

Telangana State Council Higher Education

Notations :

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

Question Paper Name :	COMPUTER SCIENCE AND ENGINEERING 06th May 2024 Shift1
Subject Name :	Computer Science and 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 : Show	No
Reports : Show	No
Progress Bar :	No

COMPUTER SCIENCE AND ENGINEERING

Group Number : Group Id :	1
Group Maximum Duration :	7614467
Group Minimum Duration :	0 180 No
Show Attended Group? : Edit	No 0 200
Attended Group? : Break time : Group Marks : Is this Group for Examiner? :	No Cant View No
Examiner permission : Show Progress Bar? :	

Mathematics

Section Id :	76144623
Section Number :	1 Online
Section type :	Mandatory
Mandatory or Optional :	50 50 50
Number of Questions :	
Number of Questions to be attempted :	
Section Marks :	
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0

Sub-Section Number :	1
Sub-Section Id :	76144637
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 1 Question Id : 7614461211 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 $|A^3| = 27$, then $k =$

Options :

7614464801. ✖ ± 1

7614464802. ✔ ± 2

7614464803. ✖ ± 4

7614464804. ✖ ± 5

Question Number : 2 Question Id : 7614461212 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

7614464805. ✓ 4

7614464806. ✖ 2

7614464807. ✖ -4

7614464808. ✖ 3

Question Number : 3 Question Id : 7614461213 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464809. ✖ 12

7614464810. ✖ 9

7614464811. ✖ 6

7614464812. ✓ 3

Question Number : 4 Question Id : 7614461214 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464813. ✖ 4

7614464814. ✖ 1

7614464815. ✔ 3

7614464816. ✖ 5

Question Number : 5 Question Id : 7614461215 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464817. ✔ 10

7614464818. ✖ 5

7614464819. ✖ 9

7614464820. ✖ 3

Question Number : 6 Question Id : 7614461216 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464821. ✖ -3

7614464822. ✔ 0

7614464823. ✖ 2

7614464824. ✖ 1

Question Number : 7 Question Id : 7614461217 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464825. ✖ $\sqrt{3}$

7614464826. ✖ $4\sqrt{3}$

7614464827. ✓ $2\sqrt{3}$

7614464828. ✗ 3

Question Number : 8 Question Id : 7614461218 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464829. ✗ -1

7614464830. ✗ 1

7614464831. ✓ 0

7614464832. ✗ ∞

Question Number : 9 Question Id : 7614461219 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464833. ✓ 4

7614464834. ✖ 8

7614464835. ✖ 12

7614464836. ✖ 2

Question Number : 10 Question Id : 7614461220 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464837. ✖ (0,0)

7614464838. ✖ (60,36)

7614464839. ✖ (-60,36)

7614464840. ✔ $(\frac{2}{3}, -\frac{2}{5})$

Question Number : 11 Question Id : 7614461221 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464841. ✓ $h^2 > ab$

7614464842. ✗ $h^2 = ab$

7614464843. ✗ $h^2 < ab$

7614464844. ✗ $h^2 = a + b$

Question Number : 12 Question Id : 7614461222 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464845. ✗ $x^2 + y^2 + 6x + 10y + 26 = 0$

7614464846. ✓ $x^2 + y^2 - 6x - 10y + 26 = 0$

7614464847. ✗ $x^2 + y^2 - 6x + 10y + 26 = 0$

7614464848. ✗ $x^2 + y^2 - 6x - 10y - 26 = 0$

Question Number : 13 Question Id : 7614461223 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464849. ✖ -5

7614464850. ✖ -3

7614464851. ✔ -4

7614464852. ✖ -2

Question Number : 14 Question Id : 7614461224 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464853. ✔ $\frac{8}{3}$

7614464854. ✖ $\frac{9}{4}$

7614464855. ✖ $\frac{10}{7}$

7614464856. ✖ $\frac{11}{6}$

Question Number : 15 Question Id : 7614461225 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

7614464857. ✖ $\frac{3}{5}$

7614464858. ✔ $\frac{4}{5}$

7614464859. ✖ $\frac{6}{5}$

7614464860. ✖ $\frac{7}{5}$

Question Number : 16 Question Id : 7614461226 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

7614464861. ✓ $\left(\frac{-2}{5}, \frac{-4}{5}\right)$

7614464862. ✗ $\left(\frac{2}{5}, \frac{4}{5}\right)$

7614464863. ✗ $\left(\frac{2}{5}, \frac{-4}{5}\right)$

7614464864. ✗ $\left(\frac{-2}{5}, \frac{4}{5}\right)$

Question Number : 17 Question Id : 7614461227 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464865. ✗ 5

7614464866. ✓ 9

7614464867. ✗ 7

7614464868. ✖ 3

Question Number : 18 Question Id : 7614461228 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464869. ✖ $(0, \infty)$

7614464870. ✔ $(-\infty, \infty)$

7614464871. ✖ $(-\infty, 0) \cup (0, \infty)$

7614464872. ✖ $(-\infty, 0)$

Question Number : 19 Question Id : 7614461229 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\lim_{x \rightarrow 1} \frac{1 + x + x^2 + \dots + x^{n-1} - n}{x - 1} =$$

Options :

7614464873. ✖ $n^2 + n$

7614464874. ✖ $\frac{n^2 + n}{2}$

7614464875. ✔ $\frac{n^2 - n}{2}$

7614464876. ✖ $n^2 - n$

Question Number : 20 Question Id : 7614461230 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

