✗ Pelleting

Question Number : 120 Question Id : 89040116132 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The biogas production starts falling very steeply when the temperature is below

Options :

1. ✗ 35°C

2. ✗ 30°C

3. ✗ 25°C

4. ✓ 20°C

Question Number : 121 Question Id : 89040116133 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The temperature at which an oil starts to solidify is known as

Options :

1. ✘ Flash point
2. ✔ Cloud point
3. ✘ Pour point
4. ✘ Aniline point

Question Number : 122 Question Id : 89040116134 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Ethanol is a much more superior fuel for diesel engines as its cetane number is

Options :

1. ✔ 8
2. ✘ 10
3. ✘ 12
4. ✘ 14

Question Number : 123 Question Id : 89040116135 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The process which involves both heat and mass transfer operations simultaneously is

Options :

1. ✘ Milling

2. ✓ Drying
3. ✗ Size reduction
4. ✗ Decortication

Question Number : 124 Question Id : 89040116136 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The dryer used for drying of parboiled paddy is

Options :

1. ✓ LSU dryer
2. ✗ Sack dryer
3. ✗ Vacuum dryer
4. ✗ Bin dryer

Question Number : 125 Question Id : 89040116137 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The purpose of steaming in paddy parboiling process is

Options :

1. ✗ Hydration
2. ✗ Drying
3. ✓ Starch gelatinization

4. ✘ Starch retrogradation

Question Number : 126 Question Id : 89040116138 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The size reduction mill where the grains are rubbed between the grooved flat faces of rotating circular disks is

Options :

1. ✘ Colloid mill
2. ✘ Ball mill
3. ✘ Hammer mill
4. ✔ Attrition mill

Question Number : 127 Question Id : 89040116139 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The peripheral surface speed of faster roll in rubber-roll sheller is

Options :

1. ✘ 8 to 10m/s
2. ✔ 10 to 13m/s
3. ✘ 13 to 16m/s
4. ✘ 16 to 20m/s

Question Number : 128 Question Id : 89040116140 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The storage structures that are used for storing different varieties of grain are

Options :

1. ✓ Cylindrical grain bins
2. ✗ Rectangular grain bins
3. ✗ Pusa grain bins
4. ✗ Silos

Question Number : 129 Question Id : 89040116141 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The capacity of a power operated groundnut decorticator is

Options :

1. ✗ 1000 to 1500 kg/h
2. ✓ 1875 to 2000 kg/h
3. ✗ 2000 to 2500 kg/h
4. ✗ 2500 to 3000 kg/h

Question Number : 130 Question Id : 89040116142 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The percentage of un-threshed grains from all outlets with respect to total grain input in the
thresher by weight is called

Options :

1. ✓ cylinder loss
2. ✘ Blower loss
3. ✘ Sieve loss
4. ✘ Visible damage loss

Question Number : 131 Question Id : 89040116143 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The separator used specially for removing dissimilar material like wheat, rye, mustard, barley from oats is

Options :

1. ✘ Cylinder separator
2. ✘ Spiral separator
3. ✘ Specific gravity separator
4. ✓ Disk separator

Question Number : 132 Question Id : 89040116144 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The cleaner used for cleaning, grading and separation of agricultural granular materials is

Options :

1. ✓ Vibratory screen
2. ✘ Ideal screen

3. ✘ Horizontal screen

4. ✘ Rotary screen

Question Number : 133 Question Id : 89040116145 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The length of cylinder in pedal operated thresher when it is operated by two persons is

Options :

1. ✘ 450 mm

2. ✘ 600 mm

3. ✔ 700 mm

4. ✘ 800 mm

Question Number : 134 Question Id : 89040116146 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In Horizontal Air Flow (HAF) cooling system, the fans are placed at an interval of

Options :

1. ✘ 5m

2. ✘ 10m

3. ✔ 15m

4. ✘ 20m

Question Number : 135 Question Id : 89040116147 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The greenhouse is suitable for low growing crops, such as lettuce is

Options :

1. ✘ Straight side wall structure type
2. ✔ Hoop type
3. ✘ Gable roof
4. ✘ Gothic arch frame structure type

Question Number : 136 Question Id : 89040116148 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The most widely used coating with a low emissivity to greenhouse glass for saving of energy is

Options :

1. ✔ Metal oxide
2. ✘ Silicon oxide
3. ✘ Tin dioxide
4. ✘ Indium oxide

Question Number : 137 Question Id : 89040116149 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The total heat loss from a structurally tight glass greenhouse occurs through infiltration is

Options :

1. ✓ 10%
2. ✗ 20%
3. ✗ 30%
4. ✗ 40%

Question Number : 138 Question Id : 89040116150 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following helps in collection of current from the armature conductors and converts the induced alternating current of the armature into direct current ?

