Telangana State Council of Higher Education

TS ECET [FDH & B.Sc. (Mathematics)] - 2018

Date of Examination: 09-05-2018

Time of Examination: 10.00 A.M. to 1.00 P.M.

Master Question Paper Copy

Mechanical Engineering

Notations :

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

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

Question Number : 1 Question Id : 5105296613 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If A is square matrix of order 3 and if the matrix obtained by replacing the elements of A with their corresponding cofactors is $\begin{bmatrix} 1 & -2 & 1 \\ 4 & -5 & -2 \\ -2 & 4 & 1 \end{bmatrix}$ then determinant of A is _____

Options :

1. ✖ 9

2. ✖ 16

3. ✔ 3

4. ✖ 4

Question Number : 2 Question Id : 5105296614 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The system of equations $x+y+z=6, x+2y+3z=10, x+2y+\lambda z=K$ is

inconsistent for $\lambda=l$ and $K\neq m$, then (l, m)=

Options :

1. ✖ (3, 7)

2. ✔ (3, 10)

3. ✖ (7, 10)

4. ✖ (10, 4)

Question Number : 3 Question Id : 5105296615 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If A is a square matrix of order n and A=P+Q, where P is symmetric and Q is non symmetric matrices, then P-Q =

Options :

1. ✖ A

2. ✔ A^T

3. ✖ $A+A^T$

4. ✖ $A-A^T$

Question Number : 4 Question Id : 5105296616 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A=\begin{bmatrix}1 & 2 & 2\\ 2 & 1 & x\\ -2 & y & -1\end{bmatrix}$ is orthogonal then _____

Options :

1. ✔ $x=-2, y=2$

2. ✖ $x=-2, y=-2$

3. ✖ $x=2, y=2$

4. ✖ $x=2, y=-2$

Question Number : 5 Question Id : 5105296617 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $X=\begin{bmatrix}1 & 1 & 1\\ 1 & 2 & 3\\ 1 & 3 & k\end{bmatrix}$ is singular matrix then k =

Options :

1. ✖ 2

2. ✖ 3

3. ✖ 4

4. ✔ 5

Question Number : 6 Question Id : 5105296618 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\frac{7x-17}{(x-1)(x-3)}=\frac{m}{x-1}+\frac{k}{x-3}$, then m − k -1=

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ -2

Question Number : 7 Question Id : 5105296619 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A complex number ‘z ‘ having least modulus value and satisfying $|z-2+2i|=1$ is _____

Options :

1. ✖ $\left(2-\frac{1}{\sqrt{2}}\right)(1+i)$

2. ✖ $\left(2+\frac{1}{\sqrt{2}}\right)(1+i)$

3. ✔ $\left(2-\frac{1}{\sqrt{2}}\right)(1-i)$

4. ✖ $\left(2+\frac{1}{\sqrt{2}}\right)(1-i)$

Question Number : 8 Question Id : 5105296620 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the simultaneous equations $x+y=\frac{2\pi}{3}$ and $\cos x+\cos y=\frac{3}{2}$ where x and y are real is _____

Options :

1. ✖ $x=\frac{\pi}{3}, y=\pi$

2. ✖ $x=\pi, y=\frac{\pi}{3}$

3. ✖ $x=\pi, y=\frac{\pi}{2}$

4. ✔ does not exist.

Question Number : 9 Question Id : 5105296621 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If both the distinct roots of the equation $|\sin x|^2 + |\sin x| + b = 0$ in $[0, \pi]$ are real then all the values of b lie in the interval _____

Options :

1. ✖ [-2, 0]

2. ✖ (-2, 0)

3. ✖ [-2, 0)

4. ✔ (-2, 0]

Question Number : 10 Question Id : 5105296622 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\frac{a\cos A + b\cos B + c\cos C}{2s} =$$

Options :

1. ✖ Δ

2. ✖ $\frac{1}{R}$

3. ✔ $\frac{r}{R}$

4. ✖ $\frac{\Delta}{R}$

Question Number : 11 Question Id : 5105296623 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\cos A = \frac{3}{4}$, then the value of $32\sin\frac{A}{2}.\sin\frac{5A}{2}$

Options :

1. ✔ 11

2. ✖ 36

3. ✖ 27

4. ✖ 10

Question Number : 12 Question Id : 5105296624 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $z_1 = 3(\cos 15^0 + i \sin 15^0)$ and $z_2 = 5(\cos 63^0 + i \sin 63^0)$ then $\frac{z_1}{z_2} =$

Options :

1. ✖ $\frac{3}{5}\left[\cos 48^0 + i \sin 48^0\right]$

2. ✔ $\frac{3}{5}\left[\cos 48^0 - i \sin 48^0\right]$

3. ✖ $\frac{3}{5}\left[\cos 78^0 + i \sin 78^0\right]$

4. ✖ $\frac{5}{3}\left[\cos 78^0 - i \sin 78^0\right]$

Question Number : 13 Question Id : 5105296625 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$2\,Tan\frac{1}{7} + Tan^{-1}\frac{1}{13} =$

Options :

1. ✔ $Tan^{-1}\frac{23}{61}$

2. ✖ $Tan^{-1}\frac{14}{61}$

3. ✖ $Tan^{-1}\frac{32}{61}$

4. ✖ $Tan^{-1}\frac{3}{51}$

Question Number : 14 Question Id : 5105296626 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\cos 20^0 \cos 40^0 \cos 80^0 = p$, then $p =$

Options :

1. ✖ $\frac{1}{2}$

2. ✖ $\frac{1}{4}$

3. ✔ $\frac{1}{8}$

4. ✖ 1

Question Number : 15 Question Id : 5105296627 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\sin A \sin (120^0 - A) \sin (120^0 + A) =$

Options :

1. ✖ $\frac{1}{4} \sin A$

2. ✔ $\frac{1}{4} \sin 3A$

3. ✖ $\frac{1}{4} \cos A$

4. ✖ $\frac{1}{4} \cos 3A$

Question Number : 16 Question Id : 5105296628 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\text{Cos } 5^0 - sin\ 25^0 =$

Options :

1. ✖ $\sin 30^0$

2. ✔ $\sin 35^0$

3. ✖ $\sin 45^0$

4. ✖ $\sin 55^0$

Question Number : 17 Question Id : 5105296629 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If n is the length of perpendicular from the point $(3,-2)$ to the straight line

$L \equiv 12x-5y+6=0$ and m is distance of that line L=0 from $12x-5y-7=0$, then ____

Options :

1. ✖ $n+m=2$

2. ✖ $n=m$

3. ✖ $n=2m$

4. ✔ $n=4m$

Question Number : 18 Question Id : 5105296630 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation of the straight line passing through (2, 3) and perpendicular to the line

$4x-3y=10$ is _____

Options :

1. ✖ $3x+4y+18=0$

2. ✔ $3x+4y-18=0$

3. ✖ $3x-4y-18=0$

4. ✖ $3x-4y+18=0$

Question Number : 19 Question Id : 5105296631 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

L is a straight line passing through the point P(1, 2) such that P bisects the portion of the line intercepted between the coordinate axes, then the perpendicular distance of line L from the origin is _____

Options :

1. ✖ $\frac{1}{\sqrt{5}}$

2. ✖ $\frac{2}{\sqrt{5}}$

3. ✖ $\frac{3}{\sqrt{5}}$

4. ✔ $\frac{4}{\sqrt{5}}$

Question Number : 20 Question Id : 5105296632 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the focus of the parabola $(y-2)^2 = 4(x-1)$ is (a, b), then a+b =

Options :

1. ✖ (-1, -2)

2. ✖ (1, 2)

3. ✖ (2, 1)

4. ✔ (2, 2)

Question Number : 21 Question Id : 5105296633 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The function $y = |x| \quad -\infty < x < \infty$ is _____

Options :