7614464877. ✖ $\frac{1}{\sqrt{2}}$

7614464878. ✔ $-\sqrt{2}$

7614464879. ✖ $\sqrt{3}$

7614464880. ✖ $-\frac{1}{\sqrt{3}}$

Question Number : 21 Question Id : 7614461231 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464881. ✓ $9x - y - 14 = 0$

7614464882. ✗ $9x + y - 14 = 0$

7614464883. ✗ $9x - y + 14 = 0$

7614464884. ✗ $9x + y = 0$

Question Number : 22 Question Id : 7614461232 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464885. ✗ $-2, 2$

7614464886. ✗ $-4, 4$

7614464887. ✗

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

$$7614464888. \checkmark -\frac{1}{2}, 2$$

Question Number : 23 Question Id : 7614461233 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

$$7614464889. \times 4$$

$$7614464890. \checkmark 8$$

$$7614464891. \times 16$$

$$7614464892. \times 9$$

Question Number : 24 Question Id : 7614461234 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
 Correct Marks : 1 Wrong Marks : 0

$$\text{If } x^y y^x = 1, \text{ then } \frac{dy}{dx} =$$

Options :

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

7614464893. ✖

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

7614464894. ✖

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

7614464895. ✖

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

7614464896. ✔

Question Number : 25 Question Id : 7614461235 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

Options :

7614464897. ✖ 3

7614464898. ✖ 4

7614464899. ✔ 2

7614464900. ✖ 5

Question Number : 26 Question Id : 7614461236 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464901. ✖ -2

7614464902. ✔ -1

7614464903. ✖ 1

7614464904. ✖ 2

Question Number : 27 Question Id : 7614461237 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $f(x) = xe^{-x}$ ($x \in \mathbb{R}$) attains a maximum value at $x =$

Options :

7614464905. ✖ 2

7614464906. ✖ 1/0

7614464907. ✓ 1

7614464908. ✖ 3

Question Number : 28 Question Id : 7614461238 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $\int \frac{\cos 2x}{\sin^2 x \cos^2 x} dx =$

Options :

7614464909. ✖ $\operatorname{Cosec}^2 x - \sec^2 x + c$

7614464910. ✖ $\cot x + \tan x + c$

7614464911. ✓ $-\cot x - \tan x + c$

7614464912. ✖ $\operatorname{Cosec} x - \sec x + c$

Question Number : 29 Question Id : 7614461239 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\int e^{x \operatorname{Cosec} x} \operatorname{Cosec} x (1 - x \cot x) dx =$

Options :

7614464913. ✖ $e^{x \cot x} + c$

7614464914. ✔ $e^{x \operatorname{cosec} x} + c$

7614464915. ✖ $e^{-x \cot x} + c$

7614464916. ✖ $e^{-x \operatorname{cosec} x} + c$

Question Number : 30 Question Id : 7614461240 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 $\int_0^{\pi} x \sin x \cos^4 x \, dx$ is

Options :

7614464917. ✖ $\frac{\pi}{10}$

7614464918. ✔ $\frac{\pi}{5}$

7614464919. ✖ $-\frac{\pi}{5}$

7614464920. ✖ $-\frac{\pi}{10}$

Question Number : 31 Question Id : 7614461241 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464921. ✖ $1/3$

7614464922. ✖ 1

7614464923. ✖ $2/3$

7614464924. ✔ $1/6$

Question Number : 32 Question Id : 7614461242 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $xy = c_1 e^x + c_2 e^{-x}$ is

Options :

7614464925. ✖ $\frac{d^2 y}{dx^2} - 2 \frac{dy}{dx} - y = 0$

7614464926. ✔ $x \frac{d^2 y}{dx^2} + 2 \frac{dy}{dx} - xy = 0$

7614464927. ✖ $x \frac{d^2 y}{dx^2} - 2 \frac{dy}{dx} - y = 0$

7614464928. ✖ $x^2 \frac{d^2 y}{dx^2} + 2 \frac{dy}{dx} - y = 0$

Question Number : 33 Question Id : 7614461243 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464929. ✔ $\sin(y - x) = ce^{\frac{x^2}{2}}$

7614464930. ✖ $\cos(y - x) = ce^{\frac{-x^2}{2}}$

7614464931. ✖ $\sin(y + x) = ce^{\frac{-x^2}{2}}$

7614464932. ✖ $\tan(y - x) = ce^{\frac{x^2}{2}}$

Question Number : 34 Question Id : 7614461244 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464933. ✖ $(1+x)(1+y) = cx^2y^2$

7614464934. ✔ $(1+x^2)(1+y^2) = cx^2$

7614464935. ✖ $(1+x^2)(1+y^2) = cy$

7614464936. ✖ $(1+x^2)(1+y^2) = cxy$

Question Number : 35 Question Id : 7614461245 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614464937. ✔ $y = x^4 + x^2 \log x + cx^2$

7614464938. ✖ $y = x^3 + x^2 \log x + cx^2$

7614464939. ✖ $y = x^3 + x \log x + cx^2$

7614464940. ✖ $y = x^2 + x \log x + cx^3$

Question Number : 36 Question Id : 7614461246 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 :