Options :

1. ✗ Pole shoes
2. ✗ Field coil
3. ✗ Brushes
4. ✓ Commutator

Question Number : 139 Question Id : 89040116151 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which is the most popular type of motor used in agricultural purposes, having constant speed and variable horse power ?

Options :

1. ✗ Synchronous motor
2. ✗ Series type motor

3. ✓ Induction motor

4. ✘ Repulsion motor

Question Number : 140 Question Id : 89040116152 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

The device used for changing voltage from one value to another value without change in frequency is known as

Options :

1. ✘ Starter

2. ✓ Transformer

3. ✘ Dynamo

4. ✘ Alternator

Question Number : 141 Question Id : 89040116153 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

In a semiconductor, conductivity can be increased by

Options :

1. ✘ Cooling it to a very low temperature

2. ✘ Applying a strong magnetic field

3. ✓ Doping with impurities

4. ✘ Removing free electrons

Question Number : 142 Question Id : 89040116154 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

According to Ohm's Law, if the voltage is doubled while the resistance remains constant, the current will

Options :

1. ✘ Be the same
2. ✘ Be halved
3. ✔ Be doubled
4. ✘ Be reduced to zero

Question Number : 143 Question Id : 89040116155 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The tillage system in which, a crop is planted directly into a untilled seedbed after harvesting of the previous crop is known as

Options :

1. ✘ Minimum tillage
2. ✔ Zero tillage
3. ✘ Mulch tillage
4. ✘ Deep tillage

Question Number : 144 Question Id : 89040116156 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The size of light duty animal drawn mouldboard plough is

Options :

1. ✓ 100 mm
2. ✗ 150 mm
3. ✗ 200 mm
4. ✗ 250 mm

Question Number : 145 Question Id : 89040116157 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The edge of the share which forms joint between mould board and the share on the frog is known as

Options :

1. ✗ Cutting edge
2. ✗ Gunnel
3. ✗ Wing of the share
4. ✓ Cleavage edge

Question Number : 146 Question Id : 89040116158 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The device to make lateral adjustment of the plough relative to the line of pull is known as

Options :

1. ✗ Landside
2. ✗ Frog

3. ✓ Horizontal clevis

4. ✗ Tail piece

Question Number : 147 Question Id : 89040116159 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The plough which combines the principle of the regular disc plough and the disc harrow, used for shallow ploughing is

Options :

1. ✓ Harrow plough

2. ✗ Chisel plough

3. ✗ Subsoiler

4. ✗ Rotary plough

Question Number : 148 Question Id : 89040116160 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The tractor drawn implement used for seed bed preparation, weed control, mixing of soil with crop residue and fertilizer and puddling of the soil is known as

Options :

1. ✗ Reversible M B Plough

2. ✓ Rotavator

3. ✗ Disc harrow

4. ✘ Disc cultivator

Question Number : 149 Question Id : 89040116161 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The animal drawn implement which cuts and turns the soil in two opposite directions simultaneously for forming ridges is

Options :

1. ✘ Bund former

2. ✔ Furrower

3. ✘ Soil scoop

4. ✘ Clod crusher

Question Number : 150 Question Id : 89040116162 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The furrow openers works well in trashy soils where the seed beds are not smoothly prepared are

Options :

1. ✘ Disc type

2. ✘ Shovel type

3. ✔ Shoe type

4. ✘ Tine type

Question Number : 151 Question Id : 89040116163 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The seed metering mechanism of a seed drill which consists of a toothed wheel rotating in a horizontal plane and conveying the fertilizer through a feed gate is

Options :

1. ✘ Auger feed mechanism
2. ✘ Cell feed mechanism
3. ✘ Picker wheel mechanism
4. ✔ Star wheel mechanism

Question Number : 152 Question Id : 89040116164 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The functions of tractor mounted ridger type sugarcane cutter planter are

Options :