1. ✖ Differentiable at x=0

2. ✖ not continuous at x=0

3. ✔ continuous and differentiable at $x \neq 0$

4. ✖ continuous but not differentiable at $x \neq 0$

Question Number : 22 Question Id : 5105296634 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\lim_{x\to 0}\left(\frac{\sqrt{1-\cos 2x}}{x}\right)$$

Options :

1. ✔ Does not exist

2. ✖ 1

3. ✖ -1

4. ✖ 0

Question Number : 23 Question Id : 5105296635 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f(x) = |x^2 - 3x + 2|$ then $\frac{df}{dx} =$

Options :

1. ✔ 2x-3 when x > 2

2. ✖ 3-2x, when x <1

3. ✖ 3-2x when x>2

4. ✖ 2x+3,when 1<x<2

Question Number : 24 Question Id : 5105296636 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $Z = Log_e\left(\frac{xy}{x+y}\right)$, then $x\frac{\partial Z}{\partial x} + y\frac{\partial Z}{\partial y} =$

Options :

1. ✖ 0

2. ✖ 2Z

3. ✔ 1

4. ✖ $\frac{Z}{2}$

Question Number : 25 Question Id : 5105296637 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two cars with equal speed V started from a place are such that one is moving towards East and the other is moving towards North. The rate at which they are separated from each other when they travel same distance is _____

Options :

1. ✔ $V\sqrt{2}$

2. ✖ $\frac{V}{\sqrt{2}}$

3. ✖ $\frac{\sqrt{2}}{V}$

4. ✖ $2V^2$

Question Number : 26 Question Id : 5105296638 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The derivative of $\sin x^2$ with respect to x^5 is _____

Options :

1. ✖ $\frac{\cos x^2}{5x^4}$

2. ✖ $\frac{2\cos x^2}{5x^4}$

3. ✔ $\frac{2\cos x^2}{5x^3}$

4. ✖ $\frac{2\sin x^2}{5x^4}$

Question Number : 27 Question Id : 5105296639 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Options :

1. ✖ $\frac{y}{x(1-y\log x)}$

2. ✔ $\frac{y^2}{x(1-y\log x)}$

3. ✖ $\frac{y^2}{x(1+y\log x)}$

4. ✖ $\frac{y}{(1-y\log x)}$

Question Number : 28 Question Id : 5105296640 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $x = at^2, y = 2at$, then $\frac{d^2y}{dx^2} =$

Options :

1. ✖ $-\frac{1}{t^2}$

2. ✖ $-\frac{1}{2at}$

3. ✔ $-\frac{1}{2at^2}$

4. ✖ $-\frac{1}{2at^4}$

Question Number : 29 Question Id : 5105296641 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $I_1 = \int_0^\infty e^{-x} x^n dx$, then $\int_0^\infty e^{-x^2} x^{2n+1} dx =$

Options :

1. ✖ 0

2. ✔ $\frac{I_1}{2}$

3. ✖ $\frac{I_1}{3}$

4. ✖ $2I_1$

Question Number : 30 Question Id : 5105296642 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\int \frac{\sin 2x}{\sin 5x \sin 3x} dx = A \log \sin 3x + B \log \sin 5x + C$, then A +B =

Options :

1. ✖ 2/7

2. ✖ 1/3

3. ✖ -2/5

4. ✔ 2/15

Question Number : 31 Question Id : 5105296643 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The area of the region bounded by the curve $y = x^2 - x$, x –axis and the line x=2 is _____

Options :

1. ✖ 5/4

2. ✖ 5/3

3. ✔ 5/6

4. ✖ 5/2

Question Number : 32 Question Id : 5105296644 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $0 < x < \frac{\pi}{2}$, then $\int \frac{sinx+cos\,x}{\sqrt{1+sin\,2x}}\,dx =$

Options :

1. ✖ $\frac{1}{x}+c$

2. ✔ $x+c$

3. ✖ $2x+c$

4. ✖ $\frac{2}{x}+c$

Question Number : 33 Question Id : 5105296645 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\int \frac{x^4+1}{x^2+1}\,dx =$

Options :

1. ✖ $\frac{x^3}{3}+x+2Tan^{-1}x+c$

2. ✖ $\frac{x^3}{3}+x+Tan^{-1}x+c$

3. ✔ $\frac{x^3}{3}-x+2Tan^{-1}x+c$

4. ✖ $\frac{x^3}{3}-x+Tan^{-1}x+c$

Question Number : 34 Question Id : 5105296646 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\int \frac{e^x(1-x)}{x^2}dx =$

Options :

1. ✖ $-\frac{1}{xe^x}+C$

2. ✖ $\frac{1}{xe^x}+C$

3. ✔ $-\frac{1}{x}e^x+C$

4. ✖ xe^x+C

Question Number : 35 Question Id : 5105296647 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Options :

1. ✔ $\frac{\pi}{4}$

2. ✖ $\frac{\pi}{6}$

3. ✖ $\frac{\pi}{8}$

4. ✖ π

Question Number : 36 Question Id : 5105296648 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\int_0^{\pi/2} \sin^4 x \cos^2 x \; dx =$$

Options :

1. ✖ $\frac{\pi}{12}$

2. ✔ $\frac{\pi}{32}$

3. ✖ $\frac{\pi}{42}$

4. ✖ $\frac{\pi}{2}$

Question Number : 37 Question Id : 5105296649 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\left(x+2y^3\right)\frac{dy}{dx}=y$

Options :

1. ✖ $y=x^3+cx$

2. ✔ $x=y^3+cy$

3. ✖ $x=y^2+cy$

4. ✖ $y=x^3+cy^2$

Question Number : 38 Question Id : 5105296650 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of $\frac{dy}{dx}=\frac{x^2+4x-9}{x+2}$ is _____

Options :

1. ✖ $y=(x+2)^2-13\log|x+2|+c$

2. ✖ $y=(x+2)^2-5\log|x+2|+c$

3. ✖ $y=\frac{x^2}{2}+2x+13\log|x+2|+c$

4. ✔ $y=\frac{x^2}{2}+2x-13\log|x+2|+c$

Question Number : 39 Question Id : 5105296651 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The differential equation representing the family of curves $y^2=2c(x+\sqrt{c})$, where c being a positive parameter is of _____

Options :

1. ✖ Order 3

2. ✖ Order 2

3. ✔ degree 3

4. ✖ degree 1

Question Number : 40 Question Id : 5105296652 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The differential equation formed by eliminating the arbitrary constants a and b from the

Equation $\frac{x}{a}+\frac{y}{b}=1$ is _____

Options :

1. ✖ $x\ y' = 1$

2. ✖ $x\ y'' = 0$

3. ✔ $y'' = 0$

4. ✖ $y'' = 1$

Question Number : 41 Question Id : 5105296653 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Options :

1. ✔ $Tan^{-1}y = x + \frac{x^3}{3} + c$

2. ✖ $Tan^{-1}y = x - \frac{x^3}{3} + c$

3. ✖ $Cot^{-1}y = x + \frac{x^3}{3} + c$

4. ✖ $Sin^{-1}y = x + \frac{x^3}{3} + c$

Question Number : 42 Question Id : 5105296654 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of the differential equation $y\,dx - x\,dy + \log x\,dx$ is _____

Options :

1. ✖ $c\,x + y + (1-\log x) = 0$

2. ✔ $c\,x - y - (1+\log x) = 0$

3. ✖ $c\,y + x + \log x - 1 = 0$

4. ✖ $c\,x - y + (1+\log x) = 0$

Question Number : 43 Question Id : 5105296655 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of the equation $(D^2 - D - 2)y = \sin 2x$,$(D = \frac{d}{dx})$ is _____

Options :

1. ✔ $y = c_1e^{-x} + c_2e^{2x} + \frac{1}{20}(\cos 2x - 3\sin 2x)$

2. ✖ $y = c_1e^{-x} + c_2e^{-2x} + \frac{1}{20}(\cos 2x + 3\sin 2x)$

3. ✖ $y = c_1e^{-x} + c_2e^{2x} + \frac{1}{20}(\cos 2x - 3\sin 3x)$

4. ✖ $y = c_1e^{x} + c_2e^{-2x} + \frac{1}{20}(\cos 2x + 3\sin 2x)$

Question Number : 44 Question Id : 5105296656 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The particular integral of $(D^2 - 5D + 6)y = e^{4x}$ is _____

