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 :	ELECTRICAL AND ELECTRONICS ENGINEERING 06th May 2024 Shift1
Subject Name :	Electrical and Electronics Engineering
Creation Date :	2024-05-06 19:15:11
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

ELECTRICAL AND ELECTRONICS ENGINEERING

Group Number :	1
Group Id :	7614468
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 :	76144627
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

Sub-Section Number : 1

Sub-Section Id : 76144641

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 1 Question Id : 7614461411 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 $A=\begin{pmatrix} k & 1 \\ 1 & k \end{pmatrix}$ and $\left|A^3\right|=27$, then $k=$

Options :

7614465601. ✖ ± 1

7614465602. ✔ ± 2

7614465603. ✖ ± 4

7614465604. ✖ ± 5

Question Number : 2 Question Id : 7614461412 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 $A=\begin{pmatrix} 1 & -1 \\ 2 & 1 \end{pmatrix}$ satisfies $aA^2+bA+cI=0$, then $b+2c=$

Options :

7614465605. ✔ 4

7614465606. ✖ 2

7614465607. ✖ -4

7614465608. ✖ 3

Question Number : 3 Question Id : 7614461413 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 (x, y, z) be the solution of the system of equations $x+3y+z=3$, $x+4y+2z=3, -x-2y+3z=-6$ .Then $x^2+y^2+z^2=$

Options :

7614465609. ✖ 12

7614465610. ✖ 9

7614465611. ✖ 6

7614465612. ✔ 3

Question Number : 4 Question Id : 7614461414 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 $A=\begin{pmatrix}2 & x+9\\ 1 & 2x\end{pmatrix}$ is invertible,then $x\neq$

Options :

7614465613. ✖ 4

7614465614. ✖ 1

7614465615. ✔ 3

7614465616. ✖ 5

Question Number : 5 Question Id : 7614461415 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 x satisfying $3^{\log_5(x-5)}=\log_5(125)$ is

Options :

7614465617. ✔ 10

7614465618. ✖ 5

7614465619. ✖ 9

7614465620. ✖ 3

Question Number : 6 Question Id : 7614461416 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 $\frac{4x^2+1}{x^3-1}=\frac{A}{x-1}+\frac{Bx+C}{x^2+x+1}$, then $A-B+C=$

Options :

7614465621. ✖ -3

7614465622. ✔ 0

7614465623. ✖ 2

7614465624. ✖ 1

Question Number : 7 Question Id : 7614461417 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 diameter of the circle $(x-1)^2+(y+3)^2=3$ is

Options :

7614465625. ✖ $\sqrt{3}$

7614465626. ✖ $4\sqrt{3}$

7614465627. ✔ $2\sqrt{3}$

7614465628. ✖ 3

Question Number : 8 Question Id : 7614461418 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 circle $x^2+y^2-3x-2y+c=0$ passes through origin, then $c=$

Options :

7614465629. ✖ -1

7614465630. ✖ 1

7614465631. ✔ 0

7614465632. ✖ ∞

Question Number : 9 Question Id : 7614461419 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 latus rectum of parabola $x^2=4y$ is

Options :

7614465633. ✔ 4

7614465634. ✖ 8

7614465635. ✖ 12

7614465636. ✖ 2

Question Number : 10 Question Id : 7614461420 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 the circle $45x^2+45y^2-60x+36y+19=0$ is

Options :

7614465637. ✖ $(0,0)$

7614465638. ✖ $(60,36)$

7614465639. ✖ $(-60,36)$

7614465640. ✔ $(\frac{2}{3},-\frac{2}{5})$

Question Number : 11 Question Id : 7614461421 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

Homogeneous second degree equation $ax^2 + 2hxy + by^2 = 0$ represents two real and distinct lines through origin if

Options :

7614465641. ✔ $h^2 > ab$

7614465642. ✖ $h^2 = ab$

7614465643. ✖ $h^2 < ab$

7614465644. ✖ $h^2 = a + b$

Question Number : 12 Question Id : 7614461422 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 the circle with extremities (1,3) and (5, 7) of the diameter is

Options :

7614465645. ✖ $x^2 + y^2 + 6x + 10y + 26 = 0$

7614465646. ✔ $x^2 + y^2 - 6x - 10y + 26 = 0$

7614465647. ✖ $x^2 + y^2 - 6x + 10y + 26 = 0$

7614465648. ✖ $x^2 + y^2 - 6x - 10y - 26 = 0$

Question Number : 13 Question Id : 7614461423 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 line passing through the points (a,6a) and (5,6) is perpendicular to the line $3x+4y+5 = 0$, then $7a =$

Options :

7614465649. ✖ -5

7614465650. ✖ -3

7614465651. ✔ -1

7614465652. ✖ -2

Question Number : 14 Question Id : 7614461424 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 (0, k), (1,3) and (82,30) are collinear ,then k =

Options :

7614465653. ✔ $\frac{8}{3}$

7614465654. ✖ $\frac{9}{4}$

7614465655. ✖ $\frac{10}{7}$

7614465656. ✖ $\frac{11}{6}$

Question Number : 15 Question Id : 7614461425 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 two parallel sides of a square are $2x+y+7 = 0, 2x+y+5=0$, then the area of that square is (in square units is)

Options :

7614465657. ✖ $\frac{3}{5}$

7614465658. ✔ $\frac{4}{5}$

7614465659. ✖ $\frac{6}{5}$

7614465660. ✖ $\frac{7}{5}$

Question Number : 16 Question Id : 7614461426 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 at two circles $x^2+y^2-4x-2y-4=0, x^2+y^2-12x-8y-12=0$ touches is

Options :

7614465661. ✔ $\left(\frac{-2}{5},\frac{-4}{5}\right)$

7614465662. ✖ $\left(\frac{2}{5},\frac{4}{5}\right)$

7614465663. ✖ $\left(\frac{2}{5},\frac{-4}{5}\right)$

7614465664. ✖ $\left(\frac{-2}{5},\frac{4}{5}\right)$

Question Number : 17 Question Id : 7614461427 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 $x+y=k$ is a normal to the parabola $y^2=12x$,then k =

Options :

7614465665. ✖ 5

7614465666. ✔ 9

7614465667. ✖ 7

7614465668. ✖ 3

Question Number : 18 Question Id : 7614461428 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 set of all points where the function $f(x) = x|x|$ is differentiable is

Options :

7614465669. ✖ $(0, \infty)$

7614465670. ✔ $(-\infty, \infty)$

7614465671. ✖ $(-\infty, 0) \cup (0, \infty)$

7614465672. ✖ $(-\infty, 0)$

Question Number : 19 Question Id : 7614461429 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

$$\lim_{x \to 1} \frac{1 + x + x^2 + \ldots + x^{n-1} - n}{x - 1} =$$

Options :

7614465673. ✖ $n^2 + n$

7614465674. ✖ $\frac{n^2+n}{2}$

7614465675. ✔ $\frac{n^2-n}{2}$

7614465676. ✖ n^2-n

Question Number : 20 Question Id : 7614461430 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 $x=2\cos t, y=2\sin t$,then $\frac{d^2y}{dx^2}$ at $t=\frac{\pi}{4}$ is

Options :

7614465677. ✖ $\frac{1}{\sqrt{2}}$

7614465678. ✔ $-\sqrt{2}$

7614465679. ✖ $\sqrt{3}$

7614465680. ✖ $-\frac{1}{\sqrt{3}}$

Question Number : 21 Question Id : 7614461431 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 the tangent to the curve $y = x^3 - 3x + 2$ at the point $(2, 4)$ is

Options :

7614465681. ✔ $9x - y - 14 = 0$

7614465682. ✖ $9x + y - 14 = 0$

7614465683. ✖ $9x - y + 14 = 0$

7614465684. ✖ $9x + y = 0$

Question Number : 22 Question Id : 7614461432 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 $y = a\log x + bx^2 + x$ has its extreme values at $x = -1$ and $x = 2$, then the values of a and b are respectively are

Options :

7614465685. ✖ $-2, 2$

7614465686. ✖ $-4, 4$

7614465687. ✖

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

7614465688. ✔ $-\frac{1}{2}, 2$

Question Number : 23 Question Id : 7614461433 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 curves $y^2 = 2x$ and $2xy = k$ cut at right angle,then $k^2 =$

Options :

7614465689. ✖ 4

7614465690. ✔ 8

7614465691. ✖ 16

7614465692. ✖ 9

Question Number : 24 Question Id : 7614461434 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 $x^y y^x = 1$,then $\frac{dy}{dx} =$

Options :

7614465693. ✖ $-\frac{y}{x}\left(\frac{x+y\log x}{y+x\log y}\right)$

7614465694. ✖ $\frac{y}{x}\left(\frac{x-\log x}{y+\log y}\right)$

7614465695. ✖ $\frac{y}{x}\left(\frac{y-x\log y}{x+y\log x}\right)$

7614465696. ✔ $-\frac{y}{x}\left(\frac{y+x\log y}{x+y\log x}\right)$

Question Number : 25 Question Id : 7614461435 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 $u=\tan^{-1}\left(\frac{x^3+y^3}{x-y}\right), x\neq y$ and if $x\frac{\partial u}{\partial x}+y\frac{\partial u}{\partial y}-\sin ku=0$,then $k=$

Options :

7614465697. ✖ 3

7614465698. ✖ 4

7614465699. ✔ 2

7614465700. ✖ 5

Question Number : 26 Question Id : 7614461436 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 slope of the tangent to the curve xy=1 at (1,1) is

Options :