1. ✘ Formation of furrows and Cutting the sugarcane setts
2. ✘ Cutting the sugarcane setts and planting the setts
3. ✘ planting the setts and application of granular fertilizer in the furrows
4. ✔ Formation of furrows, cutting setts, planting setts and dropping of fertilizer

Question Number : 153 Question Id : 89040116165 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The nozzle in hydraulic field sprayers does not work satisfactorily if the operating pressure is below

Options :

1. ✓ 1.5 kg/cm²
2. ✗ 2.5 kg/cm²
3. ✗ 3.5 kg/cm²
4. ✗ 4.5 kg/cm²

Question Number : 154 Question Id : 89040116166 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

The duster used for spraying tall crops is

Options :

1. ✗ Plunger type
2. ✗ Knapsack type
3. ✓ Rotary
4. ✗ Power operated

Question Number : 155 Question Id : 89040116167 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

The component provided at the cutter end of the mower which causes the cut plants to fall towards the cut material is

Options :

1. ✗

2. ✘ Shoe

3. ✘ Knife back

4. ✔ Grass board

Question Number : 156 Question Id : 89040116168 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The minimum thickness of the blade in chaff cutter is

Options :

1. ✘ 1.4 mm

2. ✔ 2.4 mm

3. ✘ 3.4 mm

4. ✘ 4.4 mm

Question Number : 157 Question Id : 89040116169 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The instrument whose telescope can be revolved in both horizontal and vertical planes is known as

Options :

1. ✘ Wye level

2. ✘ Dumpy level

3. ✔

4. ✘ Farm level

Question Number : 158 Question Id : 89040116170 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

The size of a leveling instrument is specified by the focal length of the objective.

The common focal length is

Options :

1. ✔ 30 cm

2. ✘ 40 cm

3. ✘ 50 cm

4. ✘ 60 cm

Question Number : 159 Question Id : 89040116171 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

A compact hand instrument used in setting out right angles with greater accuracy is known as

Options :

1. ✘ Cross staff

2. ✔ Optical square

3. ✘ Stadia

4. ✘ Compass

Question Number : 160 Question Id : 89040116172 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A simple wooden instrument used for laying out field structures such as bunds and terraces in soil conservation works is known as

Options :

1. ✘ Hand level
2. ✘ Abney hand level
3. ✔ A-frame level
4. ✘ Prismatic compass

Question Number : 161 Question Id : 89040116173 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The coefficient of thermal expansion of invar tape for 1°C rise is

Options :

1. ✔ 0.6×10^{-4}
2. ✘ 0.7×10^{-4}
3. ✘ 0.8×10^{-4}
4. ✘ 0.9×10^{-4}

Question Number : 162 Question Id : 89040116174 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following rule is more accurate for measurement of areas of irregularly bounded fields ?

Options :

1. ✘ The Mid-ordinate Rule
2. ✘ The Average Ordinate Rule
3. ✔ Simpson's Rule
4. ✘ The Trapezoidal Rule

Question Number : 163 Question Id : 89040116175 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The contour interval for construction of reservoirs and town planning is in the range of

Options :

1. ✘ 0.15 to 0.50 m
2. ✔ 0.5 to 2m
3. ✘ 2 to 3 m
4. ✘ 3m to 25m

Question Number : 164 Question Id : 89040116176 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The terraces generally constructed in high rainfall areas with steep slopes are

Options :

1. ✘ Outward sloping bench terrace
2. ✘ Level bench terrace

3. ✓ Inward sloping bench terrace

4. ✗ Tati terrace

Question Number : 165 Question Id : 89040116177 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The Weibull Method is used for

Options :

1. ✓ Estimating return period of a flood event

2. ✗ Measuring infiltration rates

3. ✗ Calculating surface runoff

4. ✗ Determining groundwater recharge

Question Number : 166 Question Id : 89040116178 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The terrace constructed where the rainfall is low, soil is very permeable and moisture conservation is important are

Options :

1. ✓ Level terrace

2. ✗ Graded terrace

3. ✗ Channel type terrace

4. ✘ Ridge type terrace

Question Number : 167 Question Id : 89040116179 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The percentage of area lost and not suitable for cultivation under contour bunds is

Options :

1. ✘ 2

2. ✔ 5

3. ✘ 7

4. ✘ 10

Question Number : 168 Question Id : 89040116180 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The smallest unit of a watershed is called a

Options :

