Telangana State Council 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 :	Mechanical Engineering 20th May 2023 Shift1 SET1
Subject Name :	Mechanical Engineering
Creation Date :	2023-05-20 13:03:35
Duration :	180
Total Marks :	200
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No

Help Button :   No

Show Reports :   No

Show Progress Bar :   No

Mechanical Engineering

Group Number :   1

Group Id :   15920730

Group Maximum Duration :   0

Group Minimum Duration :   180

Show Attended Group? :   No

Edit Attended Group? :   No

Break time :   0

Group Marks :   200

Is this Group for Examiner? :   No

Examiner permission :   Cant View

Show Progress Bar? :   No

Mathematics

Section Id :   159207114

Section Number :   1

Section type :   Online

Mandatory or Optional :   Mandatory

Number of Questions :   50

Number of Questions to be attempted :   50

Section Marks :   50

Enable Mark as Answered Mark for Review and Clear Response :   Yes

Maximum Instruction Time :   0

Question Number : 1 Question Id : 1592075816 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Let $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$. If $A^2 = \alpha A + \beta I$, where I is the 2 x 2 identity matrix, then $(\alpha, \beta) =$

Options :

1. ✖ $(5, 7)$

2. ✖ $(-5, -7)$

3. ✖ $(-5, 7)$

4. ✔ $(5, -7)$

Question Number : 2 Question Id : 1592075817 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If (a + b + c) = 5, then

$$\det \begin{bmatrix} a-b-c & 2b & 2c \\ 2a & b-c-a & 2c \\ 2a & 2b & c-a-b \end{bmatrix} =$$

Options :

1. ✖   5

2. ✖   25

3. ✔   125

4. ✖   625

Question Number : 3 Question Id : 1592075818 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $\begin{bmatrix} 4 & 3 \\ 9 & 7 \end{bmatrix}\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 18 \\ 41 \end{bmatrix}$, then 12x + 10y =

Options :

1. ✖   58

2. ✔   56

3. ✖ 54

4. ✖ 52

Question Number : 4 Question Id : 1592075819 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $\log_{16} x + \log_4 x + \log_2 x = 7$, then $x =$

Options :

1. ✔ 16

2. ✖ 32

3. ✖ 64

4. ✖ 128

Question Number : 5 Question Id : 1592075820 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $\dfrac{2x^2 - 6x + 5}{x^3 - 6x^2 + 11x - 6} = \dfrac{A}{x-1} + \dfrac{B}{x-2} + \dfrac{C}{x-3}$, then $10A + B + 2C =$

Options :

1. ✖ 5

2. ✖ 7

3. ✔ 9

4. ✖ 11

Question Number : 6 Question Id : 1592075821 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $\log_x(3x^2 + 10x) = 3$, then $x =$

Options :

1. ✖ 3

2. ✔ 5

3. ✖ 7

4. ✖ 9

Question Number : 7 Question Id : 1592075822 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The value of $\sin^2 45^\circ + \sin^2 135^\circ + \sin^2 225^\circ + \sin^2 315^\circ$ is

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 0

4. ✖ 4

Question Number : 8 Question Id : 1592075823 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a $\triangle ABC$, if a = 3, b = 4 and $\sin A = \dfrac{3}{4}$, then the angle B =

Options :

1. ✖ 45º

2. ✖ 60º

3. ✔ 90°

4. ✖ 70°

Question Number : 9 Question Id : 1592075824 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\sin^2 36^\circ - \sin^2 18^\circ =$$

Options :

1. ✖ $\dfrac{1}{2}$

2. ✔ $\dfrac{1}{4}$

3. ✖ $\dfrac{1}{8}$

4. ✖ 1

Question Number : 10 Question Id : 1592075825 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The period of the function $\cos\left(\frac{5}{3}\right)\sin\left(\frac{2x}{3}\right) + \sin\left(\frac{5}{3}\right)\cos\left(\frac{2x}{3}\right)$ is

Options :

1. ✖ π

2. ✖ 2π

3. ✔ 3π

4. ✖ $\dfrac{3\pi}{2}$

Question Number : 11 Question Id : 1592075826 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $\cosh x = \dfrac{5}{4}$, then $\coth 2x =$

Options :

1. ✔ $\dfrac{17}{15}$

2. ✖ $\dfrac{5}{3}$

3. ✖ $\dfrac{15}{17}$

4. ✖ $\dfrac{3}{5}$

Question Number : 12 Question Id : 1592075827 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The modulus of the complex number $\dfrac{2+i}{3-i}$ is

Options :

1. ✖ $\dfrac{1}{\sqrt{3}}$

2. ✖ 1

3. ✖ $\sqrt{2}$

4. ✔ $\dfrac{1}{\sqrt{2}}$

Question Number : 13 Question Id : 1592075828 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the sides of a triangle are 13,7 and 8, then the greatest angle of the triangle is

Options :

1. ✖ $\dfrac{\pi}{3}$

2. ✖ $\dfrac{\pi}{2}$

3. ✔ $\dfrac{2\pi}{3}$

4. ✖ $\dfrac{3\pi}{2}$

Question Number : 14 Question Id : 1592075829 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the angles of a triangle are in the ratio of $1:4:5$, then the ratio of the greatest side to the smallest side is

Options :

1. ✔ $4 : \sqrt{5} - 1$

2. ✘ $5 : 4$

3. ✘ $\sqrt{5} - 1 : 4$

4. ✘ $4 : \sqrt{5}$

Question Number : 15 Question Id : 1592075830 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Number of tangents drawn at a point of the circle is

Options :

1. ✔ One

2. ✘ Two

3. ✘ Three

4. ✘ Many

Question Number : 16 Question Id : 1592075831 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The minimum value of $f(x) = |x - 2| + |x + 2|$ is

Options :

1. ✖ 0

2. ✖ 2

3. ✔ 4

4. ✖ 8

Question Number : 17 Question Id : 1592075832 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The eccentricity of ellipse $\frac{x^2}{16} + \frac{y^2}{4} = 1$ is

Options :

1. ✖ $2\sqrt{3}$

2. ✖ $\sqrt{2}$

3. ✔

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

4. ✖ $\sqrt{3}$

Question Number : 18 Question Id : 1592075833 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\lim_{x \to \infty} \left(1 + \frac{2}{x}\right)^x =$$

Options :

1. ✖ e

2. ✔ e^2

3. ✖ e^3

4. ✖ e^4

Question Number : 19 Question Id : 1592075834 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\frac{d}{dx}\left(\sqrt{\sin\sqrt{x}}\right) =$$

Options :

1. ✖ $$\frac{1}{4}\frac{\sin\sqrt{x}}{\sqrt{x}}$$

2. ✖ $$\frac{1}{6}\frac{\cos\sqrt{x}}{\sqrt{x}}$$

3. ✔ $$\frac{1}{4}\frac{\cos\sqrt{x}}{\sqrt{x}\sqrt{\sin\sqrt{x}}}$$

4. ✖ $$\frac{1}{2}\frac{\cos\sqrt{x}}{\sqrt{\sin\sqrt{x}}}$$

Question Number : 20 Question Id : 1592075835 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If x = 2cost − cos2t, y = 2sint − sin2t, then $\frac{dy}{dx}$ at $t=\frac{\pi}{6}$ is

Options :

1. ✖ 0

2. ✔ 1

3. ✖ $\sqrt{3}$

4. ✖ $\dfrac{1}{\sqrt{3}}$

Question Number : 21 Question Id : 1592075836 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $y = \cos(x + y)$, then $\dfrac{dy}{dx} =$

Options :