7614465701. ✖ -2

7614465702. ✔ -1

7614465703. ✖ 1

7614465704. ✖ 2

Question Number : 27 Question Id : 7614461437 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 function $f(x) = xe^{-x}$ $(x \in R)$ attains a maximum value at $x =$

Options :

7614465705. ✖ 2

7614465706. ✖ 1/e

7614465707. ✔ 1

7614465708. ✖ 3

Question Number : 28 Question Id : 7614461438 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 integral value of $\int \frac{Cos2x}{sin^2x\,Cos^2x}dx =$

Options :

7614465709. ✖ $Cosec^2x - Sec^2x + c$

7614465710. ✖ $Cotx + Tanx + c$

7614465711. ✔ $-Cotx - tanx + c$

7614465712. ✖ $Cosecx - Secx + c$

Question Number : 29 Question Id : 7614461439 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

$\int e^{xCosecx}\,Cosecx(1 - x\,Cotx)dx =$

Options :

7614465713. ✖ $e^{xCotx} + c$

7614465714. ✔ $e^{xCosecx} + c$

7614465715. ✖ $e^{-xCotx} + c$

7614465716. ✖ $e^{-xCos\ ecx} + c$

Question Number : 30 Question Id : 7614461440 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 integral value of $\int_0^{\pi} x\ Sinx\ Cos^4x\ dx$ is

Options :

7614465717. ✖ $\frac{\pi}{10}$

7614465718. ✔ $\frac{\pi}{5}$

7614465719. ✖ $-\frac{\pi}{5}$

7614465720. ✖ $-\frac{\pi}{10}$

Question Number : 31 Question Id : 7614461441 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 area enclosed between the curves $y^2 = x$ and $y = |x|$ is

Options :

7614465721. ✖ $1/3$

7614465722. ✖ 1

7614465723. ✖ $2/3$

7614465724. ✔ $1/6$

Question Number : 32 Question Id : 7614461442 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 of the family of curves $xy = c_1e^x + c_2e^{-x}$ is

Options :

7614465725. ✖ $\frac{d^2y}{dx^2} - 2\frac{dy}{dx} - y = 0$

7614465726. ✔ $x\frac{d^2y}{dx^2} + 2\frac{dy}{dx} - xy = 0$

7614465727. ✖ $x\frac{d^2y}{dx^2} - 2\frac{dy}{dx} - y = 0$

7614465728. ✖ $x^2\frac{d^2y}{dx^2}+2\frac{dy}{dx}-y=0$

Question Number : 33 Question Id : 7614461443 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 the differential equation $\frac{dy}{dx}-x\tan(y-x)=1$ is

Options :

7614465729. ✔ $\sin(y-x)=ce^{\frac{x^2}{2}}$

7614465730. ✖ $\cos(y-x)=ce^{\frac{-x^2}{2}}$

7614465731. ✖ $\sin(y+x)=ce^{\frac{-x^2}{2}}$

7614465732. ✖ $\tan(y-x)=ce^{\frac{x^2}{2}}$

Question Number : 34 Question Id : 7614461444 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 the differential equation $xy\frac{dy}{dx}=\frac{1+y^2}{1+x^2}$ is

Options :

7614465733. ✖ $(1+x)(1+y)=cx^2y^2$

7614465734. ✔ $(1+x^2)(1+y^2)=cx^2$

7614465735. ✖ $(1+x^2)(1+y^2)=cy$

7614465736. ✖ $(1+x^2)(1+y^2)=cxy$

Question Number : 35 Question Id : 7614461445 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 the differential equation $\frac{dy}{dx}-\frac{2}{x}y=2x^3+x$ is

Options :

7614465737. ✔ $y=x^4+x^2\log x+cx^2$

7614465738. ✖ $y=x^3+x^2\log x+cx^2$

7614465739. ✖ $y=x^3+x\log x+cx^2$

7614465740. ✖ $y=x^2+x\log x+cx^3$

Question Number : 36 Question Id : 7614461446 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 the differential equation $\sec^2 y\frac{dy}{dx}+x\tan y=x^3$ is

Options :

7614465741. ✖ $\sin y=x^2+2+ce^{\frac{-x^2}{2}}$

7614465742. ✖ $\cos y=2x^2-1+ce^{\frac{-x^2}{2}}$

7614465743. ✖ $\cot y=x^2-2+ce^{\frac{-x^2}{2}}$

7614465744. ✔ $\tan y=x^2-2+ce^{\frac{-x^2}{2}}$

Question Number : 37 Question Id : 7614461447 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 particular integral of the differential equation $\frac{d^2y}{dx^2}+16y=e^{-3x}+\cos 4x$ is

Options :

7614465745. ✖ $\frac{1}{7}e^{-3x}+\frac{x}{8}\cos 4x$

7614465746. ✖ $\frac{1}{23}e^{-3x}+\frac{x}{8}\cos 4x$

7614465747. ✔ $\frac{1}{25}e^{-3x}+\frac{x}{8}\sin 4x$

7614465748. ✖ $\frac{1}{36}e^{-3x}+\frac{x}{9}\sin 4x$

Question Number : 38 Question Id : 7614461448 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 particular integral of the differential equation $\frac{d^2y}{dx^2}+\frac{dy}{dx}+y=x^2$ is

Options :

7614465749. ✖ x^2+4x

7614465750. ✖ $2x^2-x$

7614465751. ✖ x^2-8x

7614465752. ✔ x^2-2x

Question Number : 39 Question Id : 7614461449 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 $\frac{d^2y}{dx^2}-2\frac{dy}{dx}-15y=0$ subject to the conditions $y'(0)=0, y''(0)=2$ is

Options :

7614465753. ✖ $y=\frac{1}{20}e^{3x}+\frac{1}{12}e^{5x}$

7614465754. ✔ $y=\frac{1}{20}e^{5x}+\frac{1}{12}e^{-3x}$

7614465755. ✖ $y=\frac{1}{12}e^{5x}+\frac{1}{20}e^{-3x}$

7614465756. ✖ $y=\frac{1}{20}e^{-5x}+\frac{1}{12}e^{-3x}$

Question Number : 40 Question Id : 7614461450 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

$L\left\{\int_0^t e^{-u}\sin u\,du\right\}=$

Options :

7614465757. ✖ $\frac{1}{s^2+2s+2}$

7614465758. ✖

$$\frac{s}{s^2+2s+2}$$

7614465759. ✔ $\frac{1}{s\left(s^2+2s+2\right)}$

7614465760. ✖ $\frac{1}{s\left(s^2+2\right)}$

Question Number : 41 Question Id : 7614461451 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 $L\{f(t)\}=\log\left(\frac{s-1}{s}\right)$,then $f(1)=$

Options :

7614465761. ✔ $1-e$

7614465762. ✖ $e-1$

7614465763. ✖ e

7614465764. ✖ $e+1$

Question Number : 42 Question Id : 7614461452 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

$$\int_0^{\infty} \frac{\sin 2t}{t} dt =$$

Options :

7614465765. ✖ π

7614465766. ✖ 0

7614465767. ✖ 2π

7614465768. ✔ $\frac{\pi}{2}$

Question Number : 43 Question Id : 7614461453 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

$$\text{If } L\{t\sinh kt\} = \frac{4s}{\left(s^2-4\right)^2}, \text{then } k =$$

Options :

7614465769. ✖ 1

7614465770. ✖ 4

7614465771. ✔ 2

7614465772.

✖ $\frac{1}{2}$

Question Number : 44 Question Id : 7614461454 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 $L^{-1}\left\{\frac{e^{-s}}{s^2+4s+5}\right\}=f(t)$. If $t>1$,then $f(t)=$

Options :

7614465773. ✖ $e^{-2t}\sin t$

7614465774. ✔ $e^{-2(t-1)}\sin(t-1)$

7614465775. ✖ $e^{-2(t+1)}\sin(t+1)$

7614465776. ✖ $e^{2t}\sin t$

Question Number : 45 Question Id : 7614461455 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 $L\{f(t)\}=\frac{2s-1}{(s+1)(s-2)}$, then $L\{f(4t)\}=$

Options :

7614465777. ✖ $\frac{2(s+2)}{(s-4)(s+8)}$

7614465778. ✖ $\frac{2(s-1)}{(4s+1)(4s-2)}$

7614465779. ✖ $\frac{s-2}{(s-4)(s+8)}$

7614465780. ✔ $\frac{2(s-2)}{(s+4)(s-8)}$

Question Number : 46 Question Id : 7614461456 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 $Y(s)$ is the Laplace transform of the solution $y(t)$ of $y''+y=\sin 3t$, $y(0)=0, y'(0)=0$, then $Y(0)=$

Options :

7614465781. ✖ 0

7614465782. ✖ 3

7614465783. ✔ $\frac{1}{3}$

7614465784. ✖ $\frac{1}{9}$

Question Number : 47 Question Id : 7614461457 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_n in the series expansion of $f(x) = |x|$ in $(-\pi, \pi)$ when n is odd is

Options :

7614465785. ✖ $\frac{4}{\pi n^2}$

7614465786. ✔ $\frac{-4}{\pi n^2}$

7614465787. ✖ $\frac{2}{\pi n^2}$

7614465788. ✖ 0

Question Number : 48 Question Id : 7614461458 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 b_0 in the series expansion of $f(x) = |x\ Sinx|$ in $(-\pi, \pi)$ is

Options :

7614465789. ✔ 0

7614465790. ✖ -2

7614465791. ✖ 2

7614465792. ✖ -1

Question Number : 49 Question Id : 7614461459 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 $f(x) = Sinx$ is expressed as Fourier Cosine series in the interval $(0, \pi)$, then the value of a_0 is

Options :

7614465793. ✖ $\frac{2}{\pi}$

7614465794. ✖ $\frac{1}{\pi}$

7614465795. ✔ $\frac{4}{\pi}$

7614465796. ✖ $\frac{-2}{\pi}$

Question Number : 50 Question Id : 7614461460 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

$\int_0^{\pi} sin6x\ sin4x\ dx =$

Options :

7614465797. ✖ $\frac{\pi}{2}$

7614465798. ✖ π

7614465799. ✖ 1

7614465800. ✔ 0

Physics

Section Id :	76144628
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
Maximum Instruction Time :	0

Sub-Section Number : 1

Sub-Section Id : 76144642

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 51 Question Id : 7614461461 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 equation is dimensionally incorrect for the expression representing displacement 'y' and amplitude 'A' of a particle executing Simple Harmonic Motion with time period 'T'?