1. ✘ Catchment area

2. ✔ Micro-watershed

3. ✘ River basin

4. ✘ Flood plain

Question Number : 169 Question Id : 89040116181 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The erosion takes place, when the scouring of material from the water channel and the cutting

of banks by running water is known as

Options :

1. ✘ Channel erosion
2. ✘ Gully erosion
3. ✔ Stream Channel erosion
4. ✘ Rill erosion

Question Number : 170 Question Id : 89040116182 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The removal of a fairly uniform layer of soil from the land surface by the action of rainfall and runoff is known as

Options :

1. ✔ Sheet erosion
2. ✘ Splash erosion
3. ✘ Coastal erosion
4. ✘ Geological erosion

Question Number : 171 Question Id : 89040116183 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Zeroth law of thermodynamics is concerned with

Options :

1. ✘ Thermal conductivity

2. ✘ Thermal diffusivity
3. ✘ Thermal resistivity
4. ✔ Thermal equilibrium

Question Number : 172 Question Id : 89040116184 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The calorific value of High Speed Diesel Oil (HSD) is

Options :

1. ✘ 10300 kcal/kg
2. ✔ 10550 kcal/kg
3. ✘ 10850 kcal/kg
4. ✘ 11100 kcal/kg

Question Number : 173 Question Id : 89040116185 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The shaft which raises and lowers the inlet and exhaust valves at proper time is

Options :

1. ✘ Connecting rod
2. ✘ Crankshaft
3. ✔ Camshaft
4. ✘ Timing gear

Question Number : 174 Question Id : 89040116186 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The fuel injection pump supplies fuel to the injectors according to the firing order of the engine and used to create pressure varying from

Options :

1. ✘ 50 to 100 kg/cm²
2. ✔ 120 to 300 kg/cm²
3. ✘ 320 to 400 kg/cm²
4. ✘ 420 to 500 kg/cm²

Question Number : 175 Question Id : 89040116187 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The device used for interrupting the low voltage primary current and distributing the resulting high voltage current to the engine cylinder in proper sequence and in proper time is

Options :

1. ✘ Condenser
2. ✔ Distributor
3. ✘ Dynamo
4. ✘ Ignition coil

Question Number : 176 Question Id : 89040116188 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The weir, which commonly used to measure medium discharges is

Options :

1. ✓ Cipolletti weir
2. ✗ Contracted weir
3. ✗ Rectangular weir
4. ✗ V-notch weir

Question Number : 177 Question Id : 89040116189 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The diameter of opening in Orifices ranges from

Options :

1. ✗ 1 to 2.5 cm
2. ✓ 2.5 to 7.5 cm
3. ✗ 8.0 to 9.5 cm
4. ✗ 10.0 to 11.5 cm

Question Number : 178 Question Id : 89040116190 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The water measuring device which does not get clogged due to suspended silt or floating debris

during measurement is

Options :

1. ✘ Orifice
2. ✘ Weirs
3. ✔ Parshall flume
4. ✘ Water meter

Question Number : 179 Question Id : 89040116191 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

The permanent irrigation channels should not usually have side slopes steeper than

Options :

1. ✘ $\frac{1}{2}$ to 1
2. ✔ $1\frac{1}{2}$ to 1
3. ✘ 2 to 1
4. ✘ 3 to 1

Question Number : 180 Question Id : 89040116192 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

The safety measure provides against overtopping of channels due to wave action or other unforeseen reasons is

Options :

1. ✔ Free board
2. ✘ Hydraulic slope

3. ✘ Hydraulic radius

4. ✘ Wetted perimeter

Question Number : 181 Question Id : 89040116193 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The ratio of the volume of water discharged by the drain during a certain period to the precipitation generated in that period is known as

Options :

1. ✔ Drainage efficiency

2. ✘ Drainage coefficient

3. ✘ Hydraulic conductivity

4. ✘ Drainage porosity

Question Number : 182 Question Id : 89040116194 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In mole drainage system, mole drains are commonly installed at depths between

Options :

1. ✘ 0.2 and 0.3 m

2. ✔ 0.4 and 0.7 m

3. ✘ 0.8 and 1.0 m

4. ✘

Question Number : 183 Question Id : 89040116195 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Exchangeable sodium percentage (ESP) of an alkali soil is

Options :

1. ✘ 10
2. ✘ 12
3. ✘ 14
4. ✔ >15

Question Number : 184 Question Id : 89040116196 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Plantation of high water consuming trees for withdrawal of groundwater is termed as