Options :

1. ✖ e^{4x}

2. ✖ $-e^{4x}$

3. ✔ $\frac{1}{2}e^{4x}$

4. ✖ $\frac{1}{4}e^{4x}$

Question Number : 45 Question Id : 5105296657 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If L[f(t)] denotes the Laplace Transform of f (t) , then $L[t^2e^{-2t}] =$

Options :

1. ✖ $\frac{1}{(s+2)^3}$

2. ✔ $\frac{2}{(s+2)^3}$

3. ✖ $\frac{1}{(s+2)^2}$

4. ✖ $\frac{2}{(s+2)^2}$

Question Number : 46 Question Id : 5105296658 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$f:\mathbb{R}\to\mathbb{R},\ f(x)=x^2,-\pi\le x\le\pi$ and $f(x+2\pi)=f(x),\forall x\in\mathbb{R}$. If the Fourier series of

f(x) is represented as $f(x)=\sum_{n=0}^{\infty}a_n\cos nx$, then $a_0=$ _____

Options :

1. ✖ $\frac{2\pi^2}{3}$

2. ✔ $\frac{\pi^2}{3}$

3. ✖ $\frac{4\pi^2}{3}$

4. ✖ $\frac{5\pi^2}{3}$

Question Number : 47 Question Id : 5105296659 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$f(t)=2t^2-5,-2\le t\le 2$ and $f(t+4)=f(t)$. If $2t^2-5=\sum_{n=0}^{\infty}A_nCos\left(\frac{n\pi t}{2}\right)$, then $A_1=$

Options :

1. ✖ 0

2. ✔ $\frac{-32}{\pi^2}$

3. ✖ $\frac{1-(-1)^n}{n}\frac{2}{\pi^2}$

4. ✖ $\frac{16}{\pi^2}$

Question Number : 48 Question Id : 5105296660 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the Laplace transform of a function f(t) is F(S) , then $\int_0^\infty f(t)dt =$

Options :

1. ✖ F(1)

2. ✖ $F(\infty)$

3. ✔ F(0)

4. ✖ F(S-1)

Question Number : 49 Question Id : 5105296661 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Mean deviation from median for the data 340, 150, 210, 240, 300, 310, 320

is approximately equal to _____

Options :

1. ✔ 52.8

2. ✖ 54.8

3. ✖ 53.8

4. ✖ 51.8

Question Number : 50 Question Id : 5105296662 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two numbers are chosen at random from {1, 2, 3, 4, 5, 6, 7, 8} at a time. The probability that smaller of the two numbers is not more than 3 is

Options :

1. ✗ $\frac{7}{14}$

2. ✓ $\frac{9}{14}$

3. ✗ $\frac{8}{14}$

4. ✗ $\frac{10}{14}$

Display Number Panel: Yes
Group All Questions: No

Question Number : 51 Question Id : 5105296663 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The dimensional formula for angular momentum is _____

Options :

1. ✗ $M L T^{-1}$

2. ✗ $M L^{-1} T^{-1}$

3. ✓ $M L^{2} T^{-1}$

4. ✗ $M^{1}L^{2}T^{-2}$

Question Number : 52 Question Id : 5105296664 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following has not been expressed in proper unit?

Options :

1. ✖ stress/strain = N/m^2

2. ✖ surface tension = N/m

3. ✔ energy = Kg × m/s

4. ✖ pressure = N/m^2

Question Number : 53 Question Id : 5105296665 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two adjacent sides of a parallelogram are represented by the two vectors I+2J+3K

and 3I-2J+K. What is the area of the parallelogram?

Options :

1. ✖ 8

2. ✔ $8\sqrt{3}$

3. ✖ $3\sqrt{8}$

4. ✖ 192

Question Number : 54 Question Id : 5105296666 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Given the points A= (0, a) and B= (1, 2), what is the value of a if the magnitude of

the vector $\overline{AB}$ is 1?

Options :

1. ✖ 3

2. ✔ 1

3. ✖ 4

4. ✖ 2

Question Number : 55 Question Id : 5105296667 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If A and B are perpendicular, vector A = 5i+7j-3k and B = 2i+2j-ak. What is the value of a?

Options :

1. ✖ -2

2. ✖ 8

3. ✖ -7

4. ✔ -8

Question Number : 56 Question Id : 5105296668 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A block of mass 2 Kg rests on a rough inclined plane making an angle of 30° with the horizontal. The coefficient of static friction between the block and plane is 0.7. The frictional force on the block is _____

Options :

1. ✖ 9.8 N

2. ✔ $0.7 \times 9.8 \times \sqrt{3}$ N

3. ✖ $9.8 \times \sqrt{3}$ N

4. ✖ 0.7×0.9 N

Question Number : 57 Question Id : 5105296669 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A body sliding on a smooth inclined plane required 4 seconds to reach the bottom starting from rest at the top. How much time does it take to cover one-fourth the distance starting from rest at top?

Options :

1. ✖ 1 second

2. ✔ 2 seconds

3. ✖ 4 seconds

4. ✖ 16 seconds

Question Number : 58 Question Id : 5105296670 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A body of mass 2 Kg is hung on a spring balance mounted vertically in a lift. If the lift descends with an acceleration equal to the acceleration due to gravity g, the reading on the spring balance will be changed by _____

Options :

1. ✖ 2 Kg

2. ✖ 4 Kg

3. ✖ 2/g Kg

4. ✔ zero

Question Number : 59 Question Id : 5105296671 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If g is the acceleration due to gravity at the earth surface, the gain in the potential energy of an object of mass is raised, then the surface of the earth to a height equal to the radius R of earth is _____

Options :

1. ✔ (½)mgR

2. ✖ 2mgR

3. ✖ mgR

4. ✖ (¼)mgR

Question Number : 60 Question Id : 5105296672 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A ship of mass 3×10^7Kg initially at rest is pulled by a force of 5×10^4 N through a distance of 3 m. Assume that the resistance due to water is negligible, the speed of the ship is _____

Options :

1. ✖ 1.5 m/s

2. ✖ 60m/s

3. ✔ 0.1 m/s

4. ✖ 5 m/s

Question Number : 61 Question Id : 5105296673 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Clock A is based on oscillations of a spring and clock B is based on pendulum motion. Both clocks run at the same rate on earth. On a planet having the same density as earth but twice the radius, _____

Options :

1. ✖ A will run faster than B

2. ✔ B will run faster than A

3. ✖ both run at the same rate as on earth

4. ✖ both run at equal rates but not the same as on earth

Question Number : 62 Question Id : 5105296674 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The potential energy at a point r when a particle is moving under the central force $F = -Kr^2$ is _____

Options :

1. ✖ K^2/r

2. ✖ K/r

3. ✖ K/r^2

4. ✔ $-K/r$

Question Number : 63 Question Id : 5105296675 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When the body is acted upon by a resultant force, then work done by the resultant force is equal to _____

Options :

1. ✖ its initial kinetic energy

2. ✖ its initial potential energy

3. ✖ change in the kinetic energy

4. ✔ change in momentum

Question Number : 64 Question Id : 5105296676 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A Jet engine works on the principle of _____

Options :

1. ✖ conservation of energy

2. ✖ conservation of mass

3. ✔ conservation of linear momentum

4. ✖ conservation of angular momentum

Question Number : 65 Question Id : 5105296677 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A Particle is vibrating in simple harmonic motion with an amplitude of 4 cm. At what displacement from the equilibrium position is its energy half potential and half kinetic?