Options :

7614465801. ✖ $y = \frac{A}{\sqrt{2}}(\text{Sin}\omega t + \text{Cos}\omega t)$

7614465802. ✖ $y = A\ \text{Sin}\omega t$

7614465803. ✔ $y = \frac{A}{T}\ \text{Sin}(\frac{t}{A})$

7614465804. ✖ $y = A\ \text{Sin}(\frac{4\pi t}{T})$

Question Number : 52 Question Id : 7614461462 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 resultant of two equal forces acting at right angles to each other is 1224 N. Then the magnitude of each force in Newtons.

Options :

7614465805. ✖ 612, 612

7614465806. ✖ 1224, 1224

7614465807. ✔ 865, 865

7614465808. ✖ 432, 432

Question Number : 53 Question Id : 7614461463 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 magnitude of three vectors $\vec{A}, \vec{B}$ & $\vec{C}$ are in order 12,5,13 units and $\vec{A} + \vec{B} = \vec{C}$, then what will be the angle between the vectors $\vec{A}$ & $\vec{B}$

Options :

7614465809. ✔ 90^0

7614465810. ✖ 60^0

7614465811. ✖ 30^0

7614465812. ✖ 45^0

Question Number : 54 Question Id : 7614461464 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 boy pulls a body of mass 50 kg resting on a flat horizontal surface. Calculate the frictional force if the coefficient of friction is 0.2

Options :

7614465813. ✔ $98.1\ kg.m.s^{-2}$

7614465814. ✖ 15 kg

7614465815. ✖ $98.1 \times 10^3\ g.cm.s^{-2}$

7614465816. ✖ 1500 g

Question Number : 55 Question Id : 7614461465 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 projectile is thrown with a velocity u at an angle of θ with the horizontal, then the velocity at maximum height during the projectile motion will be:

Options :

7614465817. ✖ $2u \sin\theta$

7614465818. ✖ $u \sin\theta$

7614465819. ✖ $2u \cos\theta$

7614465820. ✔ u cosθ

Question Number : 56 Question Id : 7614461466 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 child of mass 5 kg is going round a merry-go-round that makes 1 rotation in 3.14 seconds. If the radius of the merry-go-round is 2 m then the centrifugal force on the child will be

Options :

7614465821. ✖ 10 Newton

7614465822. ✖ 20 Newton

7614465823. ✖ 30 Newton

7614465824. ✔ 40 Newton

Question Number : 57 Question Id : 7614461467 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 metal plate of area 100 cm^2 is placed on the surface of a liquid and a force of $1\mu N$ is required to move the plate so as to produce a velocity change 1 cms^{-1} between two successive layers separated by 1 cm. The coefficient of viscosity of the liquid is

Options :

7614465825. ✔ $10^{-4}\ Pa\ s$

7614465826. ✖ $10^{-3}\ Pa\ s$

7614465827. ✖ $10^{-1}\ Pa\ s$

7614465828. ✖ $10\ Pa\ s$

Question Number : 58 Question Id : 7614461468 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

Water rises to a height 'h' in a capillary tube of radius 'r' when immersed in water. The mass of the water in the capillary tube is 'm'. The mass of water that will rise in another capillary tube of radius $\frac{r}{2}$ when immersed in water is

Options :

7614465829. ✖ m

7614465830. ✖ 2m

7614465831. ✔ $\frac{m}{2}$

7614465832. ✖ 4m

Question Number : 59 Question Id : 7614461469 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 for compressible fluid is (the quantities carry their usual meaning)

Options :

7614465833. ✖ $\rho_2 A_1 v_1 = \rho_1 A_2 v_2$

7614465834. ✖ $A_1 v_1 = A_2 v_2$

7614465835. ✖ $\rho_1 v_1 = \rho_2 v_2$

7614465836. ✔ $\rho_1 A_1 v_1 = \rho_2 A_2 v_2$

Question Number : 60 Question Id : 7614461470 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 block of mass 'm' is moving on frictionless horizontal surface with velocity 5m/sec, compresses an ideal spring by 2m and comes to rest. The ratio of mass 'm' of the block to spring constant 'k' is.

Options :

7614465837. ✖ $25:4$

7614465838. ✔ $4:25$

7614465839. ✖ 1: 25

7614465840. ✖ 4 : 1

Question Number : 61 Question Id : 7614461471 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

Match the following:

a) Adiabatic Process	i) no volume change takes place.
b) Isochoric Process	ii) no pressure change takes place.
c) Isobaric Process	iii) no temperature change takes place.
d) Isothermal Process	iv) no heat transfer takes place.

Options :

7614465841. ✖ a-iv, b-iii, c-ii, d-i

7614465842. ✖ a-i, b-iv, c-ii, d-iii

7614465843. ✔ a-iv, b-i, c-ii, d-iii

7614465844. ✖ a-i, b-ii, c-iii, d-iv

Question Number : 62 Question Id : 7614461472 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

First law of thermodynamics represents conservation of

Options :

7614465845. ✖ Pressure

7614465846. ✖ Momentum

7614465847. ✖ Entropy

7614465848. ✔ Energy

Question Number : 63 Question Id : 7614461473 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 of a particle executing Simple Harmonic Motion is given by $x = a\,Cos\frac{\pi t}{2}$ where 'x' and 'a' are in metre. The distance covered by it in the time interval between t = 0 sec to t = 4 sec in metre is

Options :

7614465849. ✖ 0

7614465850. ✖ 2a

7614465851. ✔ 4a

7614465852. ✖ 3a

Question Number : 64 Question Id : 7614461474 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 simple pendulum 80 cm long oscillates with amplitude of 0.02 m. The acceleration at the ends of its path is (take g = 10 ms^{-2})

Options :

7614465853. ✖ 0 ms^{-2}

7614465854. ✔ 0.25 ms^{-2}

7614465855. ✖ 2.5 ms^{-2}

7614465856. ✖ 10 ms^{-2}

Question Number : 65 Question Id : 7614461475 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 particle undergoing Simple Harmonic Motion passes through the mean position with a velocity of 2 ms^{-1}. The velocity of the particle at the point where its displacement is half the amplitude is

Options :

7614465857. ✖ $2\sqrt{3}\,ms^{-1}$

7614465858. ✖ $4\sqrt{3}\,ms^{-1}$

7614465859. ✖ $0\,ms^{-1}$

7614465860. ✔ $\sqrt{3}\, ms^{-1}$

Question Number : 66 Question Id : 7614461476 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 boy standing between two parallel walls fires a gun. He hears the first echo after 4 sec and next after 6 sec. The distance between the two walls is (take velocity of sound in air as 340 m/s)

Options :

7614465861. ✖ 680 m

7614465862. ✖ 1020 m

7614465863. ✔ 1700 m

7614465864. ✖ 340 m

Question Number : 67 Question Id : 7614461477 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 good acoustic hall the distribution of sound should be

Options :

7614465865. ✖ Gradually increasing

7614465866. ✖ Exponentially increasing

7614465867. ✖ Randomly change

7614465868. ✔ Uniform

Question Number : 68 Question Id : 7614461478 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 magnetic poles placed 5cm apart in air attract each other with a force of 100 dyne. How far from each other should they be placed to get the force of attraction 25 dyne?

Options :

7614465869. ✔ 10 cm

7614465870. ✖ 4 cm

7614465871. ✖ 2 cm

7614465872. ✖ 6 cm

Question Number : 69 Question Id : 7614461479 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 Wheatstone bridge, the four arms have each a resistance of 50 ohm. The galvanometer current is:

Options :

7614465873. ✖ 0.05 A

7614465874. ✖ 0.5 A

7614465875. ✔ 0 A

7614465876. ✖ 5 A

Question Number : 70 Question Id : 7614461480 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 transformer, the number of turns in secondary and primary coils are 50 and 200 respectively. If 4 A of current is flowing through the primary, the current flowing through the secondary coil is

Options :

7614465877. ✔ 1 A

7614465878. ✖ 2 A

7614465879. ✖ 3 A

7614465880. ✖ 4 A

Question Number : 71 Question Id : 7614461481 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

Electrons are ejected when a photosensitive material is illuminated by violet light but not by blue light. Would electrons come out from the same material when it is illuminated by red light?

