Andhra Pradesh State Council of Higher Education

Notations :

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

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

Question Paper Name :	Mining Engineering 23rd Apr 2026 Shift 2
Subject Name :	Mining Engineering
Creation Date :	2026-04-23 18:00:17
Duration :	180
Total Marks :	200
Display Marks:	No
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Mining Engineering

Group Number :	1
Group Id :	77951870
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	200

Mathematics

Section Id :	779518273
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50

Number of Questions to be attempted :	50
Section Marks :	50
Section Negative Marks :	0
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	779518289
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 77951813809 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If $3A+4B^T=\begin{bmatrix}7 & -10 & 17\\ 0 & 6 & 31\end{bmatrix}$ and $2B-3A^T=\begin{bmatrix}-1 & 18\\ 4 & -6\\ -5 & -7\end{bmatrix}$ then $B=$ _____

Options :

1. ✖ $\begin{bmatrix}1 & 3\\ -1 & 0\\ -2 & -4\end{bmatrix}$

2. ✖ $\begin{bmatrix}1 & 3\\ 1 & 0\\ 2 & 4\end{bmatrix}$

3. ✔ $\begin{bmatrix}1 & 3\\ -1 & 0\\ 2 & 4\end{bmatrix}$

4. ✖ $\begin{bmatrix}-1 & -3\\ 1 & 0\\ 2 & 4\end{bmatrix}$

Question Number : 2 Question Id : 77951813810 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If A and B are 4×4 matrices such that $A^2+B=A^2B$ then which of the following is correct?

Options :

1. ✖ $AB = I$

2. ✖ $A^2B = I$

3. ✔ $A^2B = BA^2$

4. ✖ $A^2 = I$ or $B = I$

Question Number : 3 Question Id : 77951813811 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If A is a matrix of order 3×3 and $\left|adj\left(adj\left(adjA\right)\right)\right| = 12^4$, then the value of $\left|A^{-1}adjA\right| =$ _____

Options :

1. ✖ 1

2. ✖ 12

3. ✔ $2\sqrt{3}$

4. ✖ $\sqrt{6}$

Question Number : 4 Question Id : 77951813812 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If A is a 4×4 matrix and $\left|2A\right| = 64$, $B = adjA$ then $\left|AdjB\right| =$ _____

Options :

1. ✔ 2^{18}

2. ✖ 2^{36}

3. ✖ 2^6

4. ✖ 2^9

Question Number : 5 Question Id : 77951813813 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

For what value of λ, the system of equations $x+2y+\lambda z=0,\ x+2y+z=6,\ x+2y+3z=10$, has no solution.____

Options :

1. ✖ 2

2. ✔ 3

3. ✖ 4

4. ✖ 5

Question Number : 6 Question Id : 77951813814 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If $\frac{42-19x}{(x^2+1)(x-4)}=\frac{Ax+B}{x^2+1}+\frac{C}{x-4}$ then $B=$_____

Options :

1. ✔ -11

2. ✖ 11

3. ✖ -2

4. ✖ 2

Question Number : 7 Question Id : 77951813815 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If $\frac{(x+1)^2}{x^3+x}=\frac{A}{x}+\frac{Bx+C}{x^2+1}$, then $\sin^{-1}\left(\frac{A}{C}\right)=$

Options :

1. ✔ $\frac{\pi}{6}$

2. ✖ $\frac{\pi}{4}$

3. ✖ $\frac{\pi}{3}$

4. ✖ $\frac{\pi}{2}$

Question Number : 8 Question Id : 77951813816 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If $\text{Sin}\theta+\text{Cos}\theta=\frac{1}{5}$ and $0\leq\theta<\pi$ then tan θ is _____

Options :

1. ✔ $\frac{-4}{3}$

2. ✖ $\frac{3}{4}$

3. ✖ $\frac{-3}{4}$

4. ✖ $\frac{4}{3}$

Question Number : 9 Question Id : 77951813817 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If $f(x)=Sin^6 x+Cos^6 x$ then the range of $f(x)$ is _____

Options :

1. ✖ $\left(\frac{1}{4},\frac{3}{4}\right)$

2. ✖ $\left[\frac{1}{4},\frac{3}{4}\right]$

3. ✔ $\left[\frac{1}{4},1\right]$

4. ✖ $\left[\frac{3}{4},1\right]$

Question Number : 10 Question Id : 77951813818 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

$Cos20^\circ+Cos80^\circ-\sqrt{3}Cos50^\circ=$ ____

Options :

1. ✖ -1

2. ✔ 0

3. ✖ 1

4. ✖ $\sqrt{3}$

Question Number : 11 Question Id : 77951813819 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If $A = Sin45^\circ + Cos45^\circ$ and $B = Sin44^\circ + Cos44^\circ$ then which of the following is TRUE

Options :

1. ✔ $A > B$

2. ✖ $A < B$

3. ✖ $A = B$

4. ✖ $AB = 1$

Question Number : 12 Question Id : 77951813820 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If A, B, C are angles of a triangle such that $Cot\frac{A}{2} = 3Tan\frac{C}{2}$ then $Sin A,\ Sin B,\ Sin C$ are in___

Options :

1. ✔ Arithmetic Progression

2. ✖ Geometric Progression

3. ✖ Harmonic Progression

4. ✖ Arithmetic Geometric Progression

Question Number : 13 Question Id : 77951813821 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In ΔABC, if $Sin\,A = Sin^2\,B$ and $2\,Cos^2\,A = 3\,Cos^2\,B$ then the triangle ABC is _____

Options :

1. ✖ equilateral

2. ✖

isosceles

3. ✔ obtuse angled

4. ✖ right angled

Question Number : 14 Question Id : 77951813822 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

$\text{Sec}\,855^\circ = \_\_\_\_\_$

Options :

1. ✖ 1

2. ✖ $\sqrt{2}$

3. ✔ $-\sqrt{2}$

4. ✖ -1

Question Number : 15 Question Id : 77951813823 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The number of solutions of $\text{Sin}\,x = \frac{x}{10}$ is _____

Options :

1. ✖ 10

2. ✖ 3

3. ✖ 5

4. ✔ 7

Question Number : 16 Question Id : 77951813824 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following is not the solution of the equation $Sin5x = 16Sin^5 x (n \in Z)$?