7614464941. ✖ $\sin y = x^2 + 2 + ce^{\frac{-x^2}{2}}$

7614464942. ✖ $\cos y = 2x^2 - 1 + ce^{\frac{-x^2}{2}}$

7614464943. ✖ $\cot y = x^2 - 2 + ce^{\frac{-x^2}{2}}$

7614464944. ✔ $\tan y = x^2 - 2 + ce^{\frac{-x^2}{2}}$

Question Number : 37 Question Id : 7614461247 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 $\frac{d^2 y}{dx^2} + 16y = e^{-3x} + \cos 4x$ is

Options :

7614464945. ✖ $\frac{1}{7}e^{-3x} + \frac{x}{8}\cos 4x$

7614464946. ✖ $\frac{1}{23}e^{-3x} + \frac{x}{8}\cos 4x$

7614464947. ✔ $\frac{1}{25}e^{-3x} + \frac{x}{8}\sin 4x$

7614464948. ✖ $\frac{1}{36}e^{-3x} + \frac{x}{9}\sin 4x$

Question Number : 38 Question Id : 7614461248 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

7614464949. ✖ $x^2 + 4x$

7614464950. ✖ $2x^2 - x$

7614464951. ✖ $x^2 - 8x$

7614464952. ✔ $x^2 - 2x$

Question Number : 39 Question Id : 7614461249 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

7614464953. ✖ $y = \frac{1}{20}e^{5x} + \frac{1}{12}e^{4x}$

7614464954. ✔ $y = \frac{1}{20}e^{5x} + \frac{1}{12}e^{-3x}$

7614464955. ✖ $y = \frac{1}{12}e^{5x} + \frac{1}{20}e^{-3x}$

7614464956. ✖ $y = \frac{1}{20}e^{-2x} + \frac{1}{12}e^{-2x}$

Question Number : 40 Question Id : 7614461250 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

Options :

7614464957. ✖ $\frac{1}{s^2 + 2s + 2}$

7614464958. ✖

$$\frac{s}{s^3 + 2s + 2}$$

7614464959. ✓ $\frac{1}{s(s^2 + 2s + 2)}$

7614464960. ✗ $\frac{1}{s(s^2 + 2)}$

Question Number : 41 Question Id : 7614461251 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

7614464961. ✓ $1 - e$

7614464962. ✗ $e - 1$

7614464963. ✗ e

7614464964. ✗ $e + 1$

Question Number : 42 Question Id : 7614461252 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

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

Correct Marks : 1 Wrong Marks : 0

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

Options :

7614464965. ✖ π

7614464966. ✖ 0

7614464967. ✖ 2π

7614464968. ✔ $\frac{\pi}{2}$

Question Number : 43 Question Id : 7614461253 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

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

Options :

7614464969. ✖ 1

7614464970. ✖ 4

7614464971. ✔ 2

7614464972.

$$\frac{1}{2}$$

Question Number : 44 Question Id : 7614461254 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
 Correct Marks : 1 Wrong Marks : 0

$$\text{Let } L^{-1} \left\{ \frac{e^{-s}}{s^2 + 4s + 5} \right\} = f(t). \text{ If } t > 1, \text{ then } f(t) =$$

Options :

7614464973. ✖ $e^{-2t} \sin t$

7614464974. ✔ $e^{-2(t-1)} \sin(t-1)$

7614464975. ✖ $e^{-2(t+1)} \sin(t+1)$

7614464976. ✖ $e^{-2t} \sin t$

Question Number : 45 Question Id : 7614461255 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
 Correct Marks : 1 Wrong Marks : 0

$$\text{If } L\{f(t)\} = \frac{2s-1}{(s+1)(s-2)}, \text{ then } L\{f(4t)\} =$$

Options :

7614464977. ✖ $\frac{2(s+2)}{(s-4)(s+8)}$

7614464978. ✖ $\frac{2(s-1)}{(4s+1)(4s-2)}$

7614464979. ✖ $\frac{s-2}{(s-4)(s+8)}$

7614464980. ✔ $\frac{2(s-2)}{(s+4)(s-8)}$

Question Number : 46 Question Id : 7614461256 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

7614464981. ✖ 0

7614464982. ✖ 3

7614464983. ✔ $\frac{1}{3}$

7614464984. ✖ $\frac{1}{9}$

Question Number : 47 Question Id : 7614461257 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

7614464985. ✖ $\frac{4}{\pi n^2}$

7614464986. ✔ $\frac{-4}{\pi n^2}$

7614464987. ✖ $\frac{2}{\pi n^2}$

7614464988. ✖ 0

Question Number : 48 Question Id : 7614461258 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 $f(x) = |x \sin x|$ in $(-\pi, \pi)$ is

Options :

7614464989. ✓ ⁰

7614464990. ✗ ⁻²

7614464991. ✗ ²

7614464992. ✗ ⁻¹

Question Number : 49 Question Id : 7614461259 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $f(x) = \sin x$ is expressed as Fourier Cosine series in the interval
 $(0, \pi)$, then the value of a_0 is

Options :

7614464993. ✗ $\frac{2}{\pi}$

7614464994. ✗ $\frac{1}{\pi}$

7614464995. ✓ $\frac{4}{\pi}$

7614464996. ✗ $\frac{-2}{\pi}$

Question Number : 50 Question Id : 7614461260 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$$\int_0^{\pi} \sin 6x \sin 4x \, dx =$$

Options :