Options :

7614465881. ✖ Yes

7614465882. ✔ No

7614465883. ✖ Yes, if intensity of incident light is increased

7614465884. ✖ Yes, if material is illuminated for a long time

Question Number : 72 Question Id : 7614461482 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

Optical fibres are electrically

Options :

7614465885. ✖ Conductors

7614465886. ✖ Superconductors

7614465887. ✖ Semiconductors

7614465888. ✔ Insulators

Question Number : 73 Question Id : 7614461483 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 superconducting state the material behaves as

Options :

7614465889. ✔ Perfect diamagnetic

7614465890. ✖ Weak diamagnetic

7614465891. ✖ Perfect ferromagnetic

7614465892. ✖ Weak paramagnetic

Question Number : 74 Question Id : 7614461484 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 semiconductors at room temperature

Options :

7614465893. ✖ The conduction band is completely empty

7614465894. ✔ The valence band is partially empty and the conduction band is partially filled

The valence band is completely filled and the conduction band is partially filled

7614465895. ✖

7614465896. ✖ The valence band is completely filled

Question Number : 75 Question Id : 7614461485 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

Semiconductors are doped

Options :

7614465897. ✖ To increase the resistivity

7614465898. ✔ To get the desired level of conductivity

7614465899. ✖ To reduce the conductivity

7614465900. ✖ To get the positive temperature coefficient of resistance

Chemistry

Section Id :	76144629
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 :	76144643
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 76 Question Id : 7614461486 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 neutrons present in an element with atomic number 19 and mass number 39.

Options :

7614465901. ✖ 19

7614465902. ✖ 58

7614465903. ✖ 39

7614465904. ✔ 20

Question Number : 77 Question Id : 7614461487 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 dative bond is present in

Options :

7614465905. ✖ Ammonia

7614465906. ✔ Ammonium ion

7614465907. ✖ Urea

7614465908. ✖ Nitrogen

Question Number : 78 Question Id : 7614461488 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 molecules contains coordinate covalent bond?

Options :

7614465909. ✖ NH_2^-

7614465910. ✖ N_2H_4

7614465911. ✔ H_3O^+

7614465912. ✖ H_2O_2

Question Number : 79 Question Id : 7614461489 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

Concentrated hydrochloric acid contains 37% (by mass) HCl. The density of its solution is 1.18 g/mL. The molarity of HCl is

Options :

7614465913. ✔ 12.0

7614465914. ✖ 16.03

7614465915. ✖ 6.0

7614465916. ✖ 1.20

Question Number : 80 Question Id : 7614461490 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 colloidal solution can be purified by the method of

Options :

7614465917. ✖ Peptization

7614465918. ✔ Dialysis

7614465919. ✖ Mechanical Dispersion

7614465920. ✖ Oxidation

Question Number : 81 Question Id : 7614461491 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 compound that does not act as a Lewis acid.

Options :

7614465921. ✔ $BaCl_2$

7614465922. ✖ $AlCl_3$

7614465923. ✖ BF_3

7614465924. ✖ $BeCl_2$

Question Number : 82 Question Id : 7614461492 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 value of 0.001 M NaOH solution is

Options :

7614465925. ✖ 3

7614465926. ✖ 9

7614465927. ✖ 7

7614465928. ✔ 11

Question Number : 83 Question Id : 7614461493 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 solvent not used for green synthesis is

Options :

7614465929. ✔ Aniline

7614465930. ✖ Room temperature ionic liquids

7614465931. ✖ Bio solvents

7614465932. ✖ Supercritical fluids

Question Number : 84 Question Id : 7614461494 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 these days is celebrated in the form of World Environment Day all around the world?

Options :

7614465933. ✖ July 5th

7614465934. ✖ June 10th

7614465935. ✖ October 20th

7614465936. ✔ June 5th

Question Number : 85 Question Id : 7614461495 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

Extra pure water can be obtained by using

Options :

7614465937. ✖ Lime – Soda process

7614465938. ✖ Permutit process

7614465939. ✖ Ion-exchange process

7614465940. ✔ Electrodialysis process

Question Number : 86 Question Id : 7614461496 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

Sterilization of water can be done by using

Options :

7614465941. ✔ Ozone

7614465942. ✖ Oxygen

7614465943. ✖ Caustic Potash

7614465944. ✖ Hydrogen peroxide

Question Number : 87 Question Id : 7614461497 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 formed at cathode when Pt electrodes are used in the electrolysis of Fused NaCl.

Options :

7614465945. ✖ Cl_2

7614465946. ✖ NaOH

7614465947. ✖ HCl

7614465948. ✔ Na

Question Number : 88 Question Id : 7614461498 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 electrochemical equivalent (z) of copper, when 0.3950 g of copper is deposited by a current of 0.5 amperes in 40 minutes.

Options :

7614465949. ✔ 0.0003292 g

7614465950. ✖ 0.003950 g

7614465951. ✖ 0.0001646 g

7614465952. ✖ 0.00164 g

Question Number : 89 Question Id : 7614461499 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

Extraction of zinc from zinc blende is achieved by

Options :

7614465953. ✖ Electrolytic reduction

7614465954. ✔ Roasting followed by reduction with carbon

7614465955. ✖ Roasting followed by reduction with another metal

7614465956. ✖ Roasting followed by self-reduction

Question Number : 90 Question Id : 7614461500 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 blast furnace iron oxide is reduced by

Options :

7614465957. ✖ Silica

7614465958. ✔ Carbon monoxide

7614465959. ✖ Carbon

7614465960. ✖ Limestone

Question Number : 91 Question Id : 7614461501 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 electrochemical corrosion in acidic environment

Options :

7614465961. ✖ Oxygen evolution occurs

7614465962. ✔ Hydrogen evolution takes place

7614465963. ✖ Oxygen absorption occurs

7614465964. ✖ Hydrogen absorption takes place

Question Number : 92 Question Id : 7614461502 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 cementation of iron with zinc powder is known as

Options :

7614465965. ✔ Sheradising

7614465966. ✖ Galvanizing

7614465967. ✖ Zincing

7614465968. ✖ Tinning

Question Number : 93 Question Id : 7614461503 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 manufactured by the reaction between

Options :

7614465969. ✖ Urea and formaldehyde

7614465970. ✖ Phthalic acid and ethylene glycol

7614465971. ✖ Ethylene glycol and formaldehyde

7614465972. ✔ Phenol and formaldehyde

Question Number : 94 Question Id : 7614461504 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 an elastomer

Options :

7614465973. ✖ Polystyrene

7614465974. ✔ Buna-S rubber

7614465975. ✖ Melamine

7614465976. ✖ Dacron

Question Number : 95 Question Id : 7614461505 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 good fuel has

Options :

7614465977. ✔ Moderate ignition temperature and high calorific value

7614465978. ✖ High ignition temperature and high calorific value

7614465979. ✖ Low ignition temperature and low calorific value

7614465980. ✖ Low ignition temperature and high calorific value

Question Number : 96 Question Id : 7614461506 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 best example of splash lubrication is

Options :

7614465981. ✖ Wick feed lubricator

7614465982. ✔ Ring lubricator

7614465983. ✖ Grease Gun

7614465984. ✖ Pump lubricator

Question Number : 97 Question Id : 7614461507 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

Saturated calomel electrode standard reduction potential value in Volts is

Options :

7614465985. ✖ 0

7614465986. ✖ 0.6990

7614465987. ✖ − 0. 242

7614465988. ✔ + 0.242

Question Number : 98 Question Id : 7614461508 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, E° for the cell is

$$Zn_{(s)} + 2Fe^{3+}_{(aq)} \rightleftharpoons 2Fe^{2+}_{(aq)} + Zn^{2+}_{(aq)}$$

(Standard Reduction potentials of Zn and Fe electrodes are – 0.76V and + 0.77V respectively)

Options :

7614465989. ✔ 1.53 V

7614465990. ✖ 0.01 V

7614465991. ✖ − 1.53 V

7614465992. ✖ 0.78 V

Question Number : 99 Question Id : 7614461509 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 gas that is responsible for Bhopal gas tragedy is

Options :

7614465993. ✔ Methyl isocyanate

7614465994. ✖ Methyl chloroformate

7614465995. ✖ Methyl isopropyl ether

7614465996. ✖ Methyl isobutyrate

Question Number : 100 Question Id : 7614461510 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 gases is largely responsible for acid – rain?

Options :

7614465997. ✖ CO and CO_2

7614465998. ✖ NO and NO_2

7614465999. ✔ SO_2 and NO_2

7614466000. ✖ N_2 and O_2

ELECTRICAL AND ELECTRONICS ENGINEERING

Section Id : 76144630

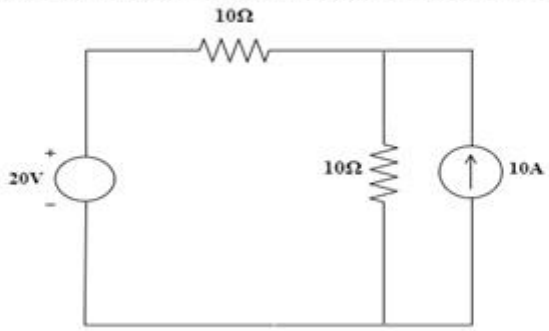
Section Number : 4

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 :	76144644
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 101 Question Id : 7614461511 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 circuit shown below, the voltage across the current source is



Options :

7614466001. ✖ 20 V

7614466002. ✖ Zero

7614466003. ✖ 50 V

7614466004. ✔ 60 V

Question Number : 102 Question Id : 7614461512 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 a given voltage, three heating coils of each resistance of 600 Ω will produce maximum heat in a given time when connected

Options :

7614466005. ✖ All in series

7614466006. ✖ Two parallel resistances in series with the other

7614466007. ✔ All in parallel

7614466008. ✖ Two series resistances in parallel with the other

Question Number : 103 Question Id : 7614461513 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 coefficient of coupling between two magnetically coupled coils depend upon

A) Number of turns of the coils
B) Self inductance of the coils
C) Mutual inductance of the coils

Options :

7614466009. ✖ A and B only

7614466010. ✖ B and C only

7614466011. ✖ C and A only

7614466012. ✔ A,B and C

Question Number : 104 Question Id : 7614461514 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 parallel plate capacitor with fixed dimensions has air as dielectric. It is connected to supply of potential difference of "V" volts and then isolated. The air is then replaced by a dielectric medium of relative permittivity "X".