Options :

1. ✖ $n\pi + \frac{\pi}{6}$

2. ✖ $n\pi - \frac{\pi}{6}$

3. ✖ $n\pi$

4. ✔ $n\pi + \frac{\pi}{3}$

Question Number : 17 Question Id : 77951813825 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If $\frac{\pi}{2} \le \theta \le \frac{3\pi}{4}$ then $\cos^{-1}\left(\frac{5}{13}\sin\theta + \frac{12}{13}\cos\theta\right) =$ ____

Options :

1. ✖ $\theta - Tan^{-1}\left(\frac{4}{3}\right)$

2. ✖ $\theta + Tan^{-1}\left(\frac{5}{12}\right)$

3. ✖ $\theta + Tan^{-1}\left(\frac{4}{5}\right)$

4. ✔ $\theta - Tan^{-1}\left(\frac{5}{12}\right)$

Question Number : 18 Question Id : 77951813826 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If z is a complex number such that $|z|+z=3+i$, where $i=\sqrt{-1}$, then $|z|=$ ___

Options :

1. ✔ $\frac{5}{3}$

2. ✖ $\frac{5}{4}$

3. ✖ $\frac{\sqrt{34}}{3}$

4. ✖ $\frac{\sqrt{41}}{4}$

Question Number : 19 Question Id : 77951813827 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In the complex plane, if the points A and B represent $(1+i)$ and $(-1+i)$ then the angle between OA and OB is

Options :

1. ✖ $\frac{3\pi}{4}$

2. ✖ π

3. ✖ $\frac{\pi}{4}$

4. ✔ $\frac{\pi}{2}$

Question Number : 20 Question Id : 77951813828 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The largest distance from $(-3,2)$ to the circle $x^2+y^2-2x+2y+1=0$ _____

Options :

1. ✖ 8

2. ✖ 4

3. ✖ 18

4. ✔ 6

Question Number : 21 Question Id : 77951813829 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If the line $3x-2y+6=0$ meets x-axis and y-axis respectively at A and B, then the equation of the circle with radius AB and centre at A is _____

Options :

1. ✖ $x^2+y^2+4x+9=0$

2. ✔ $x^2+y^2+4x-9=0$

3. ✖ $x^2+y^2+4x+4=0$

4. ✖ $x^2+y^2+4x-4=0$

Question Number : 22 Question Id : 77951813830 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The equation $16x^2+y^2+8xy-74x-78y+212=0$ represents _____

Options :

1. ✖ a circle

2. ✔ a parabola

3. ✖ an ellipse

4. ✖ hyperbola

Question Number : 23 Question Id : 77951813831 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The equation of major axis of the ellipse $\frac{(x-1)^2}{9}+\frac{(y-6)^2}{4}=1$ is

Options :

1. ✖ $y-2=0$

2. ✔ $y=6$

3. ✖ $x-1=0$

4. ✖ $x=9$

Question Number : 24 Question Id : 77951813832 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The equation $\frac{x^2}{7-k}+\frac{y^2}{5-k}=1$ represents a hyperbola if _____

Options :

1. ✔ $5<k<7$

2. ✖ $k>5$

3. ✖ $k < 5 \text{ or } k > 7$

4. ✖ $k \neq 5, k \neq 7$

Question Number : 25 Question Id : 77951813833 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The vertex of the parabola $y = ax^2 + bx + c$ is _____

Options :

1. ✖ $\left(\frac{b}{2a}, \frac{b^2 - 4ac}{4a}\right)$

2. ✖ $\left(\frac{b}{2a}, \frac{4ac - b^2}{4a}\right)$

3. ✖ $\left(\frac{-b}{2a}, \frac{b^2 - 4ac}{4a}\right)$

4. ✔ $\left(\frac{-b}{2a}, \frac{4ac - b^2}{4a}\right)$

Question Number : 26 Question Id : 77951813834 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

$\underset{x \to 0}{Lt}\left(\frac{|x|}{x} + x + 2\right) =$ _____

Options :

1. ✖ 0

2. ✖ 1

3. ✖ 2

4. ✔ does not exist

Question Number : 27 Question Id : 77951813835 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

$$\lim_{x\to 0} \frac{e^{x^2}-\cos x}{\sin^2 x} = \_\_\_\_\_$$

Options :

1. ✖ 3

2. ✔ $\frac{3}{2}$

3. ✖ $\frac{5}{4}$

4. ✖ 2

Question Number : 28 Question Id : 77951813836 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following functions have finite number of points of discontinuity?

Options :

1. ✖ $\text{Tan}\, x$

2. ✖ $x[x]$

3. ✔ $\frac{|x|}{x}$

4. ✖ $Cotx$

Question Number : 29 Question Id : 77951813837 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If $\left(\frac{x}{a}\right)^n + \left(\frac{y}{b}\right)^n = 2$ then $\frac{dy}{dx}$ at (a,b) is _____

Options :

1. ✖ $\frac{a}{b}$

2. ✖ $-\frac{a}{b}$

3. ✖ $\frac{b}{a}$

4. ✔ $-\frac{b}{a}$

Question Number : 30 Question Id : 77951813838 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The set of all points of differentiability of the function $f(x) = e^{-|x|}$ is

Options :

1. ✖ $(0,\infty)$

2. ✖ $[0,\infty)$

3. ✖ $(-\infty,\infty)$

4. ✔ $(-\infty,\infty)-\{0\}$

Question Number : 31 Question Id : 77951813839 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If there is an error of $\frac{3}{10}\%$ in the volume of a sphere then the percentage error in its radius is