Options :

1. ✖ 1 cm

2. ✖ $\sqrt{2}$cm

3. ✖ 2 cm

4. ✔ $2\sqrt{2}$ cm

Question Number : 66 Question Id : 5105296678 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The walls of Hall built for music concerns should _____

Options :

1. ✖ amplify sound

2. ✖ reflect sound

3. ✖ transmit sound

4. ✔ absorb sound

Question Number : 67 Question Id : 5105296679 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When a surrounding body and listener approach each other the pitch appears to rise and when they move away from each other pitch appears to decrease. This is known as _____

Options :

1. ✔ Doppler's principle

2. ✖ Newton's formula

3. ✖ Interference

4. ✖ Sabine's formula

Question Number : 68 Question Id : 5105296680 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An engine driver moving towards a wall with a velocity of 50 m/sec., emits a note of 1.2 KHz. Speed of sound in air is 350 m/sec. The frequency of the note after reflection from the wall as heard by the engine driver is _____

Options :

1. ✖ 1.2 KHz

2. ✔ 1.6 KHz

3. ✖ 0.24 KHz

4. ✖ 2.4 KHz

Question Number : 69 Question Id : 5105296681 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the maximum number of syllables a person can speak in one second?

Options :

1. ✖ 1

2. ✖ 3

3. ✖ 4

4. ✔ 5

Question Number : 70 Question Id : 5105296682 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The speed of sound in air at NTP is 300m/s, if the air pressure becomes four times then the speed of sound will be _____

Options :

1. ✖ 150 m/s

2. ✖ 300 m/s

3. ✔ 600 m/s

4. ✖ 1200 m/s

Question Number : 71 Question Id : 5105296683 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For the efficiency of the Carnot cycle to be maximum, _____

Options :

1. ✔ the temperature of the source should be infinity

2. ✖ the temperature of the sink should be infinity

3. ✖ the temperature of the source should be zero

4. ✖ both should be infinity

Question Number : 72 Question Id : 5105296684 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Specific heat of a gas at constant volume C_v and at constant pressure C_p are related as

_____

Options :

1. ✖ $C_p/C_v = 1\text{-}R/J$

2. ✔ $C_p - C_v = R/J$

3. ✖ $C_p - C_v = J/R$

4. ✖ $C_p + C_v = R/J$

Question Number : 73 Question Id : 5105296685 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the pressure remains constant the volume of the gas will _____

Options :

1. ✔ increase with the increase in temperature

2. ✖ decrease with the increase in temperature

3. ✖ not change with the temperature

4. ✖ become zero

Question Number : 74 Question Id : 5105296686 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A super conducting material when placed in a magnetic field will _____

Options :

1. ✖ attract the magnetic field towards its centre

2. ✖ attract the magnetic field but transfer it into a concentrated zone

3. ✔ repel all the magnetic lines of force passing through it

4. ✖ not influence the magnetic field

Question Number : 75 Question Id : 5105296687 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For long distance communication _____

Options :

1. ✖ grand index fibers are more suitable

2. ✔ single mode step index fibers are more suitable

3. ✖ step index fibers are more suitable

4. ✖ silica fibers are more suitable

Display Number Panel: Yes
Group All Questions: No

Question Number : 76 Question Id : 5105296688 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The set of quantum number for the 19^{th} electron in chromium is _____

Options :

1. ✔ n=4, l=0, m = 0, S=+1/2 or -1/2

2. ✖ n=3, l=2, m = 1, S=+1/2 or -1/2

3. ✖ n=3, l=2, m = -1, S=+1/2 or -1/2

4. ✖ n=4, l=1, m = 0, S=+1/2 or -1/2

Question Number : 77 Question Id : 5105296689 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In which of the following compounds, is coordinate covalent bond present?

Options :

1. ✖ PH_3

2. ✖ H_2O

3. ✔ NH_4OH

4. ✖ HBr

Question Number : 78 Question Id : 5105296690 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Variable valency is shown by _____

Options :

1. ✖ N and O

2. ✔ P and S

3. ✖ F and Cl

4. ✖ N and S

Question Number : 79 Question Id : 5105296691 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the following balanced equation

$$H_2SO_4 + x\,HI \longrightarrow H_2S + YI_2 + ZH_2O$$

The values of x, Y, Z would be _____

Options :

1. ✖ x=4, Y=8, Z=5

2. ✖ x=6, Y=3, Z=4

3. ✔ x=8, Y=4, Z=4

4. ✖ x=3, Y=5, Z=4

Question Number : 80 Question Id : 5105296692 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

50cc of decinormal NaOH solution will be completely neutralised by 'x' ml of decimolar H_2SO_4 solution. The value of 'x' is _____

Options :

1. ✖ 10

2. ✔ 25

3. ✖ 50

4. ✖ 1

Question Number : 81 Question Id : 5105296693 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Arrange the following in the decreasing order of acidity:

I) H_2SO_3 II) H_3PO_4 III) $HClO_3$

Options :

1. ✖ I > II > III

2. ✖ II > III > I

3. ✔ III > II > I

4. ✖ $I > III > II$

Question Number : 82 Question Id : 5105296694 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which anion is the weakest conjugate base?

Options :

1. ✖ $C_2H_5\text{-}O^{\ominus}$

2. ✖ $F^{\ominus}$

3. ✖ $CH_3COO^{\ominus}$

4. ✔ $NO_3^{\ominus}$

Question Number : 83 Question Id : 5105296695 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the preparation of wrought iron from cast iron, the furnace employed is _____

Options :

1. ✖ Electrical

2. ✖ Open hearth

3. ✔ Reverberatory

4. ✖ Blast

Question Number : 84 Question Id : 5105296696 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Number of coulombs of current required to convert completely one mole of $MnO_4^{\ominus}$ ions in acid medium to one mole of Mn^{+2} ions electrically _____

Options :

1. ✖ 96500

2. ✖ 96500 x 2

3. ✖ 96500 x 6

4. ✔ 5 x 96500

Question Number : 85 Question Id : 5105296697 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following elements has the highest value of the electrochemical equivalent?

Options :

1. ✖ Mg

2. ✖ Ca

3. ✔ K

4. ✖ Na

Question Number : 86 Question Id : 5105296698 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The standard reduction potential for Zn^{+2}/Zn and Cu^{+2}/Cu electrodes are -0.76 V and +0.34 V respectively. For the cell reaction $Zn + Cu^{+2} \rightarrow Zn^{+2} + Cu$ the standard e.m.f is

Options :

1. ✔ +1.10 V

2. ✖ -0.42 V

3. ✖ +0.42 V

4. ✖ -1.10 V

Question Number : 87 Question Id : 5105296699 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The type of protection against corrosion applied to marine piers and water box coolers is _____

Options :

1. ✔ Impressed current cathodic protection

2. ✖ Metal rusting

3. ✖ Tinning

4. ✖ Metal painting

Question Number : 88 Question Id : 5105296700 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A metal is dipped separately in different pH solutions of 1, 2, 3 and 4. In which pH solution is the metal easily corroded?

Options :

1. ✔ 1

2. ✖ 2

3. ✖ 3

4. ✖ 4

Question Number : 89 Question Id : 5105296701 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A raw water sample has 300 ppm calcium ions and its $CaCO_3$ equivalent in ppm

is ____

Options :

1. ✖ 625

2. ✔ 750

3. ✖ 1500

4. ✖ 25

Question Number : 90 Question Id : 5105296702 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A Process which removes ionic, non ionic, colloidal and organic matter from water

is _____

Options :

1. ✖ Ion exchange process

2. ✖ Permutit process

3. ✖ Zeolite process

4. ✔ Reverse osmosis

Question Number : 91 Question Id : 5105296703 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The exhausted anion exchange column in the demineralization process is regenerated

by passing a solution of _____

Options :

1. ✖ dil H_2SO_4

2. ✖ dil HCl

3. ✔ dil NaOH

4. ✖ dil NH_4OH

Question Number : 92 Question Id : 5105296704 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following is not an example of addition polymer?

Options :

1. ✖ Polythene

2. ✔ Terylene

3. ✖ Neoprene

4. ✖ Polystyrene

Question Number : 93 Question Id : 5105296705 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is an example of fibre polymer?