1. ✖ $\dfrac{1 - \sin(x+y)}{\cos x + \cos y}$

2. ✖ $\dfrac{1 + \sin(x+y)}{\cos x - \cos y}$

3. ✖ $\dfrac{\cos(x+y)}{1 + \sin(x+y)}$

4. ✔ $\dfrac{-\sin(x+y)}{1 + \sin(x+y)}$

Question Number : 22 Question Id : 1592075837 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The equation of tangent to the curve $xy = 16$ at P (4, 4) is

Options :

1. ✖ $x + y = 2$

2. ✖ $x + y = 4$

3. ✔ $x + y = 8$

4. ✖ $x + y = 16$

Question Number : 23 Question Id : 1592075838 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum value of $f(x) = \left(\dfrac{1}{x}\right)^x$ is

Options :

1. ✔ $e^{1/e}$

2. ✖ $\left(\dfrac{1}{e}\right)^e$

3. ✖ $\left(\dfrac{1}{e}\right)^{1/e}$

4. ✖ e^e

Question Number : 24 Question Id : 1592075839 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $u(x, y, z) = \log\left(x^3 + y^3 + z^3 - 3xyz\right)$, then $\dfrac{\partial u}{\partial x} + \dfrac{\partial u}{\partial y} + \dfrac{\partial u}{\partial z} =$

Options :

1. ✖ $\dfrac{1}{x+y+z}$

2. ✖ $\dfrac{9}{x+y+z}$

3. ✖ $\dfrac{6}{x+y+z}$

4. ✔ $\dfrac{3}{x+y+z}$

Question Number : 25 Question Id : 1592075840 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $u(x, y) = \log\left(\dfrac{x^4 + y^4}{x + y}\right)$, then $x\dfrac{\partial u}{\partial x} + y\dfrac{\partial u}{\partial y} =$

Options :

1. ✖   4

2. ✔   3

3. ✖   2

4. ✖   1

Question Number : 26 Question Id : 1592075841 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\displaystyle\int \dfrac{\sin\left(\tan^{-1} x\right)}{1+x^2} dx =$

Options :

1. ✔ $-\cos(\tan^{-1}x) + c$

2. ✖ $\cos(\tan^{-1}x) + c$

3. ✖ $\sin(\tan^{-1}x) + c$

4. ✖ $-\sin(\tan^{-1}x) + c$

Question Number : 27 Question Id : 1592075842 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\int \frac{1}{e^{2x} + e^x} dx$$

Options :

1. ✖ $\log(e^x + 1) - e^{-x} + c$

2. ✖ $\log\left(\frac{e^x + 1}{e^x}\right) + c$

3. ✔ $\log(e^{-x} + 1) - e^{-x} + c$

4. ✖ $\log\left(\frac{e^{-x}}{e^x + 1}\right) + e^{-x} + c$

Question Number : 28 Question Id : 1592075843 Question Type : MCQ Option

The value of the integral $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \sin |x| \, dx$ is

Options :

1. ✖ 0

2. ✖ 1

3. ✖ −2

4. ✔ 2

The curves $y = x^2 - 4$ and $y = 1 - x^2$ together enclose an area of

Options :

1. ✖ $10\sqrt{10}$

2. ✖ $5\sqrt{10}$

3. ✔

$$\frac{10\sqrt{10}}{3}$$

$$4. \text{✖} \quad \frac{10\sqrt{10}}{9}$$

Question Number : 30 Question Id : 1592075845 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The RMS value of the f(x) = $\sqrt{\log x}$ on [1, e] is

Options :

1. ✖ $\sqrt{\dfrac{e}{e-1}}$

2. ✖ $\sqrt{\dfrac{e-1}{e}}$

3. ✔ $\dfrac{1}{\sqrt{e-1}}$

4. ✖ $\sqrt{e-1}$

Question Number : 31 Question Id : 1592075846 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None

Correct Marks : 1 Wrong Marks : 0

The approximate value of the integral $\int_0^1 \frac{1}{1+x}dx$, using Trapezoidal rule with h = 0.5, is

Options :

1. ✖ 0.69450

2. ✔ 0.70834

3. ✖ 0.67435

4. ✖ 0.68500

Question Number : 32 Question Id : 1592075847 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The velocity of a body as a function of time is given as

$v(t) = 5e^{-2t} + 4$, where t is in seconds and v is in m/s. The acceleration when t = 5 in m/s^2 is

Options :

1. ✔ $-10e^{-10}$

2. ✖ $-20e^{-10}$

3. ✖ $-30e^{-10}$

4. ✖ $-40e^{-10}$

Question Number : 33 Question Id : 1592075848 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The order and degree of the differential equation

$$\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^2 + x = 0 \text{ respectively are}$$

Options :

1. ✖ 3 and 3

2. ✖ 2 and 2

3. ✖ 2 and 3

4. ✔ 2 and 1

Question Number : 34 Question Id : 1592075849 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The general solution of $ye^x dx + (y-1)dy = 0$ is

Options :

1. ✖ $e^x - \log y = c$

2. ✖ $e^x - y = c$

3. ✖ $e^x - y - \log x = c$

4. ✔ $e^x + y - \log y = c$

Question Number : 35 Question Id : 1592075850 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $sinx \dfrac{dy}{dx} + y\,cosx = x\,sinx$, then $(y-1)sinx =$

Options :

1. ✖ $c - x\,sinx$

2. ✖ $c + x\,sinx$

3. ✔ $c - x\cos x$

4. ✘ $c + x\cos x$

Question Number : 36 Question Id : 1592075851 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The solution of the differential equation

$(e^y + 1)\cos x \, dx + e^y \sin x \, dy = 0$ is

Options :

1. ✔ $(e^y + 1)\sin x = c$

2. ✘ $e^x \sin x = c$

3. ✘ $(e^x + 1)\cos x = c$

4. ✘ $(e^y - 1)\sin x = c$

Question Number : 37 Question Id : 1592075852 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The differential equation satisfied by $y = \frac{A}{x} + B$, (A,B are parameters) is

Options :

1. ✖ $x^2 y_1 = y$

2. ✖ $xy_1 + 2y_2 = 0$

3. ✔ $xy_2 + 2y_1 = 0$

4. ✖ $x^2 y_1 - 2y = 0$

Question Number : 38 Question Id : 1592075853 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The general solution of $\log\left(\frac{dy}{dx}\right) = 3x + 3y$ is

Options :

1. ✖ $e^{3x} + e^{3y} = c$

2. ✖ $e^{-3x} + e^{-3y} = c$

3. ✖ $e^{-3x} + e^{3y} = c$

4. ✔ $e^{3x} + e^{-3y} = c$

Question Number : 39 Question Id : 1592075854 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $y\,dx + y^2\,dy = x\,dy, x \in \mathbb{R}, y > 0$ and $y(1) = 1$, then $y(-3) =$

Options :

1. ✔ 3

2. ✖ 2

3. ✖ 1

4. ✖ 5

Question Number : 40 Question Id : 1592075855 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$L\{\sin 2t - 2t\cos 2t\} =$$

Options :

1. ✖ $$\frac{2}{\left(s^2 + 4\right)^2}$$

2. ✖ $$\frac{8}{\left(s^2 + 4\right)^2}$$

3. ✔ $$\frac{16}{(s^2 + 4)^2}$$

4. ✖ $$\frac{32}{\left((s^2 + 4)\right)^2}$$

Question Number : 41 Question Id : 1592075856 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$L\{\cosh 3t \, \cos 3t\} =$$

Options :

1. ✖ $$\frac{1}{2}\left[\frac{s-6}{s^2 - 3s + 18} + \frac{s+6}{s^2 + 3s + 18}\right]$$

2. ✔

$$\frac{1}{2}\left[\frac{s-3}{s^2-6s+18}+\frac{s+3}{s^2+6s+18}\right]$$

$$3. \text{✖} \qquad \frac{1}{2}\left[\frac{s-4}{s^2-4s+9}+\frac{s-3}{s^2-6s+9}\right]$$

$$4. \text{✖} \qquad \frac{1}{2}\left[\frac{s-6}{s^2+9}+\frac{s+6}{3s^2+9}\right]$$