Options :

1. ✔ $\frac{1}{10}$

2. ✖ $\frac{2}{10}$

3. ✖ $\frac{3}{10}$

4. ✖ 3

Question Number : 32 Question Id : 77951813840 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The value of p such that the line joining $(0,3),(5,-2)$ is a tangent to the curve $y=\frac{p}{x+1}$ is

Options :

1. ✖ 23

2. ✔ 4

3. ✖ 3

4. ✖ 1

Question Number : 33 Question Id : 77951813841 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The interval in which $f(x)=2x^2-\log x$ increases is _____

Options :

1. ✖ $\left(-\frac{1}{2},0\right)$

2. ✖ $\left(0,\frac{1}{2}\right)$

3. ✖ $\left(-\frac{1}{2},\frac{1}{2}\right)$

4. ✔ $\left(\frac{1}{2},\infty\right)$

Question Number : 34 Question Id : 77951813842 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The function $y=xe^x$ has _____

Options :

1. ✔ Minimum value at $x=-1$

2. ✖ Minimum value at $x=0$

3. ✖ Maximum value at $x=-1$

4. ✖ Maximum value at $x=0$

Question Number : 35 Question Id : 77951813843 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A particle is moving in a straight line such that its distance at any time t is given by

$s=\frac{t^4}{4}-2t^3+4t^2+7$ then its acceleration is minimum at t = _____

Options :

1. ✖ 1

2. ✔ 2

3. ✖ $\frac{1}{2}$

4. ✖ $\frac{3}{2}$

Question Number : 36 Question Id : 77951813844 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If $\int \frac{1}{(x+100)\sqrt{x+99}} dx = f(x) + c$ then $f(x) =$ _____

Options :

1. ✖ $2\sqrt{(x+100)}$

2. ✖ $3\sqrt{(x+100)}$

3. ✔ $2\,\mathrm{Tan}^{-1}\sqrt{x+99}$

4. ✖ $2\,\mathrm{Tan}^{-1}\sqrt{x+100}$

Question Number : 37 Question Id : 77951813845 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

$\int \frac{1+\cos 4x}{\cot x - \tan x} dx =$ _____

Options :

1. ✖ $\frac{1}{4}\cos 4x + c$

2. ✖ $\frac{1}{8}\cos 4x + c$

3. ✖ $-\frac{1}{4}\cos 4x + c$

4. ✔ $-\frac{1}{8}\cos 4x + c$

Question Number : 38 Question Id : 77951813846 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If $I_n = \int \frac{t^n}{1+t^2} dt$ then $I_6 + I_4 =$ _____

Options :

1. ✖ $\frac{t^3}{3}$

2. ✖ $\frac{t^4}{4}$

3. ✔ $\frac{t^5}{5}$

4. ✖ $\frac{t^7}{7}$

Question Number : 39 Question Id : 77951813847 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

$\int (x+1)^2 e^x dx =$ _____

Options :

1. ✖ $xe^x + c$

2. ✖ x^2e^x+c

3. ✖ $(x+1)e^x+c$

4. ✔ $\left(x^2+1\right)e^x+c$

Question Number : 40 Question Id : 77951813848 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If $\int \frac{2x^2+a^2}{x^2\left(x^2+a^2\right)}dx=\frac{k}{x}+\frac{1}{a}\tan^{-1}\frac{x}{a}+c$ then $k=$ _____

Options :

1. ✖ 0

2. ✔ -1

3. ✖ 1

4. ✖ $\frac{1}{a}$

Question Number : 41 Question Id : 77951813849 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If $k\int_0^1 xf(3x)dx=\int_0^3 tf(t)dt$ then $k=$ _____

Options :

1. ✔ 9

2. ✖ 3

3. ✖ $\frac{1}{9}$

4. ✖ $\frac{1}{3}$

Question Number : 42 Question Id : 77951813850 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

$\int_a^b \left(|x-a|+|x-b|\right)dx =$ _____, $(0<a<b)$

Options :

1. ✔ $(b-a)^2$

2. ✖ $(b-a)$

3. ✖ $(b+a)$

4. ✖ $(b+a)^2$

Question Number : 43 Question Id : 77951813851 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

$\int_0^2 \left[x^2\right]dx =$ _____

Options :

1. ✖ 0

2. ✔ $5-\sqrt{2}-\sqrt{3}$

3. ✖

$5+\sqrt{2}+\sqrt{3}$

4. ✖ $\sqrt{2}+\sqrt{3}+\sqrt{5}$

Question Number : 44 Question Id : 77951813852 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If the order and degree of a differential equation $\left(\frac{d^4y}{dx^4}+\frac{d^2y}{dx^2}\right)^{\frac{5}{2}}=10\frac{d^2y}{dx^2}$ are p and q respectively, then $p+q=$

Options :

1. ✔ 9

2. ✖ 6

3. ✖ 7

4. ✖ 10

Question Number : 45 Question Id : 77951813853 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The differential equation of the family of concentric circles with Centre at the origin is

Options :

1. ✖ $x=y\frac{dy}{dx}$

2. ✖ $\frac{dy}{dx}=\frac{y}{x}$

3. ✔ $xdx+ydx=0$

4. ✖ $xdy+ydx=0$

Question Number : 46 Question Id : 77951813854 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

$\frac{dy}{dx} = xy + x + y + 1$ has the solution

Options :

1. ✖ $\log(y+1) = x^2 + x + c$

2. ✖ $\log(y+1) = x + c$

3. ✖ $\log(y+1) = -x + c$

4. ✔ $\log(y+1) = \frac{x^2}{2} + x + c$

Question Number : 47 Question Id : 77951813855 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The general solution of $\frac{ydx - xdy}{y^2} = 0$ represents a family of

Options :