Options :

1. ✖ Rubber

2. ✖ PVC

3. ✖ Bakelite

4. ✔ Nylon-66

Question Number : 94 Question Id : 5105296706 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following can enhance the Physical properties of rubber?

Options :

1. ✖ ZnO

2. ✖ Zn stearate

3. ✔ Sulphur

4. ✖ SiO_2

Question Number : 95 Question Id : 5105296707 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The basic component of the smog may be _____

Options :

1. ✖ O_3

2. ✔ O_3 + PAN

3. ✖ PAN + SO_2

4. ✖ O_3 + PAN + SO_3

Question Number : 96 Question Id : 5105296708 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In Antarctica, Ozone depletion is due to the formation of the following Compound(s) _____

Options :

1. ✖ Chlorine nitrate

2. ✖ PAN

3. ✔ Acrolein

4. ✖ SO_2 and SO_3

Question Number : 97 Question Id : 5105296709 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pollutant responsible for smog formation and acid rain is _____

Options :

1. ✔ SO_2

2. ✖ CH_4

3. ✖ He

4. ✖ SO_2Cl_2

Question Number : 98 Question Id : 5105296710 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The normality of 26% (Wt/Vol) solution of ammonia (d=0.55) is approximately ____

Options :

1. ✖ 1.5

2. ✔ 15.3

3. ✖ 0.4

4. ✖ 4

Question Number : 99 Question Id : 5105296711 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Wolframite impurity in Cassiterite is removed by _____

Options :

1. ✖ Liquation

2. ✖ Froth flotation

3. ✔ Electromagnetic separation

4. ✖ Hand picking

Question Number : 100 Question Id : 5105296712 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The highest ranking coal is _____

Options :

1. ✔ Anthracite

2. ✖ Lignite

3. ✖ Bituminous

4. ✖ Peat

Display Number Panel: Yes
Group All Questions: No

Question Number : 101 Question Id : 5105296713 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Relation used to find the tap drill size where T= diameter of the bolt to be used, D=diameter of tap drill and d = depth of the thread is given by _____

Options :

1. ✖ T = D-2d

2. ✖ D = T-d

3. ✔ D = T-2d

4. ✖ T = D+2d

Question Number : 102 Question Id : 5105296714 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The center of a round bar is obtained by _____

Options :

1. ✖ mechanical comparator

2. ✖ hermaphrodite callipers

3. ✖ telescopic gauge

4. ✔ combination square

Question Number : 103 Question Id : 5105296715 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A rebte plane is used to _____

Options :

1. ✖ smoothen the surface

2. ✔ cutting a recess in the plank

3. ✖ cutting grooves

4. ✖ levelling the bottom of grooves

Question Number : 104 Question Id : 5105296716 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Diameter of studs is checked by _____

Options :

1. ✔ ring gauge

2. ✖ depth gauge

3. ✖ air gauge

4. ✖ snap gauge

Question Number : 105 Question Id : 5105296717 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The cross section of a chisel is usually_____

Options :

1. ✖ rectangular

2. ✖ hexagonal

3. ✔ octagonal

4. ✖ square

Question Number : 106 Question Id : 5105296718 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The arbor of a milling machine is used to hold the _____

Options :

1. ✖ spindle

2. ✔ cutting tool

3. ✖ mandrel

4. ✖ work piece

Question Number : 107 Question Id : 5105296719 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In CNC code canned cycle is used to _____

Options :

1. ✖ stop the machine in emergency

2. ✔ perform a sequence of operations repeatedly

3. ✖ pause the machining operation

4. ✖ perform operations in opposite order

Question Number : 108 Question Id : 5105296720 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In centerless grinding, end feed is used to produce _____

Options :

1. ✖ cylindrical components

2. ✔ tapered components

3. ✖ spherical components

4. ✖ hexagonal shape components

Question Number : 109 Question Id : 5105296721 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For finishing IC engine valve seating surface, the following finishing operation is preferred

Options :

1. ✖ honing

2. ✔ lapping

3. ✖ super finishing

4. ✖ burnishing

Question Number : 110 Question Id : 5105296722 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following operations cannot be performed on speed lathe?

Options :

1. ✖ drilling

2. ✔ multiple cutting

3. ✖ facing

4. ✖ thread cutting

Question Number : 111 Question Id : 5105296723 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For welding thick sections, which of the following welding processes is used?

Options :

1. ✔ Electro-slag

2. ✖ TIG

3. ✖ MIG

4. ✖ Ultrasonic

Question Number : 112 Question Id : 5105296724 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In which of the following welding operations, welding rectifiers are used?

Options :

1. ✖ AC welding

2. ✔ DC welding

3. ✖ spot welding

4. ✖ seam welding

Question Number : 113 Question Id : 5105296725 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following materials cannot be cut by Oxy-acetylene flame?

Options :

1. ✖ mild steel

2. ✔ aluminium

3. ✖ stainless steel

4. ✖ cast iron

Question Number : 114 Question Id : 5105296726 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cold forging cannot be used on steel grades which _____

Options :

1. ✔ are sensitive to strain hardening

2. ✖ have high ductility

3. ✖ have coarse grains

4. ✖ have least carbon content

Question Number : 115 Question Id : 5105296727 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Large size bolt heads are made by _____

Options :

1. ✖ swaging

2. ✖ roll forging

3. ✔ forging

4. ✖ hammer forging

Question Number : 116 Question Id : 5105296728 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Box and spark plug spanners are manufactured by _____

Options :

1. ✖ drop forging

2. ✖ upset forging

3. ✔ forming tools

4. ✖ impression die forging

Question Number : 117 Question Id : 5105296729 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Drift is used in forging for the purpose of _____

Options :

1. ✖ making narrow holes

2. ✔ enlarging the punched hole

3. ✖ dividing two halves exactly

4. ✖ necking down a piece of work

Question Number : 118 Question Id : 5105296730 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Swaging is the operation of _____

Options :

1. ✔ forging

2. ✖ hot rolling

3. ✖ extrusion

4. ✖ piercing

Question Number : 119 Question Id : 5105296731 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Permeability of sand is measured by _____

Options :

1. ✔ gas flow rate through sand

2. ✖ flowbility of sand in wet state

3. ✖ bond strength of sand

4. ✖ flowbility of sand in dry state

Question Number : 120 Question Id : 5105296732 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is added to improve plasticity of moulding sand?

Options :

1. ✖ lime stone

2. ✔ magnesia

3. ✖ graphite

4. ✖ dextrin

Question Number : 121 Question Id : 5105296733 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following casting methods is employed for toys manufacturing?

Options :

1. ✖ investment casting

2. ✔ slush casting

3. ✖ permanent mould casting

4. ✖ centrifugal casting

Question Number : 122 Question Id : 5105296734 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Center line average method gives _____

Options :

1. ✖ clearance between the parts

2. ✖ type of fit

3. ✖ center line deviation

4. ✔ surface finish

Question Number : 123 Question Id : 5105296735 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In limits and fits system, basic shaft system is one whose _____

Options :

1. ✖ lower deviation is zero

2. ✔ upper deviation is zero

3. ✖ minimum clearance is zero

4. ✖ maximum clearance is zero

Question Number : 124 Question Id : 5105296736 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following letter symbols is not used in representing dimensional tolerances?

Options :

1. ✖ B

2. ✖ D

3. ✔ L

4. ✖ Z

Question Number : 125 Question Id : 5105296737 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The type of fit suitable for parts such as bushes, bearings which are frequently dismantled:

Options :

1. ✖ medium press fit
2. ✔ transition fit
3. ✖ clearance fit
4. ✖ Interference fit

Question Number : 126 Question Id : 5105296738 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The symbol  is used to represent the tolerance on _____

Options :

1. ✔ flatness
2. ✖ angularity
3. ✖ symmetry
4. ✖ parallelism

Question Number : 127 Question Id : 5105296739 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Poisson's ratio of most of the materials is _____

Options :

1. ✖ less than one
2. ✖ equal to zero
3. ✔ between 0 and 0.5
4. ✖ greater than one

Question Number : 128 Question Id : 5105296740 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which one of the following car components does require toughness property?