7614464997. ✖ $\frac{\pi}{2}$

7614464998. ✖ π

7614464999. ✖ 1

7614465000. ✔ 0

Physics

Section Id :	76144624
Section Number :	2 Online
Section type :	Mandatory
Mandatory or Optional :	25 25 25
Number of Questions :	
Number of Questions to be attempted :	
Section Marks :	
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0

Sub-Section Number :	1
Sub-Section Id :	76144638
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 51 Question Id : 7614461261 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

$$y = \frac{A}{\sqrt{2}} (\sin \omega t + \cos \omega t)$$

7614465001. ✖

$$y = A \sin \omega t$$

7614465002. ✖

$$y = \frac{A}{T} \sin\left(\frac{t}{A}\right)$$

7614465003. ✔

$$y = A \sin\left(\frac{4\pi t}{T}\right)$$

7614465004. ✖

Question Number : 52 Question Id : 7614461262 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

7614465005. ✖ 612, 612

7614465006. ✖ 1224, 1224

7614465007. ✔ 865, 865

7614465008. ✖ 432, 432

Question Number : 53 Question Id : 7614461263 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465009. ✔ 90°

7614465010. ✖ 60°

7614465011. ✖ 30°

7614465012. ✖ 45°

Question Number : 54 Question Id : 7614461264 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465013. ✓ 98.1 kg.m.s^{-2}

7614465014. ✗ 15 kg

7614465015. ✗ $98.1 \times 10^3 \text{ g.cm.s}^{-2}$

7614465016. ✗ 1500 g

Question Number : 55 Question Id : 7614461265 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465017. ✗ $2u \sin\theta$

7614465018. ✗ $u \sin\theta$

7614465019. ✗ $2u \cos\theta$

7614465020. ✓ u cosθ

Question Number : 56 Question Id : 7614461266 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465021. ✗ 10 Newton

7614465022. ✗ 20 Newton

7614465023. ✗ 30 Newton

7614465024. ✓ 40 Newton

Question Number : 57 Question Id : 7614461267 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 $1\mu\text{N}$ is required to move the plate so as to produce a velocity change 1 cm s^{-1} between two successive layers separated by 1 cm. The coefficient of viscosity of the liquid is

Options :

7614465025. ✓ 10^{-4} Pa s

7614465026. ✗ 10^{-3} Pa s

7614465027. ✗ 10^{-2} Pa s

7614465028. ✗ 10 Pa s

Question Number : 58 Question Id : 7614461268 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465029. ✗ m

7614465030. ✗ 2m

7614465031. ✓ $\frac{m}{2}$

7614465032. ✗ 4m

Question Number : 59 Question Id : 7614461269 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465033. ✖ $\rho_2 A_1 v_1 = \rho_1 A_2 v_2$

7614465034. ✖ $A_1 v_1 = A_2 v_2$

7614465035. ✖ $\rho_1 v_1 = \rho_2 v_2$

7614465036. ✔ $\rho_1 A_1 v_1 = \rho_2 A_2 v_2$

Question Number : 60 Question Id : 7614461270 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465037. ✖ 25 : 4

7614465038. ✔ 4 : 25

7614465039. ✖ 1 : 25

7614465040. ✖ 4 : 1

Question Number : 61 Question Id : 7614461271 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465041. ✖ a-iv, b-iii, c-ii, d-i

7614465042. ✖ a-i, b-iv, c-ii, d-iii

7614465043. ✔ a-iv, b-i, c-ii, d-iii

7614465044. ✖ a-i, b-ii, c-iii, d-iv

Question Number : 62 Question Id : 7614461272 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465045. ✖ Pressure

7614465046. ✖ Momentum

7614465047. ✖ Entropy

7614465048. ✔ Energy

Question Number : 63 Question Id : 7614461273 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465049. ✖ 0

7614465050. ✖ 2a

7614465051. ✔ 4a

7614465052. ✖ 3a

Question Number : 64 Question Id : 7614461274 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 $g = 10 \text{ ms}^{-2}$)

Options :

7614465053. ✖ 0 ms^{-2}

7614465054. ✔ 0.25 ms^{-2}

7614465055. ✖ 2.5 ms^{-2}

7614465056. ✖ 10 ms^{-2}

Question Number : 65 Question Id : 7614461275 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 :

7614465057. ✖ $2\sqrt{3} \text{ ms}^{-1}$

7614465058. ✖ $4\sqrt{3} \text{ ms}^{-1}$

7614465059. ✖ 0 ms^{-1}

7614465060. ✓ $\sqrt{3} \text{ ms}^{-1}$

Question Number : 66 Question Id : 7614461276 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465061. ✗ 680 m

7614465062. ✗ 1020 m

7614465063. ✓ 1700 m

7614465064. ✗ 340 m

Question Number : 67 Question Id : 7614461277 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465065. ✗ Gradually increasing

7614465066. ✖ Exponentially increasing

7614465067. ✖ Randomly change

7614465068. ✔ Uniform

Question Number : 68 Question Id : 7614461278 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465069. ✔ 10 cm

7614465070. ✖ 4 cm

7614465071. ✖ 2 cm

7614465072. ✖ 6 cm

Question Number : 69 Question Id : 7614461279 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465073. ✖ 0.05 A

7614465074. ✖ 0.5 A

7614465075. ✔ 0 A

7614465076. ✖ 5 A

Question Number : 70 Question Id : 7614461280 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465077. ✔ 1 A