1. ✔ Straight lines passing through the origin

2. ✖ Circles

3. ✖ parabolas

4. ✖ Hyperbolas

Question Number : 48 Question Id : 77951813856 Question Type : MCQ

Correct Marks : 1 Wrong Marks : 0

Which of the following is an integrating factor for the differential equation

$$x\cos x\frac{dy}{dx}+(x\sin x+\cos x)y=1\ ?$$

Options :

1. ✖ $x\cos x$

2. ✖ $x\sin x$

3. ✔ $x\sec x$

4. ✖ $x\cos ecx$

Question Number : 49 Question Id : 77951813857 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The equation of the curve passing through the origin and satisfying the differential equation

$$\frac{dy}{dx}=(x-y)^2 \text{ is } \_\_\_\_$$

Options :

1. ✔ $e^{2x}(1-x+y)=1+x-y$

2. ✖ $e^{2x}(1+x-y)=1-x+y$

3. ✖ $e^{2x}(1+x+y)=1-x+y$

4. ✖ $e^{2x}(1-x+y)=-(1+x+y)$

Question Number : 50 Question Id : 77951813858 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If the solution $y(x)$ of the given differential equation $\left(e^{y}+1\right)\cos x dx+e^{y}\sin x dy=0$ passes through the point $\left(\frac{\pi}{2},0\right)$, then the value of $e^{y\left(\frac{\pi}{6}\right)}$ is

Options :

1. ✖ 2

2. ✔ 3

3. ✖ e^{2}

4. ✖ e^{-3}

Physics

Section Id :	779518274
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Section Negative Marks :	0
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	779518290
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 77951813859 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If F is the force, S is the displacement and V is the velocity of the particle, the dimensions of the ratio FS/V^2 will be

Options :

1. ✖

M^0LT^0

2. ✔ $M^1L^0T^0$

3. ✖ M^0L^0T

4. ✖ $M^0L^0T^0$

Question Number : 52 Question Id : 77951813860 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Among the following, unit less quantity is

Options :

1. ✖ Velocity gradient

2. ✖ Pressure gradient

3. ✔ Displacement gradient

4. ✖ Force gradient

Question Number : 53 Question Id : 77951813861 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If the component of one vector in the direction of another vector is zero, then those two vectors are

Options :

1. ✖ parallel to each other

2. ✔ perpendicular to each other

3. ✖ opposite to each other

4. ✖ coplanar vectors

Question Number : 54 Question Id : 77951813862 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If the resultant of two vectors is equal to either of vectors, the angle between them is

Options :

1. ✖ 30^0

2. ✖ 60^0

3. ✖ 90^0

4. ✔ 120^0

Question Number : 55 Question Id : 77951813863 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The angle made by the vector $(2\hat{\imath}+2\hat{\jmath})$ with X-axis is

Options :

1. ✔ 45^0

2. ✖ 60^0

3. ✖ 90^0

4. ✖ 120^0

Question Number : 56 Question Id : 77951813864 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The length of a vector $(3\hat{\imath}+\hat{\jmath}+2\hat{k})$ in XY plane is

Options :

1. ✖ $\sqrt{14}$

2. ✖ 2

3. ✔ $\sqrt{10}$

4. ✖ $\sqrt{5}$

Question Number : 57 Question Id : 77951813865 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A stone projected up with a velocity 'u' reaches two points A and B at a distance 'h' with velocities u/2 and u/3. The maximum height reached by the stone is

Options :

1. ✖ $\frac{9h}{5}$

2. ✖ $\frac{27h}{4}$

3. ✖ $\frac{36h}{27}$

4. ✔

$\frac{36h}{5}$

Question Number : 58 Question Id : 77951813866 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A ball is thrown at a speed of 20 m s^{-1} at an angle of 30^0 with the horizontal. The maximum height reached by the ball is (g = 10 ms^{-2})

Options :

1. ✖ 2 m

2. ✖ 3 m

3. ✖ 4 m

4. ✔ 5 m

Question Number : 59 Question Id : 77951813867 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A body of mass 2 kg is moving with a constant acceleration of $(2\hat{i}+3\hat{j}-\hat{k})$ ms^{-2}. If the displacement made by the body is $(3\hat{i}-\hat{j}+2\hat{k})$ m then the work done is

Options :

1. ✔ 2 J

2. ✖ 10 J

3. ✖ 12 J

4. ✖ 22 J

Question Number : 60 Question Id : 77951813868 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The average power generated by a 90 kg mountain climber who climbs a summit of height 600 m in 90 minutes is ($g = 10\ ms^{-2}$)

Options :

1. 100 W ✔

2. 25 W ✖

3. 200 W ✖

4. 50 W ✖

Question Number : 61 Question Id : 77951813869 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A body of mass 16 kg explodes into two pieces of masses 4 kg and 12 kg. The velocity of the 12 kg mass is 4 ms^{-1}. The kinetic energy of the second piece is

Options :

1. 96 J ✖

2. 144 J ✖

3. 192 J ✖

4. 288 J ✔

Question Number : 62 Question Id : 77951813870 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Two bodies of masses of 1 g and 4 g are moving with equal kinetic energies. The ratio of the magnitudes of their linear momenta is

Options :

1. ✖ $4 : 1$

2. ✖ $\sqrt{2} : 1$

3. ✔ $1 : 2$

4. ✖ $1 : 16$

Question Number : 63 Question Id : 77951813871 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A sound absorber attenuates the sound level by 20 dB. The intensity decreases by a factor of

Options :

1. ✖ 10

2. ✔ 100

3. ✖ 1000

4. ✖ 10000

Question Number : 64 Question Id : 77951813872 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A source of sound is moving towards a wall with a speed of 20 ms^{-1}. The frequency of the sound produced by the source is 400 Hz. If the speed of the sound is 340 ms^{-1}, the beat frequency heard by a person standing near the wall is

Options :

1. ✔ 0 Hz

2. ✖ 2Hz

3. ✖ 5 Hz

4. ✖ 10 Hz

Question Number : 65 Question Id : 77951813873 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A person standing between two parallel hills fires a gun. He hears the first echo after 1.5 sec and second echo after 2.5 sec. If the speed of a sound is 332 ms^{-1}, the distance between the hills is