Question Number : 42 Question Id : 1592075857 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$L\left\{\frac{1-\cos 3t}{t}\right\} =$$

Options :

$$1. \text{✖} \qquad \frac{1}{2}\log\left(\frac{s^2+9}{s^2+3}\right)$$

$$2. \text{✖} \qquad \frac{1}{2}\log\left(\frac{s}{s+9}\right)$$

$$3. \text{✖} \qquad \frac{1}{2}\log\left(\frac{s}{s^2+9}\right)$$

4.

$$\frac{1}{2} \log\left(\frac{s^2 + 9}{s^2}\right)$$

✔

Question Number : 43 Question Id : 1592075858 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Laplace transform of f(t) = t sin t is F(s) where F(s) =

Options :

1. ✖ $\dfrac{s}{\left(1 + s^2\right)^2}$

2. ✖ $\dfrac{2s}{\left(1 + s^2\right)^2}$

3. ✖ $\dfrac{2s}{1 + s^2}$

4. ✔ $\dfrac{s}{1 + s^2}$

Question Number : 44 Question Id : 1592075859 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $L^{-1}\left\{\dfrac{2s^2-1}{\left(s^2+1\right)\left(s^2+4\right)}\right\} = f(t)$, then $f\left(\dfrac{\pi}{2}\right) =$

Options :

1. ✖ 1

2. ✔ −1

3. ✖ 2

4. ✖ −2

Question Number : 45 Question Id : 1592075860 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\int_0^\infty \frac{e^{-3t}-e^{-6t}}{t}\,dt \;=$$

Options :

1. ✖ log 6

2. ✖ log 3

3. ✔ log 2

4. ✖   log 18

Question Number : 46 Question Id : 1592075861 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The solution of the differential equation

$$y'' - 2y' + 2y = 0 \quad \text{satisfying } y(0) = y'(0) = 1 \quad \text{is}$$

Options :

1. ✖ $e^t + e^{-2t} \cos t$

2. ✖ $e^t + \cos t$

3. ✖ $e^t \sin t$

4. ✔ $e^t \cos t$

Question Number : 47 Question Id : 1592075862 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The value of the Fourier coefficient a_0 in the Fourier series expansion of $f(x) = x \sin x$ in $(0, 2\pi)$ is

Options :

1. ✖   2

2. ✔   −2

3. ✖   1

4. ✖   −1

Question Number : 48 Question Id : 1592075863 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If b_1, b_2 are Fourier coefficients in the Fourier series expansion of

$f(x) = |\sin x|$ in $(-\pi, \pi)$, then $b_1 + b_2 =$

Options :

1. ✖ $\dfrac{2}{\pi}$

2. ✖ $-\dfrac{2}{\pi}$

3. ✔   0

4. ✖ $\dfrac{4}{\pi}$

Question Number : 49 Question Id : 1592075864 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

At x = 0, the Fourier series of $f(x) = \begin{cases} \pi + x & \text{if} & -\pi < x < 0 \\ 0 & \text{if} & 0 \le x < \pi \end{cases}$ converges to

Options :

1. ✖ π

2. ✖ 0

3. ✖ $-\pi$

4. ✔ $\dfrac{\pi}{2}$

Question Number : 50 Question Id : 1592075865 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $x = \dfrac{\pi}{2} + \displaystyle\sum_{n=1}^{\infty} a_n \cos nx,\ 0 < x < \pi,$ then the value of a_n is

Options :

1. ✔

$$\dfrac{2}{\pi n^2}\left[(-1)^n - 1\right]$$

2. ✖

$$\dfrac{2}{\pi n^2}$$

3. ✖

$$0$$

4. ✖

$$\dfrac{4}{\pi n^2}$$

Physics

Section Id :	159207115
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Enable Mark as Answered Mark for Review and Clear Response :	Yes

Question Number : 51 Question Id : 1592075866 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If F is force, x is distance and t is time, then the dimensions of $\frac{b}{a}$ in the equation $F = \frac{b-x}{at}$ are same as that of

Options :

1. ✖ Velocity

2. ✖ Force

3. ✔ Momentum

4. ✖ Time

Question Number : 52 Question Id : 1592075867 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The static friction is

Options :

1. ✖ Equal to the dynamic friction

2. ✔ Always greater than the dynamic friction

3. ✖ Always less than the dynamic friction

4. ✖ Sometimes less than and sometimes equal to dynamic friction

Question Number : 53 Question Id : 1592075868 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A vector A points vertically upward and B points towards north, the vector product of B x A is

Options :

1. ✖ Along west

2. ✔ Along east

3. ✖ Vertically downward

4. ✖ No direction

Question Number : 54 Question Id : 1592075869 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A Vector A has magnitude 9/2 unit towards north, the direction of vector -6A and 8A .

Options :

1. ✖ -27 units and 36 units towards south

2. ✖ -27 units and 36 units towards north

3. ✔ -27 units towards south and 36 units towards north

4. ✖ -27 units towards west and 36 units towards east

Question Number : 55 Question Id : 1592075870 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Angular displacement of a particle is described as $\theta = 2t + 3t^2$, the angular velocity (in rad/sec) at t = 2 sec is

Options :

1. ✖ 2

2. ✖ 6

3. ✖ 16

4. ✔ 14

Question Number : 56 Question Id : 1592075871 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The acceleration of a car moving on a straight road with a constant velocity of 40 m/sec is

Options :

1. ✖ $30 \ m/s^2$

2. ✖ $20 \ m/s^2$

3. ✔ $0 \ m/s^2$

4. ✖ 40 m/s^2

Question Number : 57 Question Id : 1592075872 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Two wires of same length and made with same material are stretched with the same force. If the radii of the wires are in the ratio 1:3, then the ratio of their elongations is

Options :

1. ✖ 1:3

2. ✔ 9:1

3. ✖ 3:1

4. ✖ 1:9

Question Number : 58 Question Id : 1592075873 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Along a stream line flow of fluid

Options :

1. ✖ The velocity of all fluid particles at a given instant is constant.

2. ✖ The velocity of a fluid particle remains constant.

3. ✔ The velocity of all fluid particles crossing a given position is constant.

4. ✖ The speed of a fluid particle remains constant.

Question Number : 59 Question Id : 1592075874 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following gives the relation between C_p and C_v

Options :

1. ✔ $C_p - C_v = R$

2. ✖ $C_p = C_v$

3. ✖ $C_p - C_v > R$

4. $\times$ Cp / Cv = R

Question Number : 60 Question Id : 1592075875 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Compressed air coming out of punctured football becomes cooler because.

Options :

1. $\checkmark$ Adiabatic expansion

2. $\times$ Isothermal expansion

3. $\times$ Energy dissipation

4. $\times$ See-beck effect

Question Number : 61 Question Id : 1592075876 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The work done (Joule) by a 1 mole of a perfect gas when it expands isothermally to double its volume. The initial temperature of the gas is 0^0C and R = 8.31×10^7 erg- mol^{-1} . K^{-1}. ($\log_{10} 2 = 0.3010$)

Options :

1. ✖ 15.72 joule

2. ✖ 157.2 joule

3. ✔ 1572 joule

4. ✖ 1.572 joule

Question Number : 62 Question Id : 1592075877 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The energy possessed by an object, by virtue of its motion is termed as

Options :

1. ✖ Potential Energy

2. ✔ Kinetic Energy

3. ✖ Gravitational Energy

4. ✖ Nuclear Energy

Question Number : 63 Question Id : 1592075878 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

At what speed the observer must move towards a stationary source so that the apparent frequency will be double the original frequency of the source? The velocity of sound is V.