7614465078. ✖ 2 A

7614465079. ✖ 3 A

7614465080. ✖ 4 A

Question Number : 71 Question Id : 7614461281 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465081. ✖ Yes

7614465082. ✔ No

7614465083. ✖ Yes, if intensity of incident light is increased

7614465084. ✖ Yes, if material is illuminated for a long time

Question Number : 72 Question Id : 7614461282 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465085. ✖ Conductors

7614465086. ✖ Superconductors

7614465087. ✖ Semiconductors

7614465088. ✓ Insulators

Question Number : 73 Question Id : 7614461283 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465089. ✓ Perfect diamagnetic

7614465090. ✗ Weak diamagnetic

7614465091. ✗ Perfect ferromagnetic

7614465092. ✗ Weak paramagnetic

Question Number : 74 Question Id : 7614461284 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465093. ✗ The conduction band is completely empty

The valence band is partially empty and the conduction band is partially

7614465094. ✓ filled

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

7614465095. ✖

7614465096. ✖ The valence band is completely filled

Question Number : 75 Question Id : 7614461285 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465097. ✖ To increase the resistivity

7614465098. ✔ To get the desired level of conductivity

7614465099. ✖ To reduce the conductivity

7614465100. ✖ To get the positive temperature coefficient of resistance

Chemistry

Section Id : 76144625

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 :	76144639
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 76 Question Id : 7614461286 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

7614465101. ✖ 19

7614465102. ✖ 58

7614465103. ✖ 39

7614465104. ✔ 20

Question Number : 77 Question Id : 7614461287 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 :

7614465105. ✖ Ammonia

7614465106. ✔ Ammonium ion

7614465107. ✖ Urea

7614465108. ✖ Nitrogen

Question Number : 78 Question Id : 7614461288 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465109. ✖ NH_2^-

7614465110. ✖ N_2H_4

7614465111. ✔ H_3O^+

7614465112. ✖ H_2O_2

Question Number : 79 Question Id : 7614461289 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465113. ✓ 12.0

7614465114. ✗ 16.03

7614465115. ✗ 6.0

7614465116. ✗ 1.20

Question Number : 80 Question Id : 7614461290 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465117. ✗ Peptization

7614465118. ✓ Dialysis

7614465119. ✗ Mechanical Dispersion

7614465120. ✗ Oxidation

Question Number : 81 Question Id : 7614461291 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465121. ✓ BaCl_2

7614465122. ✗ AlCl_3

7614465123. ✗ BF_3

7614465124. ✗ BeCl_2

Question Number : 82 Question Id : 7614461292 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465125. ✗ 3

7614465126. ✗ 9

7614465127. ✗ 7

7614465128. ✓ 11

Question Number : 83 Question Id : 7614461293 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465129. ✓ Aniline

7614465130. ✗ Room temperature ionic liquids

7614465131. ✗ Bio solvents

7614465132. ✗ Supercritical fluids

Question Number : 84 Question Id : 7614461294 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465133. ✗ July 5th

7614465134. ✗ June 10th

7614465135. ✖ October 20th

7614465136. ✔ June 5th

Question Number : 85 Question Id : 7614461295 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465137. ✖ Lime – Soda process

7614465138. ✖ Permutit process

7614465139. ✖ Ion-exchange process

7614465140. ✔ Electrodialysis process

Question Number : 86 Question Id : 7614461296 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465141. ✔ Ozone

Display Question Number : Yes 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 :

7614465165. ✓ Sherardising

7614465166. ✗ Galvanizing

7614465167. ✗ Zincing

7614465168. ✗ Tinning

Question Number : 93 Question Id : 7614461303 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 :

7614465169. ✗ Urea and formaldehyde

7614465170. ✗ Phthalic acid and ethylene glycol

7614465171. ✗ Ethylene glycol and formaldehyde

7614465172. ✓ Phenol and formaldehyde

Question Number : 94 Question Id : 7614461304 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465173. ✖ Polystyrene

7614465174. ✔ Buna-S rubber

7614465175. ✖ Melamine

7614465176. ✖ Dacron

Question Number : 95 Question Id : 7614461305 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465177. ✔ Moderate ignition temperature and high calorific value

7614465178. ✖ High ignition temperature and high calorific value

7614465179. ✖ Low ignition temperature and low calorific value

7614465187. ✖ - 0.242

7614465188. ✔ + 0.242

Question Number : 98 Question Id : 7614461308 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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



(Standard Reduction potentials of Zn and Fe electrodes are -0.76V and $+0.77\text{V}$ respectively)

Options :

7614465189. ✔ 1.53 V

7614465190. ✖ 0.01 V

7614465191. ✖ - 1.53 V

7614465192. ✖ 0.78 V

Question Number : 99 Question Id : 7614461309 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465193. ✓ Methyl isocyanate

7614465194. ✗ Methyl chloroformate

7614465195. ✗ Methyl isopropyl ether

7614465196. ✗ Methyl isobutyrate

Question Number : 100 Question Id : 7614461310 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 :

7614465197. ✗ CO and CO₂

7614465198. ✗ NO and NO₂

7614465199. ✓ SO₂ and NO₂

7614465200. ✗ N₂ and O₂

COMPUTER SCIENCE AND ENGINEERING

Section Id :

76144626

Section Number :