Options :

1. ✖ 654 m

2. ✔ 664 m

3. ✖ 674 m

4. ✖ 684 m

Question Number : 66 Question Id : 77951813874 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The velocity of sound in air is 330 ms^{-1}. To increase the apparent frequency of the sound by 50 %, the source should move towards the stationary observer with a velocity equal to

Options :

1. ✖ 330 ms^{-1}

2. ✖ 220 ms^{-1}

3. ✖ 165 ms^{-1}

4. ✔ 110 ms^{-1}

Question Number : 67 Question Id : 77951813875 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If the total absorption of a hall is doubled, the reverberation time will

Options :

1. ✖ Double

2. ✔ Become half

3. ✖ Remain same

4. ✖ Become four times

Question Number : 68 Question Id : 77951813876 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The volume V of an enclosure contains a mixture of gases like 16 g of oxygen, 28 g of nitrogen and 44 g of carbon dioxide at absolute temperature T. The pressure of the mixture of gases is (R is universal gas constant)

Options :

1. ✖ 3RT/V

2. ✖ 4RT/V

3. ✔ 5RT/2V

4. ✖ 88RT/V

Question Number : 69 Question Id : 77951813877 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Certain quantity of heat is supplied to a monoatomic ideal gas which expands at constant pressure. The percentage of heat that goes into work done by the gas is

Options :

1. ✖ 20%

2. ✔ 40%

3. ✖ 60%

4. ✖ 80%

Question Number : 70 Question Id : 77951813878 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The wrong statement among the following is

Options :

1. ✖ During free expansion, temperature of ideal gas does not change

2. ✖ During free expansion, temperature of real gas decreases

3. ✔ During free expansion of real gas temperature does not change

4. ✖ Free expansion is conducted in adiabatic manner

Question Number : 71 Question Id : 77951813879 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A monoatomic ideal gas, initially at temperature T_1 is enclosed in a cylinder fitted with a frictionless piston. The gas is allowed to expand adiabatically to a temperature T_2 by releasing the piston suddenly. If L_1 and L_2 are the lengths of the gas column, before and after the expansion, then the value of T_1/ T_2 will be

Options :

1. ✖ $(L_1/ L_2)^{2/3}$

2. ✔ $(L_2/ L_1)^{2/3}$

3. ✖ L_2/ L_1

4. ✖ L_1/ L_2

Question Number : 72 Question Id : 77951813880 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A gas behaves more closely as an ideal gas at

Options :

1. ✖ Low pressure and low temperature

2. ✔ Low pressure and high temperature

3. ✖ High pressure and low temperature

4. ✖ High pressure and high temperature

Question Number : 73 Question Id : 77951813881 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

If the maximum kinetic energy of emitted photo electrons from a metal is 0.9 eV and work function is 2.2 eV then the energy and wavelength of incident radiation are

Options :

1. ✔ 3.1 eV, 4000 A^0

2. ✖ 2.2 eV, 2000 A^0

3. ✖ 2.2 eV, 4000 A^0

4. ✖ 3.1 eV, 2000 A^0

Question Number : 74 Question Id : 77951813882 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The core of an optical fibre is surrounded by

Options :

1. ✔ Cladding

2. ✖ Plastic jacket

3. ✖ Air

4. ✖ Metal sheath

Question Number : 75 Question Id : 77951813883 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The favourable condition for superconducting state of a matter is

Options :

1. ✖ A weak electron-phonon interaction

2. ✔ A strong electron-phonon interaction

3. ✖ A strong phonon -phonon interaction

4. ✖ A weak phonon -phonon interaction

Chemistry

Section Id :	779518275
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25

Section Negative Marks :	0
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	779518291
Question Shuffling Allowed :	Yes

Question Number : 76 Question Id : 77951813884 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In which of the following, the number of unpaired electrons is maximum?

Options :

1. ✖ P^{3-} (Z=15)

2. ✔ S (Z=16)

3. ✖ Cl (Z=17)

4. ✖ Al^{3+} (Z=13)

Question Number : 77 Question Id : 77951813885 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The n, l values possible for a sublevel with seven degenerate orbitals are respectively (where n, l represent the symbols of principal and Azimuthal quantum numbers respectively)

Options :

1. ✔ 4, 3

2. ✖ 3, 4

3. ✖ 5, 1

4. ✖ 6, 2

Question Number : 78 Question Id : 77951813886 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The number of electrons with magnetic quantum number, $m_l = 0$ in chloride ion is (Cl (Z=17))

Options :

1. ✖ 6

2. ✖ 8

3. ✔ 10

4. ✖ 18

Question Number : 79 Question Id : 77951813887 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Atomic numbers of four elements A, B, C and D are (Z-1), (Z+2), Z and (Z+1), respectively. If Z=9, the type of bonding between A and B is (where Z= Atomic number of element)

Options :

1. ✖ Dative bond

2. ✖ Polar Covalent bond

3. ✔ Electrovalent bond

4. ✖ Non polar Covalent bond

Question Number : 80 Question Id : 77951813888 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Identify the molecule in which central atom is not obeying the octet rule.

Options :

1. ✖ H_2O

2. ✖ PCl_3

3. ✔ BF_3

4. ✖ NH_3

Question Number : 81 Question Id : 77951813889 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The mass of Na_2CO_3 (in g) (M.wt=106) present in 1.0 L of 0.05 M solution is

Options :

1. ✖ 0.53

2. ✖ 53.0

3. ✖ 26.5

4. ✔ 5.30

Question Number : 82 Question Id : 77951813890 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A gaseous mixture contains 14 g of N_2, 8.0 g of O_2 and 8.0 g of H_2. Total number of molecules present in the mixture is (N_A= Avogadro number)
(At.wt; H=1, N=14, O=16)

Options :

1. ✖ 2.75 N_A

2. ✖

3.75 N_A

3. ✔ 4.75 N_A

4. ✖ 1.50 N_A

Question Number : 83 Question Id : 77951813891 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The ratio of equivalent weights of HNO_3 and H_2SO_4 is

Options :

1. ✖ 9:5

2. ✖ 6:5

3. ✖ 7:9

4. ✔ 9:7

Question Number : 84 Question Id : 77951813892 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following cannot act as a buffer?