Options :

1. ✔ V

2. ✖ $\dfrac{V}{2}$

3. ✖ $2V$

4. ✖ $\dfrac{V}{4}$

Question Number : 64 Question Id : 1592075879 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The displacement equation of a particle executes SHM is given by $y = a \, Sin \, \omega t + b \, Cos \, \omega t$, the resultant amplitude is

Options :

1. ✔ $(a^2 + b^2)^{1/2}$

2. ✖ $(a + b)$

3. ✖ $(a + b)^{1/2}$

4. ✖ Zero

Question Number : 65 Question Id : 1592075880 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The periodic time (T) of simple pendulum is observed for different lengths (L). If a graph of $\log_{10}L$ against $\log_{10}T$ is plotted, the slope of the graph will be

Options :

1. ✖ $1/2$

2. ✖ $-1/2$

3. ✖ $(2)^{1/2}$

4. ✔ 2

Question Number : 66 Question Id : 1592075881 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The maximum velocity of a particle performing SHM is 0.12 m/sec, if its maximum acceleration is 0.48 m/sec^2, then its time period (sec) is

Options :

1. ✖ 1.54

2. ✖ 1.59

3. ✔ 1.57

4. ✖ 1.75

Question Number : 67 Question Id : 1592075882 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The minimum energy required to take out an electron from an alkali metal is called

Options :

1. ✖   Kinetic Energy

2. ✖   Potential Energy

3. ✖   Gibbs Free Energy

4. ✔   Work Function

Question Number : 68 Question Id : 1592075883 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

N_1 and N_2 be the number of atoms in the ground and excited states. Then the condition for population inversion is

Options :

1. ✖ $N_1 = N_2$

2. ✖ $N_1 > N_2$

3. ✔ $N_2 > N_1$

4. ✖ $N_2 = 0$

Question Number : 69 Question Id : 1592075884 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Two magnets have magnetic moments in the ratio 2:1. Their pole strengths are in the ratio 1:2. Then the ratio of their magnetic lengths is

Options :

1. ✖ 1:4

2. ✖ 1:1

3. ✖ 2:3

4. ✔ 4:1

Question Number : 70 Question Id : 1592075885 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The susceptibility of para magnetic material is

Options :

1. ✔ Positive and small

2. ✖ Positive and large

3. ✖ Negative

4. ✖ Zero

Question Number : 71 Question Id : 1592075886 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

There are three equal resistors, how many different combinations of these resisters are possible.

Options :

1. ✔ Four

2. ✖ Two

3. ✖ Three

4. ✖ Five

Question Number : 72 Question Id : 1592075887 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None

Correct Marks : 1 Wrong Marks : 0

Which one of the following is the perfect diamagnetic?

Options :

1. ✖   Any conductor

2. ✖   P-Type semiconductor

3. ✖   N-Type semiconductor

4. ✔   Superconductor

Question Number : 73 Question Id : 1592075888 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The current in the PN junction diode during the reverse bias is the result of

Options :

1. ✖   Majority carriers

2. ✔   Minority carriers

3.

✖ Both majority and minority carriers

4. ✖ Only electrons

Question Number : 74 Question Id : 1592075889 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following has maximum energy gap?

Options :

1. ✔ Insulators

2. ✖ Superconductors

3. ✖ Metals

4. ✖ Semiconductors

Question Number : 75 Question Id : 1592075890 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is true for Fermi energy level for p-type extrinsic semiconductor?

Options :

1. ✖ At middle of the band gap

2. ✔ Close to valence band

3. ✖ Close to conduction band

4. ✖ Fermi level does not exist

Chemistry

Section Id :	159207116
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	159207137
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 76 Question Id : 1592075891 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The values of Azimuthal and principal quantum numbers respectively for an electron that is present in 4d orbital

Options :

1. ✖ 1 and 4

2. ✖ 4 and 1

3. ✔ 2 and 4

4. ✖ 4 and 2

Question Number : 77 Question Id : 1592075892 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following molecule has ionic bonding?

Options :

1. ✖ CH_3Cl

2. ✖ CH_3OH

3. ✖ CO_2

4. ✔ MgO

Question Number : 78 Question Id : 1592075893 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the Oxidation number of carbon in formaldehyde?

Options :

1. ✖ -4

2. ✖ +4

3. ✔ 0

4. ✖ +2

Question Number : 79 Question Id : 1592075894 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Molarity of a solution containing 9 g of glucose (molar mass180)

in 500 g of water is

Options :

1. ✖ 0.5

2. ✔ 0.1

3. ✖ 0.2

4. ✖ 1.0

Question Number : 80 Question Id : 1592075895 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Prussian blue colloid is

Options :

1. ✖ As_2S_3

2. ✖ $Fe(OH)_3$

3. ✔ $KFe[Fe(CN)_6]$

4. ✖ $FeCl_3$

Question Number : 81 Question Id : 1592075896 Question Type : MCQ Option

Correct Marks : 1 Wrong Marks : 0

Which of the following anions is the strongest base?

Options :

1. ✔ ClO^-

2. ✖ ClO_2^-

3. ✖ ClO_3^-

4. ✖ ClO_4^-

Question Number : 82 Question Id : 1592075897 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The pH of 10^{-9} molar solution of HCl is

Options :

1. ✖ 9

2. ✖ -9

3. ✖ Between 7 & 8

4. ✔ Between 6 & 7

Question Number : 83 Question Id : 1592075898 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is a Renewable energy source?

Options :

1. ✖ Petroleum

2. ✖ Coal

3. ✖ Natural gas

4. ✔ Wind mills

Question Number : 84 Question Id : 1592075899 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following gas is responsible for depletion of ozone layer
in the atmosphere?

Options :

1. ✖ CH_2Cl_2

2. ✔ CF_2Cl_2

3. ✖ CH_2F_2

4. ✖ CO_2

Question Number : 85 Question Id : 1592075900 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The exhausted permutit is regenerated by percolating through it a solution of

Options :

1. ✖ Calcium chloride

2. ✖ Zinc chloride

3. ✔ Sodium chloride

4. ✖ Magnesium chloride

Question Number : 86 Question Id : 1592075901 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None

Correct Marks : 1 Wrong Marks : 0

During reverse osmosis:

Options :

1. ✖ Dissolved salts are pushed out through semipermeable membrane

2. ✖ Only dissolved ionic salts are pushed out through the semipermeable membrane

3. ✔ Pure water is pushed out through semipermeable membrane

4. ✖ Both water and dissolved salts are pushed out through the semipermeable membrane

Question Number : 87 Question Id : 1592075902 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is a weak electrolyte?

Options :

1. ✖ HCl

2. ✖ $NaOH$

3. ✔ CH₃COOH

4. ✖ H₂SO₄

Question Number : 88 Question Id : 1592075903 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When 2 amperes of current is passed through $CuSO_4$ solution for 10 minutes, the amount of Cu deposited is (Atomic weight of Cu = 63.5 g)

Options :

1. ✖ 3.94 g

2. ✔ 0.394 g

3. ✖ 0.788 g

4. ✖ 7.88 g

Question Number : 89 Question Id : 1592075904 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Composition of Nichrome alloy is

Options :

1. ✖ Ni:68%, Cu:27%, Fe:5%

2. ✔ Ni:78%, Cr:20%, Fe:2%

3. ✖ Ni:40%, Cu:60%

4. ✖ Al:95%, Cu:2%, Ni:1%

Question Number : 90 Question Id : 1592075905 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In the froth flotation method, pine oil

Options :

1. ✖ Increases the surface tension of the solution

2. ✖ Acts as a collector

3. ✖ Does not affect the surface tension of the solution

4. ✔ Decreases the surface tension of the solution

Question Number : 91 Question Id : 1592075906 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

During electro chemical corrosion in acidic environment

Options :