4

Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	100 100
Number of Questions to be attempted :	100
Section Marks :	
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	76144640
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 101 Question Id : 7614461311 Question Type : MCQ Option Shuffling : Yes
 Display Question Number : Yes 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 decimal equivalent of octal number $(128.24)_8$ is _____

Options :

7614465201. ✖ 80.3125

7614465202. ✔ 88.3125

7614465203. ✖ 40.15625

7614465204. ✖ 88.20

Question Number : 102 Question Id : 7614461312 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 binary equivalent of a BCD number 00101001.01110101 is

Options :

7614465205. ✓ 11101.11

7614465206. ✗ 11010.11

7614465207. ✗ 11101.10100

7614465208. ✗ 11010.10100

Question Number : 103 Question Id : 7614461313 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes 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 logical gate that gives an output of logic level "1" whenever two inputs are equal is

Options :

7614465209. ✗ AND

7614465210. ✗ OR

7614465211. ✗ Ex-OR

7614465212. ✓ Ex-NOR

Question Number : 104 Question Id : 7614461314 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Convert $A.B + \bar{A}.\bar{B}$ into equivalent Product of Sums expression

Options :

7614465213. ✗ $(A+B) . (\bar{A}+\bar{B})$

7614465214. ✗ $(\bar{A}+\bar{B}) . (\bar{A}+B)$

7614465215. ✓ $(A+\bar{B}) . (\bar{A}+B)$

7614465216. ✗ $(A+B) . (A+\bar{B})$

Question Number : 105 Question Id : 7614461315 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 digital circuit whose output depends not only on the present input but also on sequence of past inputs is a

Options :

7614465217. ✗ Decoder

7614465218. ✖ Multiplexer

7614465219. ✖ Sequential Circuit

7614465220. ✔ Combinational Circuit

Question Number : 106 Question Id : 7614461316 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 number of distinct Boolean expressions for 4 variables is

Options :

7614465221. ✖ 16

7614465222. ✖ 256

7614465223. ✖ 1024

7614465224. ✔ 65536

Question Number : 107 Question Id : 7614461317 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 SR flip flop is converted to ____ flip flop by inserting an inverter between S&R by assigning a single input

Options :

7614465225. ✖ Master Slave

7614465226. ✖ T

7614465227. ✖ JK

7614465228. ✔ D

Question Number : 108 Question Id : 7614461318 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 Combinational circuit that converts the binary information from 2^n inputs to n outputs is

Options :

7614465229. ✖ Decoder

7614465230. ✖ Multiplexer

7614465231. ✖ Half Adder

7614465232. ✔ Encoder

Question Number : 109 Question Id : 7614461319 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 address lines required 16 kilobyte memory chip is

Options :

7614465233. ✖ 4

7614465234. ✖ 16

7614465235. ✔ 14

7614465236. ✖ 13

Question Number : 110 Question Id : 7614461320 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If A, B, C, D, E, F represents variables of a Boolean expression and m_i is the i^{th} min term, then the value of m_7 is

Options :

7614465237. ✔ A, \bar{B}, C, D, E, F

7614465238. ✖ $A + \bar{B} + C + D + E + F$

7614465239. ✖ $\bar{A}, B, \bar{C}, \bar{D}, \bar{E}, \bar{F}$

7614465240. ✖ $\bar{A} + B + \bar{C} + \bar{D} + \bar{E} + \bar{F}$

Question Number : 111 Question Id : 7614461321 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 RAM chip has a capacity of 1024 words of 16 bits each ($1K \times 16$). The number of 2×4 decoders with enable line needed to construct a $16K \times 16$ RAM from $1K \times 16$ RAM is

Options :

7614465241. ✖ 4

7614465242. ✔ 5

7614465243. ✖ 3

7614465244. ✖ 6

Question Number : 112 Question Id : 7614461322 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 amount of ROM needed to implement a 4 bit multiplier is

Options :

7614465245. ✔ 2K bits

7614465246. ✖ 4K bits

7614465247. ✖ 8K bits

7614465248. ✖ 1K bits

Question Number : 113 Question Id : 7614461323 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 computer has 128 KB 8-way set associative write back data cache with block size of 32 bytes. The processor sends 32 bit addresses to the cache controller. The number of bits in the tag field of an address is:

Options :

7614465249. ✖ 16

7614465250. ✖ 20

7614465251. ✔ 18

7614465252. ✖ 14

Question Number : 114 Question Id : 7614461324 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider a hypothetical processor with an instruction of type LW R1, 20(R2). This operation reads from a memory location and writes it into register R1. The effective address of the memory location of the operand is obtained by addition of constant 20 to address contained in register R2. Which of the following best reflects the addressing mode of this instruction?

Options :

7614465253. ✖ Register Addressing

7614465254. ✖ Immediate Addressing

7614465255. ✔ Base Indexed Addressing

7614465256. ✖ Register Indirect Scaled Addressing

Question Number : 115 Question Id : 7614461325 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the expression $(a-(b+f))-(c-(c+d))$ where a, b, c, d, e are data items stored in memory locations. Consider a machine with load-store architecture in which memory can be accessed only through load and store instructions. The binary operations in this expression can be evaluated by the machine only when the operands are in registers. The instructions produce the result only in a register. If no immediate results can be stored in memory, what is the minimum number of registers needed to evaluate this expression.

Options :

7614465257. ✖ 5

7614465258. ✖ 2

7614465259. ✖ 8

7614465260. ✔ 3

Question Number : 116 Question Id : 7614461326 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

According to Flynn's classification, which architecture is of only theoretical interest and no practical system has been developed based on it?