Options :

1. ✖ $NH_4OH + NH_4Cl$

2. ✖ $CH_3COOH + CH_3COONa$

3. ✖ $H_2CO_3 + Na_2CO_3$

4. ✔ $HCl + NaCl$

Question Number : 85 Question Id : 77951813893 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

200 mL of 0.1 M NaOH is allowed to react completely with 100 mL of 0.1 M HCl and the solution is diluted to 1.0 L by adding water. The pH of the mixture is

Options :

1. ✖ 3

2. ✖ 11

3. ✖ 2

4. ✔ 12

Question Number : 86 Question Id : 77951813894 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following is an example of non-electrolyte?

Options :

1. ✖ CH_3COONa

2. ✖ NaCl

3. ✖ NaOH

4. ✔ C_2H_5OH

Question Number : 87 Question Id : 77951813895 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In a galvanic cell, electrons flow from

Options :

1. ✖ anode to cathode through the solution

2. ✖ cathode to anode through the solution

3. ✔ anode to cathode through the external circuit

4. ✖ cathode to anode through the external circuit

Question Number : 88 Question Id : 77951813896 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Saturated solution of KNO_3 is used to make salt bridge because

Options :

1. ✖ Velocity of K^+ is greater than NO_3^-

2. ✖ Velocity of NO_3^- is greater than K^+

3. ✔ Velocity of K^+ approximately equal to NO_3^-

4. ✖ KNO_3 is highly soluble in water

Question Number : 89 Question Id : 77951813897 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A 2 kg water sample contains 408 mg of $CaSO_4$ (M.wt =136). The hardness in terms of $CaCO_3$ equivalents (in ppm) is

Options :

1. ✖ 100

2. ✖ 136

3. ✔ 150

4. ✖ 204

Question Number : 90 Question Id : 77951813898 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of following is responsible for temporary hardness of water?

Options :

1. ✖ $NaHCO_3$

2. ✔ $Ca\ (HCO_3)_2$

3. ✖ $NaHSO_4$

4. ✖ $CaCl_2$

Question Number : 91 Question Id : 77951813899 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Demineralised water can be obtained by using

Options :

1. ✖ Clark's method

2. ✖ Permutit method

3. ✖ Calgon's method

4. ✔ Ion exchange resin method

Question Number : 92 Question Id : 77951813900 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following is considered as high corrosive resistant material?

Options :

1. ✖ Cast iron

2. ✔ Stainless steel

3. ✖ Zinc

4. ✖ Mild steel

Question Number : 93 Question Id : 77951813901 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The wrong statement about corrosion is

Options :

1. ✖ Corrosion involves oxidation

2. ✖ Hydrated ferric oxide is called rust

3. ✔ Lesser the potential difference between the two metals, greater will be the corrosion of anodic metal

4. ✖ Coating of zinc on iron is an example of anodic coating

Question Number : 94 Question Id : 77951813902 Question Type : MCQ

Correct Marks : 1 Wrong Marks : 0

An example for condensation polymer is

Options :

1. ✖ Neoprene rubber

2. ✖ Natural rubber

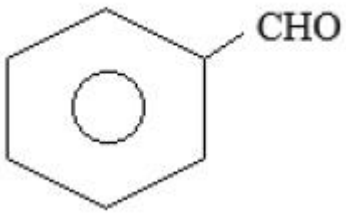
3. ✔ Urea - formaldehyde resin

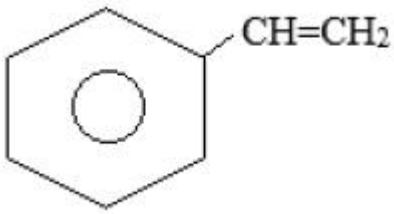
4. ✖ Polytetrafluoroethylene

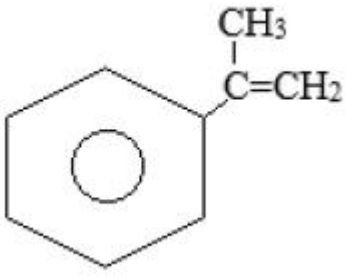
Question Number : 95 Question Id : 77951813903 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

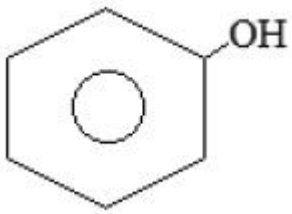
Buna-S is a polymer of monomers X and Y. If X is $CH_2 = CH - CH = CH_2$, then what is Y?

Options :

1. ✖ 

2. ✔ 

3. ✖ 

4. ✖ 

Question Number : 96 Question Id : 77951813904 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following is an elastomer?

Options :

1. ✔ Neoprene

2. ✖ Polyvinyl chloride

3. ✖ Bakelite

4. ✖ Teflon

Question Number : 97 Question Id : 77951813905 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The monomer of Teflon is

Options :

1. ✖ $F_2C = CF(Cl)$

2. ✖ $F_2C = CCl_2$

3. ✖ $F_2C = C\ (Br)Cl$

4. ✔

$F_2C = CF_2$

Question Number : 98 Question Id : 77951813906 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The major component of biogas is

Options :

1. ✔ CH_4

2. ✖ CO

3. ✖ N_2

4. ✖ NH_3

Question Number : 99 Question Id : 77951813907 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Ageing of skin, cataract and skin cancer are the result of

Options :

1. ✖ Acid rain

2. ✖ Green-house effect

3. ✔ Depletion of O_3 layer

4. ✖ CO Pollution

Question Number : 100 Question Id : 77951813908 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following is not a green-house effect gas?