1. ✔ Hydrogen evolution takes place

2. ✖ Oxygen evolution takes place

3. ✖ Oxygen absorption occurs

4. ✖ Hydrogen absorption takes place

Question Number : 92 Question Id : 1592075907 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The process of coating of Iron with Zinc metal is known as

Options :

1. ✔ Galvanizing

2. ✖

Sherardizing

3. ✖ Zincing

4. ✖ Tinning

Question Number : 93 Question Id : 1592075908 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Bakelite is prepared by the condensation polymerization of

Options :

1. ✔ Phenol and formaldehyde

2. ✖ Urea and formaldehyde

3. ✖ Phenol and acetaldehyde

4. ✖ Urea and acetone

Question Number : 94 Question Id : 1592075909 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The trade name of the polymer coated on non-stick utensils is

Options :

1. ✖ Dacron

2. ✖ Orlon

3. ✔ Teflon

4. ✖ Nylon

Question Number : 95 Question Id : 1592075910 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Octane number of a petrol that consists 20:80 mixture of n-heptane and 2,2,4-trimethyl pentane is

Options :

1. ✖ 100

2. ✖ Zero

3. ✔ 80

4. ✖ 20

Question Number : 96 Question Id : 1592075911 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Producer gas is a mixture of
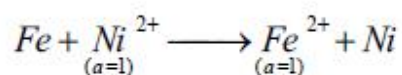
Options :

1. ✖ $CO_2 + H_2$

2. ✔ $CO + N_2$

3. ✖ $CO + CH_4$

4. ✖ $CH_4 + H_2$

Question Number : 97 Question Id : 1592075912 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For the following cell reaction

$$Fe + Ni^{2+}_{(a=1)} \longrightarrow Fe^{2+}_{(a=1)} + Ni$$

The EMF of the cell at 298 K is $(\overset{o}{E}_{Fe^{2+}/Fe} = -0.440\ V; \overset{o}{E}_{Ni^{2+}/Ni} = -0.250\ V)$

Options :
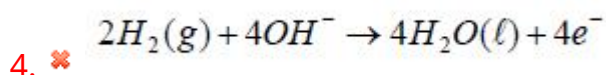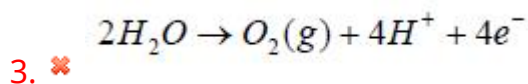
1. ✖ $-0.190\ V$

2. ✔ + 0.190 V
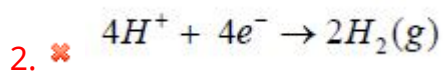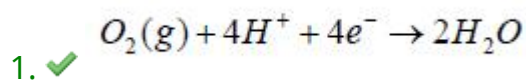
3. ✖ + 0.690 V

4. ✖ − 0.690 V

Question Number : 98 Question Id : 1592075913 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In Hydrogen-Oxygen fuel cell, the reaction at the cathode is

Options :

1. ✔ $O_2(g) + 4H^+ + 4e^- \rightarrow 2H_2O$

2. ✖ $4H^+ + 4e^- \rightarrow 2H_2(g)$

3. ✖ $2H_2O \rightarrow O_2(g) + 4H^+ + 4e^-$

4. ✖ $2H_2(g) + 4OH^- \rightarrow 4H_2O(\ell) + 4e^-$

Question Number : 99 Question Id : 1592075914 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following statements is true about SMOG?

Options :

1. ✖ SMOG is derived from the fog

2. ✖ SMOG is derived from smoke

3. ✖ SMOG is derived from water vapour

4. ✔ SMOG is derived from both fog and smoke

Question Number : 100 Question Id : 1592075915 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What do BOD and COD stand for?

Options :

1. ✔ Biological Oxygen Demand and Chemical Oxygen Demand respectively

2. ✖ Chemical Oxygen Demand and Biological Oxygen Demand respectively

3. ✖ Botanical Oxygen Demand and Chemical Oxygen Demand respectively

Basic Oxygen Demand and Chemical Oxygen
Demand respectively

4. ✷

Mechanical Engineering

Section Id :	159207117
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	159207138
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 101 Question Id : 1592075916 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ is used to scribing two parallel lines at a time on a wooden work surface

Options :

1. ✷

Marking gauge

Bevel gauge

2. ✖

Mortise gauge

3. ✔

Feeler gauge

4. ✖

Question Number : 102 Question Id : 1592075917 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the name of the chisel used to chip-off excess metal of welded joints and castings?

Options :

Cross cut chisel

1. ✖

Diamond point chisel

2. ✖

Flat chisel

3. ✔

Half round nose chisel

4. ✖

Question Number : 103 Question Id : 1592075918 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following process belong to forging operation

Options :

Fullering

1. ✔

Welding

2. ✖

Drawing

3. ✖

Piercing

4. ✖

Question Number : 104 Question Id : 1592075919 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The following one is applied to improve the surface finish of the casting

Options :

1. ✔ Facing sand

2. ✖ Coal dust

3. ✖ Saw dust

4. ✖ Iron oxide

Question Number : 105 Question Id : 1592075920 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The purpose of metallic chills used in casting is to

Options :

1. ✖ Progressive solidification

2. ✖ Avoid all the defects

3. ✖

Increase in strength of the casting

Directional solidification

4. ✔

Question Number : 106 Question Id : 1592075921 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Investment casting is also called as

Options :

Cold chamber die casting

1. ✖

Shell moulding

2. ✖

Lost wax method

3. ✔

Centrifugal casting

4. ✖

Question Number : 107 Question Id : 1592075922 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None

_____ pattern is used when the contour of the part is such that, withdrawing the pattern from the mould is not possible

Options :

1. ✖ Follow board

2. ✔ Loose piece

3. ✖ Sweep

4. ✖ Match plate

In a broaching tool, the teeth which are responsible for heaviest cutting is called

Options :

1. ✔ Rough teeth

2. ✖ Semi finishing teeth

3. **✖** Finishing teeth

4. **✖** Smooth teeth

Question Number : 109 Question Id : 1592075924 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Metal removal rate of a shaper with cutting speed of 40 m min^{-1}, feed rate 0.5 mm per stroke and depth of cut 5 mm is

Options :

1. **✖** $100000 \ m^3 \ min^{-1}$

2. $100000 \ mm^3 \ min^{-1}$

3. **✖** $10000 \ m^3 \ min^{-1}$

4. **✖** $1000 \ mm^3 \ min^{-1}$

Question Number : 110 Question Id : 1592075925 Question Type : MCQ Optio

Correct Marks : 1 Wrong Marks : 0

In a slotting machine the part which houses complete driving mechanism is

Options :

1. ✖ Base

2. ✖ Table

3. ✔ Column

4. ✖ Ram

Question Number : 111 Question Id : 1592075926 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which driving mechanism of planing machine do not have speed reduction gear box

Options :

1. ✖ Crank drive

Belt drive

2. ✖

Hydraulic drive

3. ✔

Direct reversible drive

4. ✖

Question Number : 112 Question Id : 1592075927 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is not a desirable property of a cutting fluid

Options :

Good lubrication

1. ✖

High heat absorption capacity

2. ✖

Low flash point stability

3. ✔

Preventing adhesion of metal on tool point

4. ✖

Question Number : 113 Question Id : 1592075928 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A welding process in which a heavy electric current is passed through the metals to be joined over a limited area, causing them to be locally heated to plastic state and the weld is completed by application of pressure for a prescribed time is

Options :

1. ✖ Cold welding

2. ✔ Resistance welding

3. ✖ Forge welding

4. ✖ Flash welding

Question Number : 114 Question Id : 1592075929 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The ingredient of electrode used in welding which provides a reducing gas shield and increases arc voltage is

Options :

1. ✖ Potassium aluminium silicate

2. ✔ Cellulose

3. ✖ Rutile

4. ✖ Metal carbonate

Question Number : 115 Question Id : 1592075930 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a fluted milling cutter, inclined angle between land and face of the tooth is called