Options :

7614466013. ✖ The capacitance decreases by "X" times

7614466014. ✔ The capacitance increases by "X" times

7614466015. ✖ The capacitance remains constant

7614466016. ✖ The charge decreases by "X" times

Question Number : 105 Question Id : 7614461515 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 wire is bent into a plane to form of square of "2a" m side and a current of "I" amps is passed through it. The field strength set up at the centre of the square is _____ AT / m

Options :

7614466017. ✖ $\frac{I}{2a}$

7614466018. ✔ $\frac{\sqrt{2}I}{\pi a}$

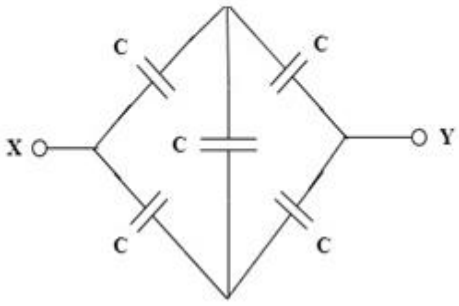
7614466019. ✖ $\frac{I}{2\pi a}$

7614466020. ✖ $\frac{I}{\sqrt{2}\pi a}$

Question Number : 106 Question Id : 7614461516 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 capacitance between the terminals X and Y of the figure shown below is



Options :

7614466021. ✔ C

7614466022. ✖ $2C$

7614466023. ✖ $\frac{C}{2}$

7614466024. ✖ $4C$

Question Number : 107 Question Id : 7614461517 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 batteries are used in communication equipment and portable radar sets in military applications?

Options :

7614466025. ✖ Lead –Acid battery

7614466026. ✖ Nickel - Iron battery

7614466027. ✔ Silver– Zinc battery

7614466028. ✖ Nickel- Cadmium battery

Question Number : 108 Question Id : 7614461518 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 full scale deflection of an ammeter having a resistance R_A is 5 mA and a shunt resistance R_{SH} is connected to increase the range to 100 mA. What is the ratio of R_A to R_{SH}?

Options :

7614466029. ✖ 1/19

7614466030. ✔ 19

7614466031. ✖ 21

7614466032. ✖ 1/21

Question Number : 109 Question Id : 7614461519 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

Instrumental error arise mainly due to

Options :

7614466033. ✖ Gross errors

7614466034. ✖ Random errors

7614466035. ✖ Residual errors

7614466036. ✔ Loading effects

Question Number : 110 Question Id : 7614461520 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 'M' is mutual inductance between current coil & pressure coil of an Electrodynamometer wattmeter and 'θ' is deflection angle, then the scale is linear when

Options :

7614466037. ✖ dM/dθ is proportional to θ

7614466038. ✖ M is constant with θ

7614466039. ✔ dM/dθ is constant with θ

7614466040. ✖ dθ/dM is proportional to θ

Question Number : 111 Question Id : 7614461521 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 type of transducer which requires external power is

Options :

7614466041. ✖ Photovoltaic

7614466042. ✔ Thermistor

7614466043. ✖ Piezoelectric pickup

7614466044. ✖ Thermocouple

Question Number : 112 Question Id : 7614461522 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 resolution of a digital voltmeter on 10 V range is 0.001 V, then 1.346 V on 1 V range will be displayed as

Options :

7614466045. ✔ 1.3460 V

7614466046. ✖ 1.346 V

7614466047. ✖ 1.34 V

7614466048. ✖ 1.35 V

Question Number : 113 Question Id : 7614461523 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 digital frequency meter, a Schmitt trigger is connected between _____ and _____ for frequency triggering

Options :

7614466049. ✖ Gate control Flip-flop and Main gate

7614466050. ✔ Amplifier and Main gate

7614466051. ✖ Crystal oscillator and Amplifier

7614466052. ✖ Time-base selector and Gate control Flip-flop

Question Number : 114 Question Id : 7614461524 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 a progressive simplex lap winding of a commutator machine with " C" coils and " P" poles, the commutator pitch is

Options :

7614466053. ✔ $+1$

7614466054. ✖ -1

7614466055. ✖ $\frac{2(C+1)}{P}$

7614466056. ✖ $\frac{2(C-1)}{P}$

Question Number : 115 Question Id : 7614461525 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 approximate resistance of the load which takes a power of 5 KW from a d.c shunt generator whose external characteristic is given by the equation;

$V = 250 - 0.5\ I_L$

Options :

7614466057. ✔ 12 Ω

7614466058. ✖ 24 Ω

7614466059. ✖ 8 Ω

7614466060. ✖ 15 Ω

Question Number : 116 Question Id : 7614461526 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 six pole, 12 KW, 240 V D.C machine is wave connected. If the same machine is lap connected, the voltage and current ratings of the machine are respectively

Options :

7614466061. ✖ 240 V and 50 A

7614466062. ✔ 80 V and 150 A

7614466063. ✖ 120 V and 100 A

7614466064. ✖ 60 V and 200 A

Question Number : 117 Question Id : 7614461527 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 type of D.C Generator is preferred in welding purposes?

Options :

7614466065. ✖ Series Generator

7614466066. ✖ Shunt Generator

7614466067. ✖ Cumulatively Compound Generator

7614466068. ✔ Differentially Compound Generator

Question Number : 118 Question Id : 7614461528 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 D.C motors is a constant speed motor?

Options :

7614466069. ✔ Shunt motor only

7614466070. ✖ Series motor only

7614466071. ✖ Differentially compound motor only

7614466072. ✖ Both series motor and shunt motor

Question Number : 119 Question Id : 7614461529 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 250 V, 100 A, 500 r.p.m, d.c shunt motor has armature resistance of 0.1 Ω. The speed of the motor when the field flux is reduced to 75% of its normal value with an armature current of 50 A is

Options :

7614466073. ✖ 510 r.p.m

7614466074. ✔ 680 r.p.m

7614466075. ✖ 653 r.p.m

7614466076. ✖ 720 r.p.m

Question Number : 120 Question Id : 7614461530 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

Match the following:

Type of Test	Machines
A) Field Test	P) Small rating machines
B) Hopkinson's Test	Q) D.C shunt machine
C) Swinburne's Test	R) Identical D.C series motors
D)Brake test	S) Identical D.C shunt machines

Options :

7614466077. ✖ A --- R ; B ---- P; C ---- Q; D --- S

7614466078. ✖ A --- S ; B ---- R; C ---- Q; D --- P

7614466079. ✖ A --- P ; B ---- S; C ---- R; D --- Q

7614466080. ✔ A --- R ; B ----S; C ---- Q; D --- P

Question Number : 121 Question Id : 7614461531 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 commutator in a D.C motor converts

Options :

7614466081. ✖ A.C to D.C

7614466082. ✖ D.C to D.C

7614466083. ✔ D.C to A.C

7614466084. ✖ A.C to Half Wave Rectification

Question Number : 122 Question Id : 7614461532 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 waveform in which the peak value and rms value are same is

Options :

7614466085. ✔ Square waveform

7614466086. ✖ Triangular waveform

7614466087. ✖ Saw-tooth waveform

7614466088. ✖ Sinusoidal waveform

Question Number : 123 Question Id : 7614461533 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 statements is correct on the following two sinusoidal waves? $v_A = 222sin(\omega t - 36^0)$ and $v_B = 220sin(\omega t - 54^0)$

Options :

7614466089. ✖ Magnitude of both the waveforms are same

7614466090. ✔ Voltage v_A leads voltage v_B by 18^0

7614466091. ✖ Voltage v_A lags voltage v_B by 18^0

7614466092. ✖ Frequencies of both the waveforms are not same

Question Number : 124 Question Id : 7614461534 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 1-ϕ, 100 V series R-L-C circuit consists of R = 1 Ω, L = 1 H, C = 1 μF. At resonant frequency,

Options :

7614466093. ✖ $V_L = V_R$

7614466094. ✖ $V_C < V_R$

7614466095. ✔ $V_L > V_R$

7614466096. ✖ $V_C = V_R$

Question Number : 125 Question Id : 7614461535 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 frequency of a 3-ϕ, 50 Hz system is increased by 10%. Then its time period is

Options :

7614466097. ✖ Decreased by 10%

7614466098. ✖ Equal to 22 ms

7614466099. ✖ Equal to 18 ms

7614466100. ✔ Decreased by 9.1%

Question Number : 126 Question Id : 7614461536 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 equations of power (P) and phase angle (ϕ) measured by two-wattmeter method of a 3-ϕ system are valid respectively for

Options :

7614466101. ✔ Balanced & unbalanced loads for P & balanced loads for ϕ

7614466102. ✖ Balanced & unbalanced loads for both P and ϕ

7614466103. ✖ Balanced loads for P & unbalanced loads for ϕ

7614466104. ✖ Unbalanced loads for P & unbalanced loads for ϕ

Question Number : 127 Question Id : 7614461537 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 impedances Z_1 and Z_2 are in parallel. If $Z_1 = (3 + j4)\ \Omega$ and the equivalent impedance $Z_{eq} = [(25/6) + j0]\ \Omega$, find Z_2

Options :

7614466105. ✖ $(4 - j3)\ \Omega$

7614466106. ✔ $(3 - j4)\ \Omega$

7614466107. ✖ $(3 + j4)\ \Omega$

7614466108. ✖ $(4 + j3)\ \Omega$

Question Number : 128 Question Id : 7614461538 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 single phase transformer has leakage impedance of (3+j4) Ω. At what power factor, Zero voltage regulation occurs ?