Options :

1. ✔ bumper

2. ✖ shock absorber

3. ✖ connecting rod

4. ✖ propeller shaft

Question Number : 129 Question Id : 5105296741 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Gas turbine materials are tested for one of the following:

Options :

1. ✖ toughness

2. ✔ creep

3. ✖ strength

4. ✖ stiffness

Question Number : 130 Question Id : 5105296742 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following pairs is correctly matched?

Options :

1. ✔ Resilience-Resistance deformation

2. ✖ Malleability- ability to roll into sheets

3. ✖ Stiffness – ability to resist indentation

4. ✖ Strength- resistance to deflection

Question Number : 131 Question Id : 5105296743 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Eutectic invariant reaction consists of

Options :

1. ✖ Solid1 + Solid2 ⟷ Solid3

2. ✔ Liquid ⟷ Solid1 + Solid2

3. ✖ Liquid + Solid1 ⟷ Solid2

4. ✖ Solid1 ⟷ Solid2 + Solid3

Question Number : 132 Question Id : 5105296744 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Silicon in steel acts as _____

Options :

1. ✔ de-oxidiser

2. ✖ cold-shotness reducer

3. ✖ red-hardness enhancer

4. ✖ melting point inhibitor

Question Number : 133 Question Id : 5105296745 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ferrite is defined as _____

Options :

1. ✖ substitutional solid solution of carbon in α-iron

2. ✔ interstitial solid solution of carbon in α-iron

3. ✖ substitutional solid solution of carbon in β-iron

4. ✖ interstitial solid solution of carbon in β-iron

Question Number : 134 Question Id : 5105296746 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A composite bar of copper and steel is heated. The ratio of tensile stress in steel and the compressive stress in copper would be considering $E_c=1\times10^6$ Kg/cm^2 and $E_s=2\times10^6$ Kg/cm^2 is _____

Options :

1. ✖ 0.5

2. ✖ 1

3. ✖ 1.5

4. ✔ 2

Question Number : 135 Question Id : 5105296747 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A steel rod of 1 sq. cm cross-section area and 100 cm in length with Young's modulus of elasticity as 200 GPa. It is subjected to an axial pull of 2000 N. The elongation of the rod will be _____

Options :

1. ✖ 0.01 mm

2. ✔ 0.1 mm

3. ✖ 1 mm

4. ✖ 0.001 mm

Question Number : 136 Question Id : 5105296748 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When the shear force diagram is a parabolic curve between two points, it indicates that ____

Options :

1. ✖ point load at the two points

2. ✖ no loading between two points

3. ✖ uniformly distributed load between two points

4. ✔ uniformly varying load between two points

Question Number : 137 Question Id : 5105296749 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Resilience power of spring is 420 J, under the load capacity of 60 kN, the maximum deflection of the spring would be _____

Options :

1. ✖ 12 mm

2. ✔ 14 mm

3. ✖ 16 mm

4. ✖ 18 mm

Question Number : 138 Question Id : 5105296750 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The angle of contact taken in calculation of open belt system is of _____

Options :

1. ✖ idle pulley

2. ✔ smaller pulley

3. ✖ bigger pulley

4. ✖ average of bigger and smaller pulleys

Question Number : 139 Question Id : 5105296751 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When the thickness of the belt is considered, its velocity ratio _____

Options :

1. ✖ decreases

2. ✔ increases

3. ✖ first increases and then decreases

4. ✖ is not affected

Question Number : 140 Question Id : 5105296752 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Stretching in a belt can be controlled by _____

Options :

1. ✔ increasing centre distance

2. ✖ reducing belt speed

3. ✖ increasing pulley diameter

4. ✖ decreasing belt length

Question Number : 141 Question Id : 5105296753 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A roller chain with a pitch of 9 mm is used with driving sprocket that has 20 teeth and turning at 800 rpm. The speed of the chain is _____

Options :

1. ✖ 1.4 m/sec

2. ✖ 1.8 m/sec

3. ✔ 2.4 m/sec

4. ✖ 2.8 m/sec

Question Number : 142 Question Id : 5105296754 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the load carrying capacity of a bolt 7 mm core diameter and tensile strength is not exceeding 60 N/mm^2 ?

Options :

1. ✖ 2210 N

2. ✖ 2120 N

3. ✖ 2320 N

4. ✔ 2310 N

Question Number : 143 Question Id : 5105296755 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A solid circular shaft is subjected to a bending moment 9×10^2 N-m and a torque of 12×10^2 N-m. Its equivalent torque would be _____

Options :

1. ✖ 3×10^2 N-m

2. ✔ 15×10^2 N-m

3. ✖ 18×10^2 N-m

4. ✖ 22×10^2 N-m

Question Number : 144 Question Id : 5105296756 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The key which is used for large heavy duty shaft is _____

Options :

1. ✖ sunk

2. ✖ feather

3. ✖ wood ruff

4. ✔ tangent

Question Number : 145 Question Id : 5105296757 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Generally, the shaft diameter is calculated by using _____

Options :

1. ✖ normal stress theory

2. ✖ maximum strain theory

3. ✔ maximum shear stress theory

4. ✖ distortion energy theory

Question Number : 146 Question Id : 5105296758 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Velocity factor is taken into account in the Lewis equation to consider _____

Options :

1. ✖ accuracy of gear profile

2. ✔ dynamic stresses

3. ✖ plastic deformation of tooth

4. ✖ wear of gear tooth

Question Number : 147 Question Id : 5105296759 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a compound train of wheels, the number of teeth on driver wheels are 60, 40, 24 and the number of teeth on the follower wheels are 30, 20, 12. What is the speed of the last follower when the first driver is running at 15 rpm?

Options :

1. ✖ 80 rpm

2. ✖ 100 rpm

3. ✔ 120 rpm

4. ✖ 140 rpm

Question Number : 148 Question Id : 5105296760 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A pressure vessel is said to be thin cylinder shell when the relation of the shell diameter to its wall thickness is _____

Options :

1. ✖ equal to 10

2. ✖ less than10

3. ✔ greater than 10

4. ✖ equal to 1

Question Number : 149 Question Id : 5105296761 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Quality of the governor can be judged by _____

Options :

1. ✖ swing

2. ✖ lift

3. ✔ sensitivity

4. ✖ range

Question Number : 150 Question Id : 5105296762 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Power supplied to domestic refrigerator is 5 kW. If the COP of the refrigerator is 2, then the rate of rejection would be _____

Options :

1. ✖ 5 kW

2. ✔ 15 kW

3. ✖ 10 kW

4. ✖ 20 kW

Question Number : 151 Question Id : 5105296763 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a hydraulic experiment of a fluid, gauge pressure is found to be 12 bar, then the absolute pressure of fluid is _____

Options :

1. ✖ 10 bar

2. ✖ 11 bar

3. ✖ 12 bar

4. ✔ 13 bar

Question Number : 152 Question Id : 5105296764 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

According to Avogadro's Law, for a given pressure and temperature, each molecule of gas _____

Options :

1. ✔ occupies volume proportional to its molecular weight

2. ✖ occupies volume proportional to its specific weight

3. ✖ occupies volume inversely proportional to its molecular weight

4. ✖ occupies same volume

Question Number : 153 Question Id : 5105296765 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A process in which no heat is supplied or rejected and entropy is constant is known as _____

Options :