Options :

1. ✖ Clearance angle

2. ✖ Relief angle

3. ✖ Radial rake angle

4. ✔ Lip angle

Question Number : 116 Question Id : 1592075931 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None

Correct Marks : 1 Wrong Marks : 0

A milling operation which involves use of a combination of more than two cutters mounted on a common arbor is called

Options :

1. ✖ Slab milling

2. ✔ Gang milling

3. ✖ Straddle milling

4. ✖ Angular milling

Question Number : 117 Question Id : 1592075932 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The term which indicates spacing between abrasive grains on grinding wheel is

Options :

1. ✖ Grit

2. ✖ Grade

3. ✓ Structure

4. ✗ Grain

Question Number : 118 Question Id : 1592075933 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The surface finishing operation which is performed after polishing to provide a high lustre to the polished surface is

Options :

1. ✗ Lapping

2. ✗ Honing

3. ✗ Superfinishing

4. ✓ Buffing

Question Number : 119 Question Id : 1592075934 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The operation through which a metal is cut along a single line, usually a straight line is

Options :

1. ✔ Shearing

2. ✘ Parting

3. ✘ Notching

4. ✘ Trimming

Question Number : 120 Question Id : 1592075935 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The locators which are used to locate work from an external profile or outside edge are

Options :

1. ✘ Vee – locators

2. ✔ Profile locators

Pin locators

3. ✖

Diamond pin locators

4. ✖

Question Number : 121 Question Id : 1592075936 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The degree of closeness of the measured value of a certain quantity with its true value is called

Options :

Accuracy

1. ✔

Precision

2. ✖

Sensitivity

3. ✖

4. ✖

Question Number : 122 Question Id : 1592075937 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None

Correct Marks : 1 Wrong Marks : 0

Limit gauges are used to:

Options :

1. ✖ measure flatness of the component

2. ✖ measure exact size of the component

3. ✔ check if the component dimension lies within permissible limits

4. ✖ measure surface roughness of the component

Question Number : 123 Question Id : 1592075938 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The surface roughness can be measured with

Options :

1. ✔ Talysurf

2. ✖ Autocollimator

3. ✖

Sigma Comparator

Sine bar

4. ✖

Question Number : 124 Question Id : 1592075939 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The tolerances of the dimension $55^{\pm0.02}$ and $40^{+0.02}_{-0.03}$ are

Options :

0.04 and 0.05

1. ✔

0.01 and 0.06

2. ✖

0.03 and 0.07

3. ✖

0.09 and 0.02

4. ✖

Question Number : 125 Question Id : 1592075940 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The straight portion of the surface, on either side of screw is called

Options :

1. ✔ Flank

2. ✖ Crest

3. ✖ Root

4. ✖ Pitch

Question Number : 126 Question Id : 1592075941 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ is an application technology that uses computer software and machinery to facilitate automate manufacturing processes

Options :

1. ✖ Computer aided design

2. ✔ Computer aided manufacturing

3. ✖ Computer aided engineering

Computer integrated manufacturing

4. ✖

Question Number : 127 Question Id : 1592075942 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What happens to labour workforce when FMS concept is used

Options :

1. ✖ Increases

2. ✔ Decreases

3. ✖ Gradually increases with time

4. ✖ Increases and then decreases

Question Number : 128 Question Id : 1592075943 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Several machine tools can be controlled by a central computer in

Options :

1. ✖   Numerical Control machine tool

2. ✖   Computer Numerical Control machine tool

3. ✔   Direct Numerical Control machine tool

4. ✖   Central Computer Numerical Control machine tool

Question Number : 129 Question Id : 1592075944 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

N001 G00 X07000 Y03000 M03N002 Y06000. In this M03 represents

Options :

1. ✖   Absolute command

2. ✔   Start Spindle rotation

3. ✖   Clockwise circular interpolation

4. ✖ Linear interpolation

Question Number : 130 Question Id : 1592075945 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The study of motion without regard to forces is known as

Options :

1. ✖ Actuator

2. ✖ Sensor

3. ✔ Kinematics

4. ✖ Dynamics

Question Number : 131 Question Id : 1592075946 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In polytropic process equation PV^n = Constant, if n=0, the process is termed as

Options :

1. ✖ Isochoric

2. ✔ Isobaric

3. ✖ Isothermal

4. ✖ Adiabatic.

Question Number : 132 Question Id : 1592075947 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In an internal combustion engine, during the compression stroke the heat rejected to the cooling water is 50kJ/kg and the work input is 100 kJ/kg. The change in internal energy is

Options :

1. ✖ -50kJ/kg

2. ✖ 150kJ/kg

3. ✔ 50kJ/kg

4. ✖ -150 kJ/kg.

Question Number : 133 Question Id : 1592075948 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The heat required to raise unit mass of a solid or liquid through one degree temperature rise is called as

Options :

1. ✖   Enthalpy

2. ✖   Entropy

3. ✖   Calorific value

4. ✔   Specific heat

Question Number : 134 Question Id : 1592075949 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

"The internal energy of a perfect gas is a function of the absolute temperature only" This statement is given by

Options :

1. ✖   Dalton's law

2. ✖ Avagadro's law

3. ✔ Joule's law

4. ✖ Gaylussac's law.

Question Number : 135 Question Id : 1592075950 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The first stage in the formation of a coal is

Options :

1. ✔ Peat

2. ✖ Bituminous

3. ✖ Semi- anthracite

4. ✖ Anthracite

Question Number : 136 Question Id : 1592075951 Question Type : MCQ Optio

Stoichiometric mixture of air and the fuel is one that contains

Options :

1. ✖ Excess of air

2. ✖ Deficiency of air

3. ✔ Just sufficient oxygen for complete combustion

4. ✖ No air.

The energy liberated by the complete oxidation of a unit mass or volume of a fuel is called as

Options :

1. ✖ Enthalpy

2. ✖ Entropy

3. ✖ Internal energy

4. ✔ Calorific value

Question Number : 138 Question Id : 1592075953 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An Otto cycle consists of the following processes

Options :

1. ✖ Two adiabatic and two isobaric

2. ✖ Two adiabatic and two isothermal

3. ✖ Two adiabatic and two polytropic

4. ✔ Two adiabatic and two isochoric

Question Number : 139 Question Id : 1592075954 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A Carnot engine working between 227^0C and 27^0C produces 120kJ of work. The heat added is

Options :

1. ✔ 300 kJ

2. ✖ 136 kJ

3. ✖ 240 kJ

4. ✖ 24 kJ

Question Number : 140 Question Id : 1592075955 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a four stroke cycle engine

Options :

1. ✖ One power stroke is obtained in each revolution of crank shaft

2. ✔ One power stroke is obtained in every two revolution of crank shaft

3. ✖ One power is obtained in every four revolution of crank shaft.

Power stroke is not obtained in the cycle

4. ✖

Question Number : 141 Question Id : 1592075956 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The total power developed by combustion of fuel in the combustion chamber is called as

Options :

1. ✖ Brake power

2. ✖ Shaft power

3. ✔ Indicated power

4. ✖ Friction power

Question Number : 142 Question Id : 1592075957 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Brake thermal efficiency of an engine is given as

Options :

1. ✔ Brake power / (Mass of fuel x Calorific value)

2. ✖ (Brake power x Mass of fuel) / Calorific value

3. ✖ Mass of fuel / (Brake power x Calorific value)

4. ✖ (Mass of fuel x calorific value) / Brake power

Question Number : 143 Question Id : 1592075958 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A closed cycle constant pressure gas turbine works on

Options :

1. ✖ Stirling cycle

2. ✖ Carnot cycle

3. ✔ Joule cycle

Rankine cycle

4. ✖

Question Number : 144 Question Id : 1592075959 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The main constructional feature of a ram jet engine is

Options :

1. ✖   Having Propeller

2. ✖   Having reduction gears

Absence of compressor and turbine.