Options :

7614466109. ✖ 0.6 leading

7614466110. ✖ 0.6 lagging

7614466111. ✔ 0.8 leading

7614466112. ✖ 0.8 lagging

Question Number : 129 Question Id : 7614461539 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 supply voltage to a transformer is kept constant, but its frequency is decreased. Then the magnetising current

Options :

7614466113. ✔ Increases

7614466114. ✖ Decreases

7614466115. ✖ Remains constant

7614466116. ✖ First decrease and then increases

Question Number : 130 Question Id : 7614461540 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 3-phase transformer connection is used for large L.V transformers?

Options :

7614466117. ✖ Star – Delta

7614466118. ✖ Delta – Star

7614466119. ✖ Star- Star

7614466120. ✔ Delta –Delta

Question Number : 131 Question Id : 7614461541 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 % weight of conductor in Auto transformer to a 2- winding transformer with the transformation ratio of 0.9 is

Options :

7614466121. ✖ 90 %

7614466122. ✔ 10 %

7614466123. ✖ 100 %

7614466124. ✖ 50 %

Question Number : 132 Question Id : 7614461542 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 percentage change in eddy current losses in a single phase transformer when the supply voltage and frequency are both increased by 10 % is

Options :

7614466125. ✖ 10 %

7614466126. ✖ 20 %

7614466127. ✔ 21 %

7614466128. ✖ 5 %

Question Number : 133 Question Id : 7614461543 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 Z.P.F lagging load is connected on a 3- phase alternator, the

Options :

7614466129. ✔ Armature m.m.f lags field m.m.f by 180^0

7614466130. ✖ Armature m.m.f lags field m.m.f by 90^0

7614466131. ✖ Armature m.m.f lags field m.m.f by 45^0

7614466132. ✖ Armature m.m.f is in phase with field m.m.f

Question Number : 134 Question Id : 7614461544 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 3-phase Synchronous Generator connected to an Infinite bus is operating at leading power factor for constant power. If the field excitation is increased , the operating p.f will

Options :

7614466133. ✔ Change from leading to lagging

7614466134. ✖ Remains constant

7614466135. ✖ Change from leading to zero power factor leading

7614466136. ✖ Change from leading to zero power factor lagging

Question Number : 135 Question Id : 7614461545 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

Pick up the correct statement from the following with respect to synchronous generators

Options :

7614466137. ✖ Cylindrical rotor type synchronous generators are used in low speed turbo generators

7614466138. ✖ Salient pole type synchronous generators are used in high speed hydro electric generators

7614466139. ✔ In cylindrical rotor type synchronous generators, the rotors are of large length and small diameters

7614466140. ✖ In salient pole type synchronous generators, the rotors are of large length and large diameters

Question Number : 136 Question Id : 7614461546 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 power (P_m) developed by a synchronous motor with fixed voltage (V), armature resistance (R_a), synchronous impedance (Z_s) and variable excitation, is proportional to

Options :

7614466141. ✖ $P_m \propto \frac{V^2}{Z_s}$

7614466142. ✖ $P_m \propto \frac{V^2 R_a}{Z_s^2}$

7614466143. ✔ $P_m \propto \frac{V^2}{R_a}$

7614466144. ✖ $P_m \propto \frac{V^2 Z_s}{R_a^2}$

Question Number : 137 Question Id : 7614461547 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 3-ϕ synchronous motor operates at u.p.f. The locus of minimum armature current from no-load to full-load as a function of field current is nearly

Options :

7614466145. ✖ Parallel to y-axis

7614466146. ✖ Linear with negative slope

7614466147. ✖ Parallel to x-axis

7614466148. ✔ Linear with positive slope

Question Number : 138 Question Id : 7614461548 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 reduced 3-ϕ supply is fed to synchronous motor using auto-transformer by short circuiting the main field winding then the

Options :

7614466149. ✔ Motor will start

7614466150. ✖ Motor will not start

7614466151. ✖ Motor will run into synchronism

7614466152. ✖ Field winding will burn

Question Number : 139 Question Id : 7614461549 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 resultant rotating magnetic flux when 3-ϕ supply is fed to 2-pole stator winding is ϕ_{3r}. If 2-ϕ supply is fed, then the resultant rotating magnetic flux ϕ_{2r} is

Options :

7614466153. ✖ $\emptyset_{2r} = \frac{3\emptyset_{3r}}{2}$

7614466154. ✔ $\emptyset_{2r} = \frac{2\emptyset_{3r}}{3}$

7614466155. ✖ $\emptyset_{2r} = \emptyset_{3r}$

7614466156. ✖ $\emptyset_{2r} = \frac{\sqrt{3}\emptyset_{3r}}{2}$

Question Number : 140 Question Id : 7614461550 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 non-operating region of torque (T) - slip (s) characteristics of 3-ϕ induction motor, the approximate relation is

Options :

7614466157. ✖ $T \propto s$

7614466158. ✖ $T \propto \frac{1}{s^2}$

7614466159. ✔ $T \propto \frac{1}{s}$

7614466160. ✖ $T \propto s^2$

Question Number : 141 Question Id : 7614461551 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 torque of a 3-ϕ, 440 V, 50 Hz induction motor is 150 Nm. At the same air-gap flux, if the supply is changed to 3-ϕ, 396 V, 45 Hz, then maximum torque is

Options :

7614466161. ✖ 121.5 Nm

7614466162. ✖ 166.7 Nm

7614466163. ✖ 135 Nm

7614466164. ✔ 150 Nm

Question Number : 142 Question Id : 7614461552 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 Output line in circle diagram of 3-ϕ induction motor is _____ the Torque line and _____ to it.

Options :

7614466165. ✔ above .....not parallel

7614466166. ✖ below .....not parallel

7614466167. ✖ above .....parallel

7614466168. ✖ below .....parallel

Question Number : 143 Question Id : 7614461553 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 T_F and T_B are respective forward and backward torques of 1-ϕ induction motor, then

Options :

7614466169. ✖ $T_F > T_B$ under starting condition

7614466170. ✔ $T_F > T_B$ under running condition

7614466171. ✖ $T_F = T_B$ under running condition

7614466172. ✖ $T_F < T_B$ under starting condition

Question Number : 144 Question Id : 7614461554 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 motors has highest speed under normal running operation?

Options :

7614466173. ✖ Capacitor start & capacitor run induction motor

7614466174. ✖ Stepper motor

7614466175. ✔ Universal motor

7614466176.

✖ Shaded pole motor

Question Number : 145 Question Id : 7614461555 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 generating stations has minimum operating cost?

Options :

7614466177. ✖ Nuclear

7614466178. ✖ Coal

7614466179. ✖ Diesel

7614466180. ✔ Hydro electric

Question Number : 146 Question Id : 7614461556 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 thermal generating station which of the following device raises the temperature of steam above boiling point of water?

Options :

7614466181. ✔ Super heater

7614466182. ✖ Feed water pump

7614466183. ✖ Condenser

7614466184. ✖ Turbine

Question Number : 147 Question Id : 7614461557 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

Match the following with respect to nuclear power station.

(A) Moderator	i) Cadmium
(B) Control rods	j) Sodium Metal
(C) Coolant	k) Graphite
	l) Uranium

Options :

7614466185. ✖ A-l ; B-i ; C-j

7614466186. ✔ A-k ; B-i ; C-j

7614466187. ✖ A-k ; B-j ; C-i

7614466188. ✖ A-l ; B-j ; C-i

Question Number : 148 Question Id : 7614461558 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 which of the following conditions, a hydro-electric generating station will produce more electrical energy in kwh?
Q=Volume of water; H=Water head; and η=Overall efficiency

Options :

7614466189. ✖ $Q=5\times10^6\ m^3$; $H=100m$; $\eta=0.75$

7614466190. ✖ $Q=10\times10^6\ m^3$; $H=50m$; $\eta=0.8$

7614466191. ✔ $Q=15\times10^6\ m^3$; $H=50m$; $\eta=0.9$

7614466192. ✖ $Q=20\times10^6\ m^3$; $H=25m$; $\eta=0.9$

Question Number : 149 Question Id : 7614461559 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 are correct?
Statement (I): The tendency of the flow of current to only the outermost part of the conductor at high frequency is called skin effect
Statement(II): Due to skin effect, the apparent resistance of the conductor decreases

Options :

7614466193. ✔ Only statement (I) is correct

7614466194. ✖ Only statement (II) is correct

7614466195. ✖ Both statements are correct

7614466196. ✖ Both statements are wrong

Question Number : 150 Question Id : 7614461560 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 capacitance between two conductors of a single phase line is 20μF/m. The Capacitance to neutral (or) ground of each phase conductor is

Options :

7614466197. ✖ 20 μF/m

7614466198. ✖ 10 μF/m

7614466199. ✔ 40 μF/m

7614466200. ✖ 5 μF/m

Question Number : 151 Question Id : 7614461561 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 overhead transmission line has a span of 100m, weight of the conductor is 0.5 kg/m, breaking tension 1000 kg, the factor of safety is 2. The sag is

Options :

7614466201. ✖ 2.5 m

7614466202. ✖ 5 m

7614466203. ✖ 0.625 m

7614466204. ✔ 1.25 m

Question Number : 152 Question Id : 7614461562 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 type of insulators are used for transmission lines at river crossings?