Options :

1. ✖ N_2O

2. ✖ CH_4

3. ✖ CO_2

4. ✔ N_2

Mining Engineering

Section Id :	779518276
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Section Negative Marks :	0
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	779518292
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 77951813909 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Select the correct order with respect to the core sizes:

Options :

1. ✖ AX > BX > EX > NX

2. ✔ NX > BX > AX > EX

3. ✖ AX > BX > NX > EX

4. ✖ EX > AX > BX > NX

Question Number : 102 Question Id : 77951813910 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

A shock tube initiating system, such as nonel:

Options :

1. ✖ Doesn't need detonators for initiation

2. ✖ It can be used in underwater condition

3. ✔ It is not affected by static electricity or strong current

4. ✖ It creates lots of noise

Question Number : 103 Question Id : 77951813911 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The drilling pattern mostly followed in underground coal mine is

Options :

1. ✔ wedge cut

2. ✖ fan cut

3. ✖ coroment cut

4. ✖ drag cut

Question Number : 104 Question Id : 77951813912 Question Type : MCQ

Correct Marks : 1 Wrong Marks : 0

The distance between shafts or inclines or any other outlets in an underground mine shall be:

Options :

1. ✖ Not less than 10mm

2. ✔ Not less than 13.5mm

3. ✖ Not less than 12mm

4. ✖ Not less than 12.5mm

Question Number : 105 Question Id : 77951813913 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Insufficient stemming causes

Options :

1. ✖ over breakage of coal

2. ✖ excessive vibration

3. ✔ blown out shot

4. ✖ high power factor

Question Number : 106 Question Id : 77951813914 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

P5 permitted explosives used in 'solid blasting' in underground coal mine is initiated by

Options :

1. ✖ Instantaneous detonator

2. ✖

Short delay aluminium incendive detonator

3. ✔ Carrick short delay non-incendive detonator

4. ✖ Aluminium based long delay detonators

Question Number : 107 Question Id : 77951813915 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which one is not a characteristic of explosive?

Options :

1. ✖ Strength

2. ✖ Density

3. ✖ Resistivity

4. ✔ Young's modulus

Question Number : 108 Question Id : 77951813916 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Exploration drilling is done by:

Options :

1. ✔ Diamond drilling

2. ✖ Churn drilling

3. ✖ Percussion drilling

4. ✖ DTH drilling

Question Number : 109 Question Id : 77951813917 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The branch of the geology which deals with the study of structure of rocks known as

Options :

1. ✖ Physical geology

2. ✖ Geomorphology

3. ✔ Structural geology

4. ✖ Palaeontology

Question Number : 110 Question Id : 77951813918 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Limestone is which of the following?

Options :

1. ✔ Sedimentary Rock

2. ✖ Igneous Rock

3. ✖ Metaphoric Rock

4. ✖ Conduit Rock

Question Number : 111 Question Id : 77951813919 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Schist is which of the following?

Options :

1. ✔

Metaphoric Rock

2. ✖ Igneous Rock

3. ✖ Sedimentary Rock

4. ✖ Conduit Rock

Question Number : 112 Question Id : 77951813920 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The reverse fault is usually caused by

Options :

1. ✔ Horizontal thrust

2. ✖ Inclined thrust

3. ✖ Vertical thrust

4. ✖ Both horizontal and vertical thrust

Question Number : 113 Question Id : 77951813921 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The mineral deposit in solid rock is called

Options :

1. ✖ ore

2. ✔ lode

3. ✖ gangue

4. ✖ lithology

Question Number : 114 Question Id : 77951813922 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The instrument that records earthquakes is known as

Options :

1. ✖ thermometer

2. ✖ richter

3. ✔ seismographs

4. ✖ vibro-scanner

Question Number : 115 Question Id : 77951813923 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The nature of eruption of volcano is principally guided by

Options :

1. ✖ size of conduit

2. ✔ physical and chemical character of magma

3. ✖ crater

4. ✖ volcanic cones

Question Number : 116 Question Id : 77951813924 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following term is not used to describe a geological fault?

Options :

1. ✖ Syncline

2. ✔ Throw

3. ✖ Hade

4. ✖ Upthrow

Question Number : 117 Question Id : 77951813925 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following rock becomes marble when subjected to high temperature and pressure?

Options :

1. ✖ Sand stone

2. ✖ Shale

3. ✖ Slate

4. ✔ Lime stone

Question Number : 118 Question Id : 77951813926 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Magnetite is an ore of

Options :

1. ✔ Iron

2. ✖ Magnesite

3. ✖ Copper

4. ✖ Chromium

Question Number : 119 Question Id : 77951813927 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Size of a Panel for depillaring is influenced by which of the following?

Options :

1. ✖ construction of artificial panels

2. ✔ incubation period of coal seam

3. ✖ depth of cover

4. ✖ systematic support of the panel

Question Number : 120 Question Id : 77951813928 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Two coal seams are called contiguous if they are A m (maximum) apart from each other. A is given by

Options :

1. ✖ 3 m

2. ✖ 6 m

3. ✔ 9 m

4. ✖ no specific distance

Question Number : 121 Question Id : 77951813929 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following machine is used in Blasting gallery Method?

Options :

1. ✖ L.H.D

2. ✖ S.D.L

3. ✖ Remote controlled S.D.L

4. ✔ Remote controlled L.H.D

Question Number : 122 Question Id : 77951813930 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In a development district in B&P mining, there are 4 level headings and surrounded by barrier pillar. What are the maximum number of faces available in such district?

Options :

1. ✔ 10

2. ✖ 15

3. ✖ 9

4. ✖ 12

Question Number : 123 Question Id : 77951813931 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following machine is NOT used in Longwall mining?