Options :

7614465261. ✖ SSID

7614465262. ✖ SIMD

7614465263. ✔ MISD

7614465264. ✖ MIMD

Question Number : 117 Question Id : 7614461327 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 data transfer mode takes relatively more time

Options :

7614465265. ✖ DMA

7614465266. ✖ Interrupt initiated I / O

7614465267. ✔ Programmed I / O

7614465268. ✖ DMA and Interrupt initiated I / O

Question Number : 118 Question Id : 7614461328 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 processor has 100 different instructions and 32 general purpose registers.

A 32-bit instruction word has an op-code, two register operands and an immediate operand. The number of bits available for immediate operand is

Options :

7614465269. ✔ 15

7614465270. ✖ 14

7614465271. ✖ 16

7614465272. ✖ 17

Question Number : 119 Question Id : 7614461329 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 speed up could be achieved according to Amdahl's law for infinite number of processes, if 85% of the program is parallel.

Options :

7614465273. ✓ 20/3

7614465274. ✗ 10/3

7614465275. ✗ 3/10

7614465276. ✗ 3/20

Question Number : 120 Question Id : 7614461330 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 false statement

Options :

7614465277. ✓ In synchronous serial transfer of data the two units operate with different clock

7614465278. ✗ The isolated I/O method isolates memory and I/O addresses so that memory address range is not affected by interface address assignment

In memory-mapped I/O the CPU can manipulate I/O data residing in interface registers that are not used to manipulate memory words

7614465279. ✖

In synchronous serial transfer of data the two units operate with the same clock

7614465280. ✖

Question Number : 121 Question Id : 7614461331 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is NOT a unary operator in C language.

Options :

7614465281. ✖ ++

7614465282. ✖ --

7614465283. ✖ sizeof

7614465284. ✔ /

Question Number : 122 Question Id : 7614461332 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 result of the expression $(10/3) * 3 + 5 \% 3$

Options :

7614465285. ✓ 11

7614465286. ✖ 10

7614465287. ✖ 8

7614465288. ✖ 1

Question Number : 123 Question Id : 7614461333 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 'union' holds

Options :

7614465289. ✓ One object at a time

7614465290. ✖ Multiple objects at a time

7614465291. ✖ Static values

7614465292. ✖ Similar to Structure

Question Number : 124 Question Id : 7614461334 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

This program prints 31, what is the statement to be written at the 'MISSING PART' part of the program.

```
#include<stdio.h>
int main()
{
    int a=15,b=16,c;
    int *p1,*p2,*p3,**p4;
    p1=&a;
    p2=&b;
    p3=&c;
    MISSING PART
    printf("%d",c);
    return 0;
}
```

Options :

7614465293. ✖ $*p3=p1+p2;$

7614465294. ✔ $*p3=*p1+*p2;$

7614465295. ✖ $p3=*p1+*p2;$

7614465296. ✖ $p3=p1+p2;$

Question Number : 125 Question Id : 7614461335 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 output of the following program

```
#include<stdio.h>
int main()
{
    int a=100;
    if(a>10)
        printf("NIT Delhi ");
    else
        printf("NIT Warangal");
    if(a>20)
        printf("NIT Trichy ");
    else
        printf("IIT Hyderabad ");
    return 0;
}
```

Options :

7614465297. ✓ NIT Delhi NIT Trichy

7614465298. ✗ IIT Hyderabad

7614465299. ✗ NIT Delhi

7614465300. ✗ NIT Trichy IIT Hyderabad

Question Number : 126 Question Id : 7614461336 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 looping is known as exit controlled loop

Options :

7614465301. ✖ for

7614465302. ✖ while

7614465303. ✔ do-while

7614465304. ✖ if

Question Number : 127 Question Id : 7614461337 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following pseudo code:

Algorithm Display (a)

if $n=1$

 print "Data Structures"

 print "Data Structures"

 print "Data Structures"

 return

else

 print "Data Structures"

 Display($n-1$)

If 200 is provided as input to the Display() algorithm then *Data Structures* is printed _____ times.

Options :

7614465305. ✖ 199

7614465306. ✖ 200

7614465307. ✖ 201

7614465308. ✔ 202

Question Number : 128 Question Id : 7614461338 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider the following statements.

- I. Stack is used to perform recursion.
- II. If insertion and deletion operations are performed at the front of linked list then the linked list acts as a stack.
- III. If T is a rooted binary tree with no right subtree of root i.e., root has only left subtree. Then Pre-order traversal of T is same as its in-order traversal.

Number of correct statements among the three statements given above is

Options :

7614465309. ✖ 0

7614465310. ✖ 1

7614465311. ✔ 2

7614465312. ✖ 3

Question Number : 129 Question Id : 7614461339 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 sorted pairs can be efficiently merged using merge sort?

Options :

7614465313. ✖ (10,20,30,40,50,60,70,80) and (16,26,36,46,56,66,76,86)

7614465314. ✖ (10,30,36,40,46,50,56,60) and (16,20,26,66,70,76,80,86)

7614465315. ✖ (10,16,20,26,30,36,40,60) and (46,50,56,66,70,76,80,86)

7614465316. ✔ (10,16,20,26,30,36,40,46) and (50,56,60,66,70,76,80,86)

Question Number : 130 Question Id : 7614461340 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Let A be an array with n distinct elements arranged in decreasing order.
Which one of the following statements is FALSE?