Options :

7614466205. ✖ Pin

7614466206. ✖ Suspension

7614466207. ✔ Strain

7614466208. ✖ Disc

Question Number : 153 Question Id : 7614461563 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 a D.C distributor fed from both ends and uniformly loaded, the maximum voltage drop in terms of the total current (I) and the total resistance (R) of the distributor is

Options :

7614466209. ✔ $\frac{IR}{8}$

7614466210. ✖ $\frac{IR}{4}$

7614466211. ✖ $\frac{IR}{2}$

7614466212. ✖ IR

Question Number : 154 Question Id : 7614461564 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

Match the following with respect to substation equipment:

Equipment	Purpose
L) Station Transformer	P) Disconnector switch on no-load
M) Wave trap	Q) Voltage control
N) Isolator	R) Communication
O) ON load tap changer	S) Auxiliary power supply
	T) Disconnector switch on any-load

Options :

7614466213. ✖ L-S ; M-R ; N-T ; O-Q

7614466214. ✔ L-S ; M-R ; N-P ; O-Q

7614466215. ✖ L-Q ; M-T ; N-P ; O-S

7614466216. ✖ L-Q ; M-T ; N-S ; O-P

Question Number : 155 Question Id : 7614461565 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 type of dc link has two conductors of opposite polarity of same magnitude?

Options :

7614466217. ✖ Monoplar only

7614466218. ✔ Bipolar only

7614466219. ✖ Homopolar only

7614466220. ✖ Bipolar and homopolar

Question Number : 156 Question Id : 7614461566 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 length of the cable is tripled, its capacitance is

Options :

7614466221. ✖ Increased to 1.732 times

7614466222. ✖ Remains constant

7614466223. ✔ Tripled

7614466224. ✖ Reduced by three times

Question Number : 157 Question Id : 7614461567 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 solar cell is basically

Options :

7614466225. ✖ A voltage source, controlled by flux of radiation

7614466226. ✔ A Current source, controlled by flux of radiation

7614466227. ✖ An uncontrolled current source

7614466228. ✖ An uncontrolled voltage source

Question Number : 158 Question Id : 7614461568 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 range of wind speed suitable for wind power generation is

Options :

7614466229. ✖ 1 to 4 m/sec

7614466230. ✖ 26 to 50 m/sec

7614466231. ✔ 5 to 25 m/sec

7614466232. ✖ 51 to 75 m/sec

Question Number : 159 Question Id : 7614461569 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 circuit breaker arrangement with current transformer, relay coil and trip coil, which of the following is correct when fault is occurred?

Options :

7614466233. ✖ Trip coil is energized by CT primary and fixed contacts open circuits the moving contacts of CB

7614466234. ✖ Trip coil is energized by CT primary and moving contacts open circuits the fixed contacts of CB

7614466235. ✔ Trip coil is energized by CT secondary and moving contacts open circuits the fixed contacts of CB

7614466236. ✖ Trip coil is energized by CT secondary and fixed contacts open circuits the moving contacts of CB

Question Number : 160 Question Id : 7614461570 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 fuse wire of circular cross-section has a radius of 0.8 mm. The wire blows off at a current of 16 A. Calculate diameter of the wire that will blow off at a current of 2 A.

Options :

7614466237. ✔ 0.2 mm

7614466238. ✖ 0.1 mm

7614466239. ✖ 0.4 mm

7614466240. ✖ 0.8 mm

Question Number : 161 Question Id : 7614461571 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

Plug setting multiplier is defined as the ratio of

Options :

7614466241. ✖ Fault current in relay coil to Rated secondary current of CT

7614466242. ✖ Pick-up current to Fault current in relay coil

7614466243. ✔ Fault current in relay coil to Pick-up current

7614466244. ✖ Rated secondary current of CT to Fault current in relay coil

Question Number : 162 Question Id : 7614461572 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 Distance relay, the

Options :

7614466245. ✔ Torque produced by current element is opposed by the torque produced by voltage element.

7614466246. ✖ Relay will operate when the ratio V/I is more than a predetermined value

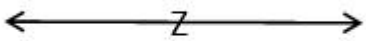
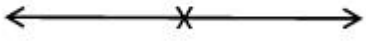
7614466247. ✖ Relay will operate when the ratio V/I is equal to a predetermined value

7614466248. ✖ The torque produced by current element is aided by the torque produced by voltage element.

Question Number : 163 Question Id : 7614461573 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

Match the following relays with their symbolic representations

(a)	Directional relay	(i)	
(b)	Impedance relay	(ii)	
(c)	Differential relay	(iii)	

Options :

7614466249. ✖ (a) – (i); (b) – (iii); (c) – (ii)

7614466250. ✔ (a) – (iii); (b) – (i); (c) – (ii)

7614466251. ✖ (a) – (iii); (b) – (ii); (c) – (i)

7614466252. ✖ (a) – (i); (b) – (ii); (c) – (iii)

Question Number : 164 Question Id : 7614461574 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 lightning arrestor consists of a

Options :

7614466253. ✖ Spark-gap in parallel with a linear resistor

7614466254. ✖ Spark-gap in parallel with a non-linear resistor

7614466255. ✖ Spark-gap in series with a linear resistor

7614466256. ✔ Spark-gap in series with a non-linear resistor

Question Number : 165 Question Id : 7614461575 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 great majority of faults on the power system are of

Options :

7614466257. ✖ Symmetrical nature with 3-phase line fault

7614466258. ✔ Unsymmetrical nature with Single line-to-ground fault

7614466259. ✖ Unsymmetrical nature with Line-to-line fault

7614466260. ✖

Unsymmetrical nature with Double line-to-ground fault

Question Number : 166 Question Id : 7614461576 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 rating of miniature Circuit Breaker (M.C.B) used for $1\frac{1}{2}$ Ton Air conditioner at 230 V, 50Hz, A.C single phase is

Options :

7614466261. ✖ 10 / 15 Amps

7614466262. ✖ 10 Amps

7614466263. ✔ 15 / 20 Amps

7614466264. ✖ 15 / 30 Amps

Question Number : 167 Question Id : 7614461577 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

Size of earth continuity conductor in S.W.G of copper wire used for electrical apparatus of 10 KVA rating is

Options :

7614466265. ✔ 8

7614466266. ✖ 6

7614466267. ✖ 5

7614466268. ✖ 3

Question Number : 168 Question Id : 7614461578 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 lamp gives the same colour as that of neon lamp at the time of starting?

Options :

7614466269. ✖ Mercury Vapour lamp

7614466270. ✖ Fluorescent lamp

7614466271. ✔ Sodium Vapour lamp

7614466272. ✖ Tungsten filament lamp

Question Number : 169 Question Id : 7614461579 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 welding method is used for welding of stainless steel and moist non- ferrous metals?

Options :

7614466273. ✔ Atomic hydrogen arc welding

7614466274. ✖ Carbon arc welding

7614466275. ✖ Helium arc welding

7614466276. ✖ Argon arc welding

Question Number : 170 Question Id : 7614461580 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 dielectric heating is used to heat (H) a slab of insulating material by an a.c supply of "V" volts and frequency of "f" Hz. If the supply voltage is doubled and frequency is halved, the heat produced will be___ time(s) of the earlier heat

Options :

7614466277. ✖ One

7614466278. ✔ Two

7614466279. ✖ Four

7614466280. ✖ Eight

Question Number : 171 Question Id : 7614461581 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 train has schedule speed of 30 Kmph over a level track, distance between stations being 1 km. For station stopping time is 20 seconds, braking retardation of 3 kmphps and maximum speed 25 % greater than average speed, the acceleration required to run the service is

Options :

7614466281. ✖ 1.2 kmphps

7614466282. ✖ 2.4 kmphps

7614466283. ✖ 3.6 kmphps

7614466284. ✔ 1.8 kmphps

Question Number : 172 Question Id : 7614461582 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

Assertion (A): Specific energy consumption for suburban service is less compared to main line service
Reason (R): The distance between the stops in suburban service is less compared to main line service

Options :

7614466285. ✖ A is true, but R is false

7614466286. ✔ A is false, but R is true

7614466287. ✖ Both A and R are false

7614466288. ✖ Both A and R are true

Question Number : 173 Question Id : 7614461583 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 Bipolar junction transistor can act as (switch)

Options :

7614466289. ✖ Open circuit in saturation region and closed circuit in cut-off region

7614466290. ✔ Open circuit in cut-off region and closed circuit in saturation region

7614466291. ✖ Open circuit in active region and closed circuit in saturation region

7614466292. ✖ Open circuit in active region and closed circuit in cut-off region

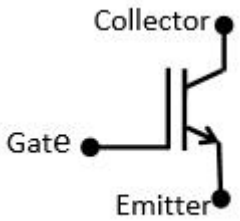
Question Number : 174 Question Id : 7614461584 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

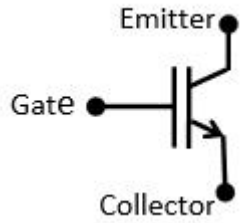
The correct circuit symbol of IGBT is

Options :

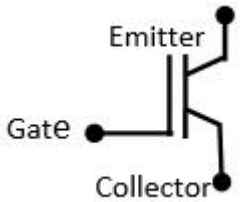
7614466293. ✔



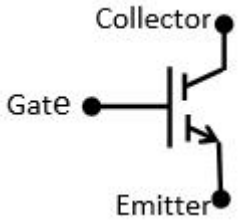
7614466294. ✖



7614466295. ✖



7614466296. ✖



Question Number : 175 Question Id : 7614461585 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 1-ϕ voltage of $v = 70.7sin\omega t$ is fed to a bridge rectifier. The peak inverse voltage ($|PIV|$) across each diode is

Options :