Options :

1. ✘ Surface drainage
2. ✘ Sub- Surface drainage
3. ✔ Bio-drainage
4. ✘ Vertical drainage

Question Number : 185 Question Id : 89040116197 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The field level application efficiency of conventional surface irrigation method is

Options :

1. ✘ 20 to 25%
2. ✘ 30 to 35%
3. ✔ 40 to 50%
4. ✘ 55 to 60%

Question Number : 186 Question Id : 89040116198 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The sprinkler system is not usually suitable for heavy clay soils where the infiltration rate is less than

Options :

1. ✔ 4 mm per hour
2. ✘ 6 mm per hour
3. ✘ 8 mm per hour
4. ✘ 10 mm per hour

Question Number : 187 Question Id : 89040116199 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In drip system, the pressure ratings of lateral pipes are usually _____ kg/cm²

Options :

1. ✘ 1.0

2. ✓ 2.5

3. ✗ 3.5

4. ✗ 4.0

Question Number : 188 Question Id : 89040116200 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following drippers are most suitable on slopes and difficult topographic terrains ?

Options :

1. ✗ Online non-pressure compensating drippers

2. ✗ In line drippers

3. ✓ Online pressure compensating drippers

4. ✗ Adjustable discharge type drippers

Question Number : 189 Question Id : 89040116201 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The sprinkler heads commonly used to irrigate small lawns and gardens are

Options :

1. ✗ Rotating type

2. ✓ Pop-up type

3. ✗ Perforated pipe system

4. ✗ Pendent sprinkler

Question Number : 190 Question Id : 89040116202 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following are used to irrigate a particular portion of the command area at a time directly from the flow through the pipe without the use of any field channel ?

Options :

1. ✘ Gate stands
2. ✘ Air vents
3. ✘ End plug
4. ✔ Hydrants

Question Number : 191 Question Id : 89040116203 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The least count of micro meter is

Options :

1. ✔ 0.01 mm
2. ✘ 0.02 mm
3. ✘ 0.1 mm
4. ✘ 0.2 mm

Question Number : 192 Question Id : 89040116204 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The device used to hold round material of small diameter such as wire and pins is

Options :

1. ✘ Leg vice
2. ✘ Hand vice
3. ✔ Pin vice
4. ✘ Tool vice

Question Number : 193 Question Id : 89040116205 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Arc welding is carried out with a voltage of

Options :

1. ✘ 30-40V
2. ✔ 80-100V
3. ✘ 120-150V
4. ✘ 400-440V

Question Number : 194 Question Id : 89040116206 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The machine used for producing cylindrical, conical (tapered) and spherical components is

Options :

1. ✘ Band saw
2. ✘

3. ✘ Wood planer

4. ✔ Wood turning lathe

Question Number : 195 Question Id : 89040116207 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The instrument used for testing flatness of surface, marking parallel lines and also for marking and testing of right angles is

Options :

1. ✘ Straight edge

2. ✔ Try square

3. ✘ Mortise gauge

4. ✘ Calipers

Question Number : 196 Question Id : 89040116208 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The process of finding a single force that can replace multiple forces acting on a body is called

Options :

1. ✔ Composition of forces

2. ✘ Equilibrium

3. ✘ Friction

4. ✘ Resolution of forces

Question Number : 197 Question Id : 89040116209 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Lami's theorem is applicable to

Options :

1. ✘ Two concurrent forces
2. ✘ Three non-coplanar forces
3. ✔ Three concurrent forces in equilibrium
4. ✘ Any number of forces

Question Number : 198 Question Id : 89040116210 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The moment of a couple is given by

Options :

1. ✘ Force \times Area
2. ✘ Force \times Time
3. ✘ Force \times Inertia
4. ✔ Force \times Perpendicular distance

Question Number : 199 Question Id : 89040116211 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Darcy's equation is applicable for

Options :

1. ✘ Laminar flow only
2. ✔ Both laminar and turbulent flows
3. ✘ Turbulent flow only
4. ✘ Open channel flow only

Question Number : 200 Question Id : 89040116212 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In Chezy's equation, 'R' stands for

Options :

1. ✔ Hydraulic radius
2. ✘ Reynolds number
3. ✘ Radius of curvature
4. ✘ Coefficient of roughness