1. ✖ isothermal process

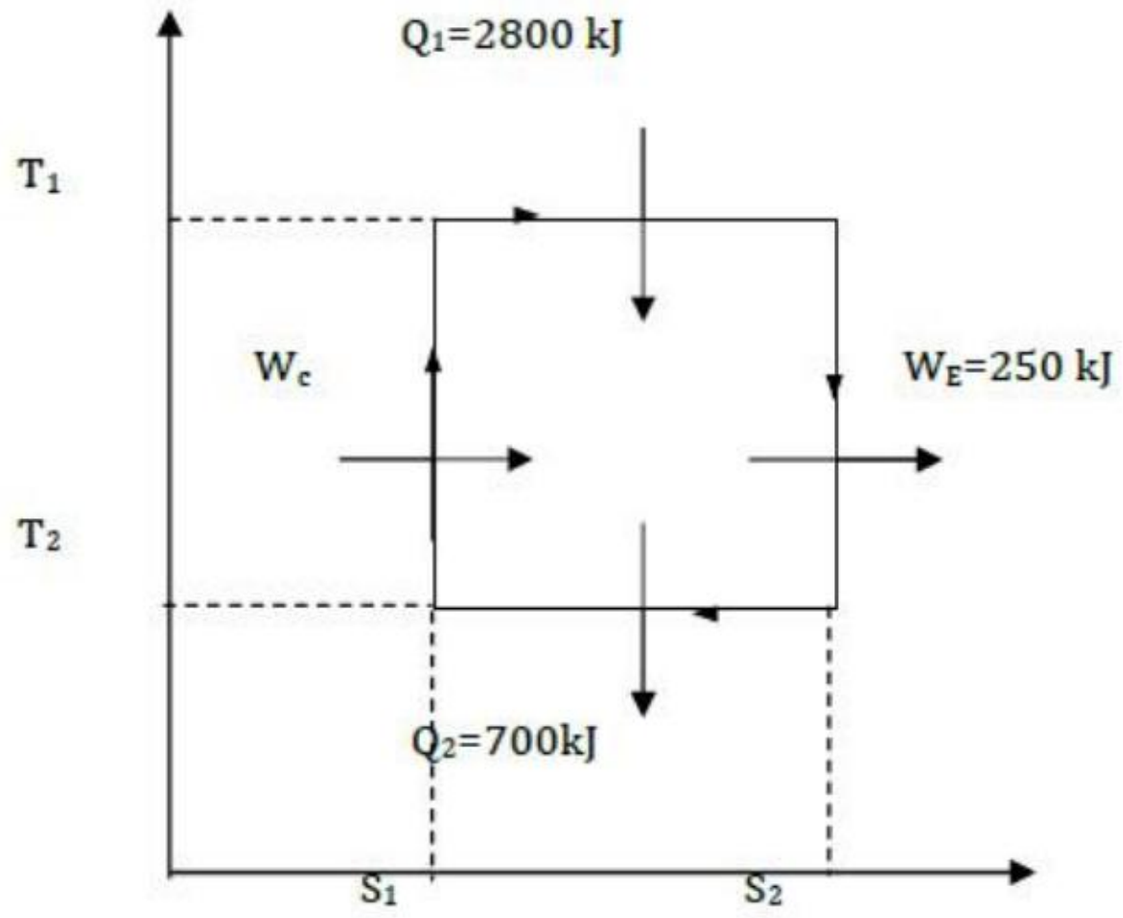
2. ✖ isochoric process

3. ✔ isentropic

4. ✖ polytropic process

Question Number : 154 Question Id : 5105296766 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Net work done during the cyclic process which is shown in figure below is _____



Options :

1. ✖ 1850 kJ

2. ✔ 2100 kJ

3. ✖ 2350 kJ

4. ✖ 3500 kJ

Question Number : 155 Question Id : 5105296767 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a cyclic process, the net heat supplied is 120 kJ/sec. The work obtained from the cycle is equal to _____

Options :

1. ✖ zero

2. ✖ depends upon internal energy

3. ✖ -120 kJ/sec

4. ✔ 120 kJ/sec

Question Number : 156 Question Id : 5105296768 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Heat supplied during the constant volume process is 45 kJ, its internal energy would be _____

Options :

1. ✔ 45 kJ

2. ✖ zero

3. ✖ 27 kJ

4. ✖ 32 kJ

Question Number : 157 Question Id : 5105296769 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following matching pairs is not correct?

Options :

1. ✖ partial pressure- Dalton's Law

2. ✖ pressure-intensive property

3. ✖ zeroth Law- concept of temperature

4. ✔ gas Turbine- Otto cycle

Question Number : 158 Question Id : 5105296770 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The method for the determination of indicated power of multicylinder SI engine is by the use of

_____

Options :

1. ✖ prony brake test

2. ✔ Morse test

3. ✖ motoring test

4. ✖ heat balance sheet

Question Number : 159 Question Id : 5105296771 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Air standard and relative efficiency of an IC engine is 0.8 and 0.7 respectively. Then indicated thermal efficiency approximately is _____

Options :

1. ✖ 0.75

2. ✖ 0.15

3. ✔ 0.56

4. ✖ 0.65

Question Number : 160 Question Id : 5105296772 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For delivering small amount of air at high pressure, _____

Options :

1. ✔ reciprocating air compressors are used

2. ✖ rotary air compressors are used

3. ✖ air engines are used

4. ✖ centrifugal compressors are used

Question Number : 161 Question Id : 5105296773 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ramjet moves with _____

Options :

1. ✔ supersonic speed

2. ✖ sonic speed

3. ✖ subsonic speed

4. ✖ constant speed

Question Number : 162 Question Id : 5105296774 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The efficiency of a Jet engine is higher at _____

Options :

1. ✖ high speed

2. ✖ low speed

3. ✔ high altitude

4. ✖ low altitude

Question Number : 163 Question Id : 5105296775 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The component of a turbine that transforms the hydraulic energy into mechanical energy is

_____

Options :

1. ✖ spiral casing

2. ✖ guide vanes

3. ✔ runner

4. ✖ draft tube

Question Number : 164 Question Id : 5105296776 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Cavitation in turbine causes _____

Options :

1. ✔ damage to blades

2. ✖ reduction in noise

3. ✖ increase in efficiency

4. ✖ drop in vibrations

Question Number : 165 Question Id : 5105296777 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The function of a draft tube in a hydraulic reaction turbine is _____

Options :

1. ✖ to prevent air to enter into the turbine

2. ✖ to transport water to downstream

3. ✔ to increase the head of water by an amount equal to the height of the runner outlet above the tail race

4. ✖ to run the turbine with full of water

Question Number : 166 Question Id : 5105296778 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The difference between theoretical discharge and actual discharge of a pump is called

_____

Options :

1. ✖ suction head

2. ✔ slip

3. ✖ delivery head

4. ✖ coefficient of discharge

Question Number : 167 Question Id : 5105296779 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The suction and delivery heads of centrifugal pumps are 12m and 8m respectively, its manometric head would be _____

Options :

1. ✖ 4 m

2. ✖ 10 m

3. ✖ 14 m

4. ✔ 20 m

Question Number : 168 Question Id : 5105296780 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Intensifier is a device to _____

Options :

1. ✖ decrease the pressure of the fluid system

2. ✔ increase the pressure of the fluid system

3. ✖ maintain uniform pressure in the fluid system

4. ✖ increase the head of the fluid system

Question Number : 169 Question Id : 5105296781 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A solenoid is a device which converts _____

Options :

1. ✖ electrical energy into heat

2. ✖ heat into mechanical energy

3. ✔ electrical energy into force

4. ✖ mechanical energy into electrical energy

Question Number : 170 Question Id : 5105296782 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Pilot valve is a valve which controls _____

Options :

1. ✖ the piping

2. ✖ supply of electrical energy

3. ✔ another valve

4. ✖ two valves at a time

Question Number : 171 Question Id : 5105296783 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a pneumatic system the piston speed is _____

Options :

1. ✖ proportional to load

2. ✖ independent of load

3. ✔ load dependent

4. ✖ square of the load

Question Number : 172 Question Id : 5105296784 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Protection against over load in a pneumatic system is obtained by using _____

Options :

1. ✖ a sequence valve and pilot valve

2. ✖ a sequence valve and a relief valve

3. ✖ a sequence valve and ball check valve

4. ✔ a sequence valve and shuttle valve

Question Number : 173 Question Id : 5105296785 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The sensible heat of wet steam having dryness fraction 0.7, is 400 kJ then the Latent heat is 500 kJ, the total heat content would be _____

Options :

1. ✔ 750 kJ

2. ✖ 820 kJ

3. ✖ 900 kJ

4. ✖ 940 kJ

Question Number : 174 Question Id : 5105296786 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Critical pressure ratio for super heated steam would be _____

Options :

1. ✖ 0.5

2. ✔ 0.545

3. ✖ 0.582

4. ✖ 0.6

Question Number : 175 Question Id : 5105296787 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Lamount boiler is _____

Options :

1. ✔ high pressure water tube boiler

2. ✖ low pressure water tube boiler

3. ✖ high pressure fire tube boiler

4. ✖ low pressure fire tube boiler

Question Number : 176 Question Id : 5105296788 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Degree of reaction for Parson's Reaction turbine is _____

Options :

1. ✔ 50 %

2. ✖ 65 %

3. ✖ 75%

4. ✖ 80%

Question Number : 177 Question Id : 5105296789 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A turbine is said to have an axial discharge when the steam leaves the blade tip at _____ to the direction of the blade motion.