Options :

7614465317. ✖ Merge sort sorts A in ascending order more efficiently than insertion sort

7614465318. ✖ Merge sort sorts A in ascending order more efficiently than selection sort

7614465319. ✔ Insertion sort sorts A in ascending order more efficiently than selection sort

Merge sort sorts A in ascending order more efficiently than quick sort

7614465320. ✖

Question Number : 131 Question Id : 7614461341 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 S be an empty stack. If the following operations:

PUSH(S,10); PUSH(S,20); PUSH(S,30); POP(S); PUSH(S,15); PUSH(S,25)

and POP(S) are performed in sequence on S then the sum of top two elements of S is

Options :

7614465321. ✖ 50

7614465322. ✔ 35

7614465323. ✖ 45

7614465324. ✖ 40

Question Number : 132 Question Id : 7614461342 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time
: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Let A [1..15] = (10,15,20,25,30,35,40,45,50,55,60,65,70,75,80). Which one of the following statements is FALSE about searching in array A?

Options :

7614465325. ✖ Linear search requires three comparisons to find element 20
7614465326. ✖ Binary search requires less comparisons than linear search to find 45
7614465327. ✔ Binary search requires two comparisons to find element 15
7614465328. ✖ Binary search requires less comparisons than linear search to find 80

Question Number : 133 Question Id : 7614461343 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 C++, what does "this" pointer represent within a class member function

Options :

7614465329. ✖ It points to the base class object.
7614465330. ✖ It points to the derived class object.
7614465331. ✔ It points to the current object instance within the member function.
7614465332. ✖ It points to the static class members.

Question Number : 134 Question Id : 7614461344 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 inheritance types in C++ allow a class to inherit from more than one base class?

Options :

Single Inheritance

7614465333. ✖

Multiple Inheritance

7614465334. ✔

Multilevel Inheritance

7614465335. ✖

Hierarchical Inheritance

7614465336. ✖

Question Number : 135 Question Id : 7614461345 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes 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 C++, what is the primary purpose of a destructor within a class?

Options :

To initialize an object.

7614465337. ✖

To allocate memory for an object.

7614465338. ✖

To perform cleanup tasks before an object is destroyed.

7614465339. ✔

7614465340. ✖ To overload operators for a class.

Question Number : 136 Question Id : 7614461346 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 concept of function overloading in C++ is that

Options :

7614465341. ✖ It involves redefining the behavior of built-in functions.

7614465342. ✔ It allows providing multiple definitions of a function with the same name but different parameters.

7614465343. ✖ It restricts access to certain member functions.

7614465344. ✖ It facilitates access to private members of a class

Question Number : 137 Question Id : 7614461347 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 does the friend keyword indicate in C++?

Options :

7614465345. ✔ It indicates a function or class that can access private and protected members of another class.

It indicates a function or class that cannot access private and protected members of another class.

7614465346. ✖

It indicates a virtual function.

7614465347. ✖

It indicates an inline function.

7614465348. ✖

Question Number : 138 Question Id : 7614461348 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 role do virtual functions play in C++?

Options :

They provide multiple definitions of a function with the same name but different parameters.

7614465349. ✖

They prevent the inheritance of a class.

7614465350. ✖

They enable runtime polymorphism and dynamic binding.

7614465351. ✔

They access static members of a class

7614465352. ✖

Question Number : 139 Question Id : 7614461349 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 purpose of inline functions in C++.

Options :

7614465353. ✓ They reduce code duplication and improve performance by inserting function code directly at the call site.

7614465354. ✗ They provide multiple definitions of a function with the same name but different parameters.

7614465355. ✗ They restrict access to certain member functions.

7614465356. ✗ They enable runtime polymorphism.

Question Number : 140 Question Id : 7614461350 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

How do templates contribute to C++ programming?

Options :

7614465357. ✓ They provide a mechanism for code reuse by defining generic functions or classes that can work with any data type.

7614465358. ✗ They provide multiple definitions of a function with the same name but different parameters.

7614465359. ✗ They restrict access to certain member functions.

7614465360. ✖ They enable runtime polymorphism.

Question Number : 141 Question Id : 7614461351 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 inheritance type involves creating a class hierarchy where each derived class inherits from only one base class?

Options :

7614465361. ✔ Single Inheritance

7614465362. ✖ Multiple Inheritance

7614465363. ✖ Multilevel Inheritance

7614465364. ✖ Hierarchical Inheritance

Question Number : 142 Question Id : 7614461352 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes 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 purpose do class templates serve in C++?

Options :

They provide a mechanism for code reuse by defining generic classes that can work with any data type.

7614465365. ✔

They provide multiple definitions of a function with the same name but different parameters.

7614465366. ✖

They enable runtime polymorphism.

7614465367. ✖

They restrict access to certain member functions.

7614465368. ✖

Question Number : 143 Question Id : 7614461353 Question Type : MCQ Option Shuffling : Yes
Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

One of the following statement is false regarding data dictionary

Options :

Data dictionary is a file that contains meta data

7614465369. ✖

Data dictionary is normally maintained by the database administrator

7614465370. ✖

The characteristics of the data is stored in data dictionary

7614465371. ✖

Data elements in the database can be modified by changing the data dictionary

7614465372. ✔