3. ✔

4. ✖   Having oxidizer tank

Question Number : 145 Question Id : 1592075960 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The saturation temperature of steam at 6 bar is 158.8^0C, temperature of steam was found to be 170^0C. The steam will be in

Options :

1. ✖ Wet condition

2. ✔ Superheated condition

3. ✖ Dry condition

4. ✖ Saturated condition

Question Number : 146 Question Id : 1592075961 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In which of the following boiler, hot gases flow inside the tubes surrounded by water.

Options :

1. ✖ Babcock and Wilcox boiler

2. ✖ Lamont boiler

3. ✔ Cochran boiler

4. ✖ Benson boiler

Question Number : 147 Question Id : 1592075962 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The boiler draught in which fan is installed near the base of the boiler to force the air through the furnace

Options :

1. ✖ Natural draught

2. ✖ Induced draught

3. ✖ Balanced draught

4. ✔ Forced draught

Question Number : 148 Question Id : 1592075963 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Superheated steam at 2 bar expands in a convergent divergent nozzle. For maximum discharge, the critical pressure at throat will be

Options :

1. ✔ 1.092 bar

2. ✘ 0.546 bar

3. ✘ 0.578 bar

4. ✘ 1.156 bar

Question Number : 149 Question Id : 1592075964 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

During which of following process does heat rejection take place in Carnot vapour cycle

Options :

1. ✔ Isothermal compression

2. ✘ Isentropic compression

3. ✘ Isothermal expansion

4. ✖   Isentropic expansion

Question Number : 150 Question Id : 1592075965 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The state of a substance whose evaporation from its liquid state is complete, is known as

Options :

1. ✖   Vapour

2. ✔   Perfect gas

3. ✖   Steam

4. ✖   Air

Question Number : 151 Question Id : 1592075966 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The reheat cycle in steam power plant is mainly adopted to

Options :

1. ✖ Improve thermal efficiency

2. ✔ Decrease the moisture content in low pressure stages to a safe value

3. ✖ Decrease the capacity of condenser

4. ✖ Recovers the waste heat of boiler

Question Number : 152 Question Id : 1592075967 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Boiler rating is usually defined in terms of

Options :

1. ✖ Maximum temperature of steam in Kelvin

2. ✖ Heat transfer rate in kJ/hr

3. ✔ Steam output in kg/hr

4. ✖ Heat transfer area in square meter

Question Number : 153 Question Id : 1592075968 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A surface condenser used in a steam power station, under cooling of condensate is undesirable due to

Options :

1. ✖ Non absorption of gases in steam

2. ✖ Reduce efficiency of the plant

3. ✔ Increase the cooling water requirements

4. ✖ Increase thermal stresses in the condenser

Question Number : 154 Question Id : 1592075969 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is used to bring down the speed of an impulse steam turbine to practical limits

Options :

1. ✖ Centrifugal governor

2. ✔ Compounding of the turbine

3. ✖ Large flywheel

4. ✖ Gear box

Question Number : 155 Question Id : 1592075970 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Lami's theorem states that if a point is in equilibrium under the action of three concurrent forces, then each force is proportional to the α of the angle between the other two forces, where α stands for

Options :

1. ✖ Sec

2. ✖ Cosec

3. ✔ Sin

4. ✖

Tan

Question Number : 156 Question Id : 1592075971 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Turning of steering wheel of the car is an example of

Options :

1. ✔ Couple

2. ✘ Force

3. ✘ Impulse

4. ✘ Torque

Question Number : 157 Question Id : 1592075972 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The moment of inertia (I) of a triangular section of height **h** and base **b** about an axis passing through the centroid and parallel to the base is given by

Options :

1. ✖ $bh^3/2$

2. ✔ $bh^3/36$

3. ✖ $bh^3/12$

4. ✖ $bh^3/16$

Question Number : 158 Question Id : 1592075973 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The centre of gravity of semi-circle of radius R is

Options :

1. ✖ $R/3\pi$ from the base

2. ✖ $4R/\pi$ from the base

$2R/ \pi$ from the base

3. ✖

$4R/ 3\pi$ from the base

4. ✔

Question Number : 159 Question Id : 1592075974 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ materials are capable of absorbing little elastic deformation and negligible plastic deformation before fracture

Options :

Brittle

1. ✔

Ductile

2. ✖

Plastic

3. ✖

Elastic

4. ✖

Question Number : 160 Question Id : 1592075975 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Poisson's ratio for Rubber varies from

Options :

1. ✖   0.25 to 0.33

2. ✔   0.45 to 0.50

3. ✖   0.1 to 0.40

4. ✖   0.2 to 0.50

Question Number : 161 Question Id : 1592075976 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The point of contra flexure in a loaded beam is one where _____

Options :

1. ✖   The shear force is maximum

2. ✖   The bending moment is maximum

3.

The shear forces change sign

✖

The bending moment changes sign

4. ✔

Question Number : 162 Question Id : 1592075977 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A uniformly distributed load w (kN/m) is acting over the entire length of 8 m long cantilever beam. If the bending moment at the fixed end is 64 kN-m. what is the value of w?

Options :

3

1. ✖

2

2. ✔

6

3. ✖

8

4. ✖

Question Number : 163 Question Id : 1592075978 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None

Correct Marks : 1 Wrong Marks : 0

A beam of 200 mm wide and 200 mm deep is simply supported over a span of 5 meters. If the beam is subjected to a uniformly distributed load of 4 kN/m, find the section modulus of the beam

Options :

1. ✖ $5.33 \times 10^6 \text{ mm}^3$

2. ✖ $6.75 \times 10^6 \text{ mm}^3$

3. ✔ $1.33 \times 10^6 \text{ mm}^3$

4. ✖ $4.16 \times 10^6 \text{ mm}^3$

Question Number : 164 Question Id : 1592075979 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A beam 3 m long simply supported at its ends is carrying a point load of 16 kN at its centre. The moment of inertia of the beam is given as equal to $6 \times 10^7 \text{ mm}^4$. If **E** for the material of the beam is $3 \times 10^5 \text{ mm}^2$. What is the deflection at the centre of the beam?

Options :

1. ✖ 8 mm

2. ✖ 0.8 mm

3. ✖   5 mm

4. ✔   0.5 mm

Question Number : 165 Question Id : 1592075980 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A solid shaft under Torsion, shear stress at the outer surface is

Options :

1. ✖   Minimum

2. ✔   Maximum

3. ✖   Zero

4. ✖   Average

Question Number : 166 Question Id : 1592075981 Question Type : MCQ Optio Shuffling : Y

Display Question Number : Yes Is Question Mandatory : No Calculator : None

Correct Marks : 1 Wrong Marks : 0

Which of the following assumption is not true for theory of torsion

Options :

1. ✖ The material of the shaft is uniform throughout

2. ✖ The twist along the shaft is uniform

3. ✔ Cross section of the shaft, is not plane before and after twist

4. ✖ The shaft is uniform circular cross section throughout

Question Number : 167 Question Id : 1592075982 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The distance measured parallel to the axis between corresponding points on adjacent thread forms in the same axial plane section and on the same side of the axis is called as

Options :

1. ✖ Lead

2. ✖ Depth of thread

3. ✖ Apex

4. ✔ Pitch

Question Number : 168 Question Id : 1592075983 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The types of gears used to connect two intersecting coplanar shaft is

Options :

1. ✖ Spur gear

2. ✔ Bevel gear

3. ✖ Helical gear

4. ✖ Spiral gear

Question Number : 169 Question Id : 1592075984 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

V-belts are suitable for transmission of power between two shafts having

Options :

Long centre distance

1. ✖

Shorter distance

2. ✔

Not used in power transmission

3. ✖

Angular alignment

4. ✖

Question Number : 170 Question Id : 1592075985 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The key that transmits power through frictional resistance only is