Options :

1. ✖ 0°

2. ✖ 30°

3. ✖ 60°

4. ✔ 90°

Question Number : 178 Question Id : 5105296790 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The condition for maximum efficiency of Impulse turbine is _____

Options :

1. ✖ $\frac{V_b}{V_1} = \cos\alpha$

2. ✔ $\frac{V_b}{V_1} = \frac{\cos\alpha}{2}$

3. ✖ $\frac{V_b}{V_1} = \cos^2\alpha$

4. ✖ $\frac{V_b}{V_1} = \frac{\cos^2\alpha}{2}$

Question Number : 179 Question Id : 5105296791 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pressure on two sides of the moving blades of an impulse steam turbine is _____

Options :

1. ✖ lower at inlet

2. ✖ higher at inlet

3. ✔ same

4. ✖ may be higher or lower depending upon the quality of entry steam

Question Number : 180 Question Id : 5105296792 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Reheat factor for multi stage steam turbine is defined as _____

Options :

1. ✔ $\frac{\textit{Cumulative enthalpy drop}}{\textit{Isentropic enthalpy drop}}$

2. ✖ $\frac{\textit{Isentropic enthalpy drop}}{\textit{Cumulative enthalpy drop}}$

3. ✖ cumulative enthalpy drop × nozzle efficiency

4. ✖ Stage efficiency × nozzle efficiency

Question Number : 181 Question Id : 5105296793 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In velocity compound steam turbine, the steam expands _____

Options :

1. ✖ in moving blade

2. ✖ in the divergent portion of nozzle

3. ✔ in fixed blade

4. ✖ in the convergent portion of nozzle

Question Number : 182 Question Id : 5105296794 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The purpose of fixed blade in a two row-velocity compound impulse turbine is _____

Options :

1. ✖ to convert heat energy into Kinetic energy

2. ✖ to convert Kinetic energy into heat energy

3. ✔ to change the direction of steam

4. ✖ to convert potential energy to kinetic energy

Question Number : 183 Question Id : 5105296795 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a steam nozzle, the mass flow rate per unit area is maximum, if _____

Options :

1. ✖ $\frac{P_2}{P_1} = \left(\frac{2}{n+1}\right)^{\frac{n-1}{n}}$

2. ✔ $\frac{P_2}{P_1} = \left(\frac{2}{n+1}\right)^{\frac{n}{n-1}}$

3. ✖ $\frac{P_2}{P_1} = \left(\frac{1}{n+1}\right)^{\frac{n}{n+1}}$

4. ✖ $\frac{P_2}{P_1} = \left(\frac{2}{n+1}\right)^{\frac{n+1}{n}}$

Question Number : 184 Question Id : 5105296796 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Enthalpy of refrigerant is increased in the evaporator of the refrigerator is approximately 40 kJ/kg and its COP is 8. The power supplied to the compressor would be _____

Options :

1. ✔ 5 kJ/kg

2. ✖ 48 kJ/kg

3. ✖ 32 kJ/kg

4. ✖ 320 kJ/kg

Question Number : 185 Question Id : 5105296797 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

By using Flash chamber the COP of a vapour compression refrigeration system _____

Options :

1. ✖ decreases

2. ✔ remains constant

3. ✖ increases

4. ✖ depends on flash chamber efficiency

Question Number : 186 Question Id : 5105296798 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Dichloro-diflouro methane is _____

Options :

1. ✖ freon-11

2. ✔ freon-12

3. ✖ freon-21

4. ✖ freon-22

Question Number : 187 Question Id : 5105296799 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Air refrigeration cycle is used in _____

Options :

1. ✖ domestic refrigerator

2. ✖ air conditioning

3. ✔ gas liquefaction

4. ✖ commercial refrigeration

Question Number : 188 Question Id : 5105296800 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In micro motion analysis, a macro chronometer or wink counter is used to record the time in winks. One wink is equal to _____

Options :

1. ✖ 1/20 sec

2. ✖ 1/200 min

3. ✔ 1/2000 min

4. ✖ 1/200 sec

Question Number : 189 Question Id : 5105296801 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\bar{X}$ and $\bar{R}$ charts are used for _____

Options :

1. ✔ process control

2. ✖ analysis of fraction defective

3. ✖ number of defects per unit

4. ✖ percentage error

Question Number : 190 Question Id : 5105296802 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In Therbligs, the following number of elements or motion is used _____

Options :

1. ✔ 18

2. ✖ 16

3. ✖ 15

4. ✖ 14

Question Number : 191 Question Id : 5105296803 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Normally, control charts in SQC, the following limits are adopted _____

Options :

1. ✖ $\pm\sigma$

2. ✖ $\pm 2\sigma$

3. ✖ $\pm 2.5\sigma$

4. ✔ $\pm 3\sigma$

Question Number : 192 Question Id : 5105296804 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In an Emerson efficiency plan, a worker receives only his daily wage and no bonus is paid till his efficiency reaches _____

Options :

1. ✖ $49\frac{1}{2}\%$

2. ✖ $50\frac{2}{3}\%$

3. ✔ $66\frac{2}{3}\%$

4. ✖ $69\frac{1}{2}\%$

Question Number : 193 Question Id : 5105296805 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of workers in a plant equal to 600, number of articles produced per unit time by those workers is 400. Their productivity is _____

Options :

1. ✖ 3/2

2. ✖ 1/2

3. ✔ 2/3

4. ✖ 1/3

Question Number : 194 Question Id : 5105296806 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Surplus material which comes out along the periphery of dies during the forging is called as _____

Options :

1. ✖ sprue loss

2. ✖ scale loss

3. ✖ tonghold loss

4. ✔ flash loss

Question Number : 195 Question Id : 5105296807 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In an inventory control EOQ is _____

Options :

1. ✖ maximum lot size

2. ✖ minimum lot size

3. ✔ optimum lot size

4. ✖ size is not the criteria

Question Number : 196 Question Id : 5105296808 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

As per ISO 9000 quality systems, Quality system is reviewed by _____

Options :

1. ✖ quality records

2. ✔ internal quality audits

3. ✖ statistical techniques

4. ✖ control of non-conformances

Question Number : 197 Question Id : 5105296809 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a scooter engine the cylinder is lubricated by _____

Options :

1. ✖ pressure lubrication

2. ✖ lubricating plug

3. ✔ mixing lubricating oil in the fuel

4. ✖ splash lubrication

Question Number : 198 Question Id : 5105296810 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Aluminium cylinder blocks require _____

Options :

1. ✔ cast iron liner

2. ✖ stainless steel liner

3. ✖ aluminium liners

4. ✖ no liners

Question Number : 199 Question Id : 5105296811 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The crown wheel and pinion is called the _____

Options :

1. ✖ rear axle

2. ✔ final drive

3. ✖ differential

4. ✖ rear drive

Question Number : 200 Question Id : 5105296812 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ackerman steering mechanism uses the _____

Options :

1. ✖ sliding pair

2. ✖ screw pair

3. ✔ turning pair

4. ✖ helical pair