7614466297. ✖ 141.4 V

7614466298. ✖ 200 V

7614466299. ✖ 100 V

7614466300. ✔ 70.7 V

Question Number : 176 Question Id : 7614461586 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 half-wave rectifier with a resistive load, the diode is replaced by a zener diode and its reverse breakdown voltage is more than input ac peak voltage of V_m. The average output voltage is

Options :

7614466301. ✖ $V_m/2\pi$

7614466302. ✖ Zero

7614466303. ✔ V_m/π

7614466304. ✖ $2V_m/\pi$

Question Number : 177 Question Id : 7614461587 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 OpAmp is used as Schmitt trigger. If input signal is an arbitrary periodic waveform, then the output signal is a

Options :

7614466305. ✖ Saw-tooth wave

7614466306. ✔ Square wave

7614466307. ✖ Sinusoidal wave

7614466308. ✖ Triangular wave

Question Number : 178 Question Id : 7614461588 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 current gains of two transistors of Darlington pair are $\beta_1 = 50$ and $\beta_2 = 100$, then the overall current gain β is

Options :

7614466309. ✔ 5150

7614466310. ✖ 150

7614466311. ✖ 2500

7614466312. ✖ 4850

Question Number : 179 Question Id : 7614461589 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 shunt voltage type of feedback configuration provides

Options :

7614466313. ✖ Low input resistance and high output resistance

7614466314. ✔ Low input resistance and low output resistance

7614466315. ✖ High input resistance and high output resistance

7614466316. ✖ High input resistance and low output resistance

Question Number : 180 Question Id : 7614461590 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 sinusoidal oscillators using amplifiers of gain A with positive feedback factor β, the value of the loop gain $A\beta$ is given by:

Options :

7614466317. ✖ $A\beta = 0$

7614466318. ✖ $0 < A\beta < 0.5$

7614466319. ✖ $0.5 < A\beta < 1.0$

7614466320. ✔ $A\beta = 1$

Question Number : 181 Question Id : 7614461591 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 class of transistor amplifier in which transistor is biased near centre of its load line is

Options :

7614466321. ✔ Class A

7614466322. ✖ Class B

7614466323. ✖ Class AB

7614466324. ✖ Class C

Question Number : 182 Question Id : 7614461592 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 common collector configuration of transistor amplifier

Options :

7614466325. ✖ Voltage is amplified

7614466326. ✖ Power is amplified

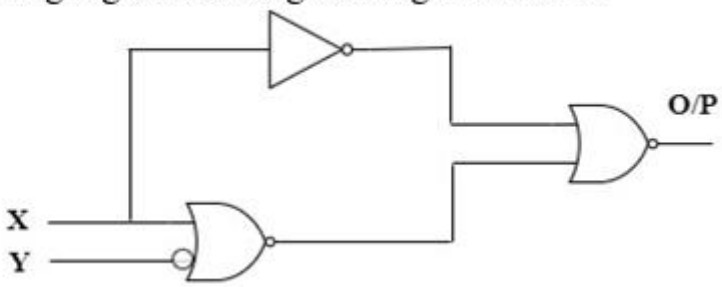
7614466327. ✔ Current is amplified

7614466328. ✖ Energy is amplified

Question Number : 183 Question Id : 7614461593 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 minimized logic gate for the given logic circuit is



Options :

7614466329. ✖ NOR Gate

7614466330. ✖ OR Gate

7614466331. ✖ AND Gate

7614466332. ✔ No logic gate

Question Number : 184 Question Id : 7614461594 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

Represent the decimal number 27 in Excess: 3 code

Options :

7614466333. ✖ 11011

7614466334. ✖ 0110010 0110111

7614466335. ✔ 11110

7614466336. ✖ 10110

Question Number : 185 Question Id : 7614461595 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 five-bit binary counter starts in the 00000 state. The counter state after 182 pulses is

Options :

7614466337. ✔ 10110

7614466338. ✖ 10111

7614466339. ✖ 10001

7614466340. ✖ 10101

Question Number : 186 Question Id : 7614461596 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 Full Adder can be constructed by using

Options :

7614466341. ✖ 2 AND gates, 3 XOR gates and an OR gate

7614466342. ✖ 3 AND gates, 2 XOR gates and 2 OR gates

7614466343. ✔ 3 AND gates, 2 XOR gates and an OR gate

7614466344. ✖ 2 AND gates, 2 XOR gates and 3 OR gates

Question Number : 187 Question Id : 7614461597 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

Identify the correct statement from the following:

Options :

7614466345. ✖ A J-K flip flop is in the toggle condition when J = 1; K = 0

7614466346. ✔ A J-K flip flop is in the toggle condition when J = 1; K = 1

7614466347. ✖ Full adder is a sequential circuit

7614466348. ✖ An Astable mutivibrator has one stable state

Question Number : 188 Question Id : 7614461598 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 10 bit D / A converter has a step size of 10 mV. The full scale output voltage is

Options :

7614466349. ✖ 10.24 V

7614466350. ✔ 10.23 V

7614466351. ✖ 10.25 V

7614466352. ✖ 10.3 V

Question Number : 189 Question Id : 7614461599 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

Express the following Boolean function into SOP (Sum Of Products) in terms of min terms: $Y(A, B, C) = AB + AC + B\bar{C}$

Options :

7614466353. ✔ $ABC + A\bar{B}C + AB\bar{C} + \bar{A}B\bar{C}$

7614466354. ✖ $ABC + \bar{A}\bar{B}C + AB\bar{C} + \bar{A}B\bar{C}$

7614466355. ✖ $\bar{A}\bar{B}\bar{C} + A\bar{B}C + AB\bar{C} + \bar{A}B\bar{C}$

7614466356. ✖ $\bar{A}\bar{B}\bar{C} + \bar{A}B\bar{C} + AB\bar{C} + A\bar{B}\bar{C}$

Question Number : 190 Question Id : 7614461600 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 V_{BO} is forward break-over voltage and V_{BR} is reverse break-down voltage of an SCR when it is triggered by a gate pulse, then

Options :

7614466357. ✔ $V_{BO} < V_{BR}$

7614466358. ✖ $V_{BR} < V_{BO}$

7614466359. ✖ $V_{BO} = 0$

7614466360. ✖ $V_{BO} = V_{BR}$

Question Number : 191 Question Id : 7614461601 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

Three terminals of Uni-junction transistor (UJT) are

Options :

7614466361. ✖ Collector_1, Collector_2 & Base

7614466362. ✔ Emitter, Base_1 & Base_2

7614466363. ✖ Emitter_1, Emitter_2 & Base

7614466364. ✖ Collector, Base_1 & Base_2

Question Number : 192 Question Id : 7614461602 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 frequency of Type A chopper is 2500 Hz. and non-conducting period is 100 μs, find the duty ratio 'α'.

Options :

7614466365. ✔ $\alpha = 0.75$

7614466366. ✖ $\alpha = 0.33$

7614466367. ✖ $\alpha = 0.25$

7614466368. ✖ $\alpha = 0.50$

Question Number : 193 Question Id : 7614461603 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 current source inverter (CSI) has a

Options :

7614466369. ✖ High input impedance and output current is effected by load

7614466370. ✖ Low input impedance and output current is not effected by load

7614466371. ✖ Low input impedance and output current is effected by load

7614466372. ✔ High input impedance and output current is not effected by load

Question Number : 194 Question Id : 7614461604 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 1-ϕ ac voltage controller using a Triac is suitable for

Options :

7614466373. ✖ High power applications with highly resistive load

7614466374. ✖ High power applications with highly inductive load

7614466375.

✔ Low power applications with highly resistive load

7614466376. ✖ Low power applications with highly inductive load

Question Number : 195 Question Id : 7614461605 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 I_D, V_{GS} and V_{DS} represent collector current, gate to source voltage and drain to source voltage respectively of MOSFET, then the transfer characteristic is a plot of

Options :

7614466377. ✔ I_D (y-axis) versus V_{GS} (x-axis)

7614466378. ✖ V_{DS} (y-axis) versus I_D (x-axis)

7614466379. ✖ I_D (y-axis) versus V_{DS} (x-axis)

7614466380. ✖ V_{GS} (y-axis) versus I_D (x-axis)

Question Number : 196 Question Id : 7614461606 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 PLC?

Options :

7614466381. ✖ Programmable logic computer

7614466382. ✖ Personal logic computer

7614466383. ✔ Programmable logic controller

7614466384. ✖ Personal logic Controller

Question Number : 197 Question Id : 7614461607 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

Every Input and Output Devices connected to discrete I/O module is addressed to a specific_____ in the PLCs memory.

Options :

7614466385. ✔ Bit

7614466386. ✖ Instruction

7614466387. ✖ Term

7614466388. ✖ Word

Question Number : 198 Question Id : 7614461608 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 basic types of analog input modules of PLCs are____ and _____

Options :

7614466389. ✖ Physical and Remote

7614466390. ✔ Voltage sensing and current sensing

7614466391. ✖ Distributed and lumped

7614466392. ✖ Linear sensing and nonlinear sensing

Question Number : 199 Question Id : 7614461609 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 configurations of drive trains of Hybrid electric vehicle, mechanical coupler is not used?

Options :

7614466393. ✖ Series-parallel configuration

7614466394. ✖ Complex configuration

7614466395. ✔ Series configuration

7614466396. ✖ Parallel configuration

Question Number : 200 Question Id : 7614461610 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

Normally, Internal combustion engine is not used in

Options :

7614466397. ✔ Electric vehicle

7614466398. ✖ Hybrid electric vehicle

7614466399. ✖ Plug-in Hybrid electric vehicle

7614466400. ✖ Complex Hybrid electric vehicle