Options :

Saddle Key

1. ✔

Sunk Key

2. ✖

Woodruff key

3. ✖

Tangent Key

4. ✖

Question Number : 171 Question Id : 1592075986 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Stud is a Machine element that has

Options :

Threads on both the ends

1. ✔

Threads on only one end

2. ✖

No threads

3. ✖

Threads on one end with head on the other end

4. ✖

Question Number : 172 Question Id : 1592075987 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fluids for which the rate of deformation is proportional to the shear stress are called

Options :

1. ✖ Bingham plastic

2. ✖ Dilatant

3. ✖ Pseudo plastic

4. ✔ Newtonian fluids

Question Number : 173 Question Id : 1592075988 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The continuity equation is the result of application of the following law for the flow field

Options :

1. ✖ First law of thermodynamics

2. ✖ Conservation of energy

3. ✖

Newton second law of motion

Conservation of mass

4. ✔

Question Number : 174 Question Id : 1592075989 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The difference between the energy line and hydraulic gradient line is called

Options :

Static head

1. ✖

Velocity head

2. ✔

Pressure head

3. ✖

Potential head

4. ✖

Question Number : 175 Question Id : 1592075990 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Euler's equation of motion

Options :

1. ✖   Is applicable to any fluid

2. ✔   Considers only gravity and pressure forces acting on an in-viscous fluid

3. ✖   Considers gravity and viscous forces acting on a real fluid

4. ✖   Considers only the pressure forces acting on a real fluid.

Question Number : 176 Question Id : 1592075991 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Loss of head at the exit of pipe is

Options :

1. ✖ $0.5V^2/2g$

2. ✔ $V^2/2g$

3. $\ast$ V^2/g

4. $\ast$ $2V^2/g$

Question Number : 177 Question Id : 1592075992 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Under most practical conditions, the flow in a circular pipe is laminar if

Options :

1. $\ast$ $Re \geq 4000$

2. $\checkmark$ $Re \leq 2300$

3. $\ast$ $Re = 10000$

4. $\ast$ Reynolds number is not applicable

Question Number : 178 Question Id : 1592075993 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When a steady jet of water impinges on a stationary inclined plane surface and if the fluid friction is neglected, the resultant force on the plane

Options :

Is tangential to the surface

1. ✖

Is normal to the surface

2. ✔

Is in the direction of the jet flow

3. ✖

Flow direction cannot be determined

4. ✖

Question Number : 179 Question Id : 1592075994 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

To avoid cavitation, we must ensure that the local pressure everywhere inside the pump should be

Options :

Above the vapour pressure.

1. ✔

Equal to atmospheric pressure

2. ✖

Below the vapour pressure.

3. ✖

Gauge pressure

4. ✖

Question Number : 180 Question Id : 1592075995 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

High specific speed (300rpm to 800rpm) and low heads (below 30 m) indicate that the turbine is

Options :

Pelton wheel

1. ✖

Francis

2. ✖

Kaplan

3. ✔

Propeller

4. ✖

Question Number : 181 Question Id : 1592075996 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A pump is defined as a device which converts

Options :

1. ✖ Hydraulic energy into Mechanical energy

2. ✔ Mechanical energy into Hydraulic energy

3. ✖ Kinetic energy into Mechanical energy

4. ✖ Mechanical energy into Kinetic energy

Question Number : 182 Question Id : 1592075997 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Centrifugal pumps with forward-inclined blades generally have

Options :

1. ✔ A lower maximum efficiency than straight-bladed pumps.

2. ✖ A higher maximum efficiency than straight-bladed pumps.

3. ✖ Equal efficiency

4. ✖ Zero efficiency

Question Number : 183 Question Id : 1592075998 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a turbomachine

Options :

1. ✖ Centrifugal pump

2. ✖ Kaplan turbine

3. ✖ Fans

4. ✔ Reciprocating pump

Question Number : 184 Question Id : 1592075999 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The ability of a material to resist indentation or penetration is called as

Options :

1. ✔ Hardness

2. ✘ Strength

3. ✘ Resistance

4. ✘ Toughness

Question Number : 185 Question Id : 1592076000 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The slow and progressive deformation of a material with time at constant stress is called as

Options :

1. ✘ Fatigue

2. ✔ Creep

3. ✘ Fracture

Brittleness

4. ✖

Question Number : 186 Question Id : 1592076001 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In grey cast iron the carbon is in the form of

Options :

Graphite flakes

1. ✔

Cementite

2. ✖

Iron Carbide

3. ✖

Spheroids

4. ✖

Question Number : 187 Question Id : 1592076002 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

18:4:1 High speed steel contains the following metals respectively

Options :

1. ✖

Tungsten, Vanadium, Chromium

Vanadium, Chromium, Tungsten
2. ✖

Tungsten, Chromium, Vanadium
3. ✔

Chromium, Tungsten, Vanadium
4. ✖

Question Number : 188 Question Id : 1592076003 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Babbit metal is an alloy of the following

Options :

Copper, Tin, Bismuth
1. ✖

Copper, Antimony, Bismuth
2. ✖

Copper, Tin, Chromium
3. ✖

4. ✔

Copper, Antimony, Tin

Question Number : 189 Question Id : 1592076004 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Solid solution of carbon in α- iron is called

Options :

1. ✖ Austenite

2. ✔ Ferrite

3. ✖ Martensite

4. ✖ Pearlite

Question Number : 190 Question Id : 1592076005 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The product from blast furnace is

Options :

1. ✖

Cast Iron

2. ✖   Wrought Iron

3. ✔   Pig Iron

4. ✖   Steel

Question Number : 191 Question Id : 1592076006 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The chemical formula for Cementite is

Options :

1. ✔ Fe_3C

2. ✖ Fe_2C_3

3. ✖ FeC_3

4. ✖ FeC

Question Number : 192 Question Id : 1592076007 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Cupola is used to make

Options :

1. ✖ Pig iron

2. ✖ Wrought iron

3. ✖ Steel

4. ✔ Cast iron

Question Number : 193 Question Id : 1592076008 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

During normalizing operation, the steel castings are cooled in

Options :

1. ✔ Air

2. ✖

An oil bath

3. ✖

A water bath

Vegetable oil

4. ✖

Question Number : 194 Question Id : 1592076009 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Line organization is used in

Options :

Civil engineering constructions

1. ✔

Hospital management

2. ✖

Banking sector

3. ✖

Marketing sector

4. ✖

Question Number : 195 Question Id : 1592076010 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following layouts is suited to job production

Options :

1. ✔ Process layout

2. ✖ Product layout

3. ✖ Plant layout

4. ✖ Functional layout

Question Number : 196 Question Id : 1592076011 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following represents India in ISO

Options :

1. ✖ PFRDA

2. ✖ FSSAI

3. ✔ BIS

4. ✖ BCCI

Question Number : 197 Question Id : 1592076012 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The appellate authority for an industrial dispute is

Options :

1. ✖ Management

2. ✖ Labour court

3. ✔ High/Supreme court

4. ✖ President

Question Number : 198 Question Id : 1592076013 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In inventory control, the economic order quantity is the

Options :

1. ✔ Optimum lot size

2. ✖ Highest level of inventory

3. ✖ Lot corresponding to break-even point

4. ✖ Capability of a plant to produce

Question Number : 199 Question Id : 1592076014 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The grouping of activities into organizational units is called

Options :

1. ✖ Corporate plans

2. ✖ Centralization

Company policy

3. ✖

Departmentation

4. ✔

Question Number : 200 Question Id : 1592076015 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

ISO 9000 stands for

Options :

Quantity management standards

1. ✖

Quality management standards

2. ✔

Qualification management standards

3. ✖

Quality marketing system

4. ✖