Options :

1. ✖ Shearer

2. ✖ Armoured flexible conveyor

3. ✖ Stage loader

4. ✔ LHD

Question Number : 124 Question Id : 77951813932 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Where pillar extraction is about to begin in a B&P district, splitting or reduction of pillars or the heightening of galleries shall be restricted to how many pillars?

Options :

1. ✖ 6

2. ✔ 4

3. ✖ 5

4. ✖ 8

Question Number : 125 Question Id : 77951813933 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Coal pulp in hydraulic mining is transported by

Options :

1. ✔ flumes

2. ✖ belt conveyor

3. ✖ coal tub

4. ✖ scraper haulage

Question Number : 126 Question Id : 77951813934 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In longwall advancing the gate roads extend slightly beyond the face and the extended portion of the gate is called?

Options :

1. ✖ Buttok

2. ✖ Tail gate

3. ✔ Stable

4. ✖ Packwall

Question Number : 127 Question Id : 77951813935 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In Blasting Gallery Method, which of the following drilling is followed?

Options :

1. ✔ ring pattern

2. ✖ burn cut pattern

3. ✖ wedge cut

4. ✖ coromant cut

Question Number : 128 Question Id : 77951813936 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

"Goaf" with respect to Bord& Pillar or Longwall working means

Options :

1. ✔ Coal has been extracted but now not a working place

2. ✖ Coal has been extracted but still a working place

3. ✖ Coal is about to be extracted

4. ✖ People has lawful access

Question Number : 129 Question Id : 77951813937 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The small thickness of solid ore body left for the protection of lower level is called

Options :

1. ✔ Sill pillar

2. ✖ Crown pillar

3. ✖ Rib pillar

4. ✖ Ride pillar

Question Number : 130 Question Id : 77951813938 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Storage of broken ore near the shaft is known as which of the following?

Options :

1. ✖ Ore chute

2. ✔ Ore bin

3. ✖ Ore pass

4. ✖ Over hang

Question Number : 131 Question Id : 77951813939 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Among the following which is a Winze drivage method?

Options :

1. ✖ Center stack method

2. ✖ Peg method

3. ✔ Three compartment method

4. ✖ Middle stack method

Question Number : 132 Question Id : 77951813940 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In VCR method of mining, blasting is undertaken

Options :

1. ✖ One Row after another is blasted

2. ✖ With mass blast initial slot is created

3. ✔ All holes in the slice is blasted

4. ✖ One column after the other is blasted

Question Number : 133 Question Id : 77951813941 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Among the following which is not a type of secondary opening?

Options :

1. ✖

Levels

2. ✖ Cross-cuts

3. ✔ Shaft

4. ✖ Drifts

Question Number : 134 Question Id : 77951813942 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Among the following which is not a supported method of mining?

Options :

1. ✖ Cut and Fill mining

2. ✖ Square-set mining

3. ✖ Stull stoping

4. ✔ Shrinkage stoping

Question Number : 135 Question Id : 77951813943 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In a cut-and-fill stope, the main purpose of the back filling is to

Options :

1. ✖ reduce ore dilution

2. ✖ prevent high stress concentrations in far field domain

3. ✔ prevent displacement due to dilation of fractured wall rock

4. ✖ improve ore re-handling

Question Number : 136 Question Id : 77951813944 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The method of stoping suitable for thin ore bodies flat dip and both ore and walls are strong is?

Options :

1. ✖ Sublevel stoping

2. ✖ Top slicing

3. ✖ Longwall

4. ✔ Room and piller mining

Question Number : 137 Question Id : 77951813945 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Top slicing is an underhand caving method which is a variation of

Options :

1. ✖ breaststoping

2. ✖ shrinkagestoping

3. ✔ sublevelstoping

4. ✖ cut and fill stoping

Question Number : 138 Question Id : 77951813946 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Open stope method is used for ore of

Options :

1. ✖ High grade

2. ✔ Low grade

3. ✖ Weak

4. ✖ Strong

Question Number : 139 Question Id : 77951813947 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

CO_2 is best suited for extinguishing

Options :

1. ✖ Class A fire

2. ✔ Class B fire

3. ✖ Class C fire

4. ✖ Class D fire

Question Number : 140 Question Id : 77951813948 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

According to Haldane, the tolerable limit of Wet-bulb temperature is which of the following?

Options :

1. ✖ 307.5 K

2. ✖ 305.15 K

3. ✔

300.15 K

4. ✖ 304.3 K

Question Number : 141 Question Id : 77951813949 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which Law explains, about fluid flow?

Options :

1. ✖ Kirchoff's Law

2. ✔ Bernouilli's Theorem

3. ✖ Graham's Law of diffusion

4. ✖ Charles Law

Question Number : 142 Question Id : 77951813950 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Natural ventilation can be caused by

Options :

1. ✖ Auto-compression in downcast shaft

2. ✔ differences in air densities in upcast and downcast shafts

3. ✖ auto-expansion in upcast shaft

4. ✖ moisture content in the mine

Question Number : 143 Question Id : 77951813951 Question Type : MCQ

Correct Marks : 1 Wrong Marks : 0

In ventilation network, the number of branches that have that node as an end point is called as what?

Options :

1. ✔ Degree of a node

2. ✖ Mesh

3. ✖ Chord

4. ✖ Network degree

Question Number : 144 Question Id : 77951813952 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Flame safety lamp is used for testing

Options :

1. ✖ CO

2. ✖ CO_2

3. ✔ CH_4

4. ✖ H_2S

Question Number : 145 Question Id : 77951813953 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In selecting the head duty of the fan, the N.V.P. should be subtracted from the head required to overcome the mine resistance for passing the desired quantity when the N.V.P. is

Options :

1. ✖ Aids fan

2. ✔ Opposes fan

3. ✖ Follows fan

4. ✖ Sometime follows and sometime opposes fan

Question Number : 146 Question Id : 77951813954 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following instrument is used to measure the cooling power of the air?

Options :

1. ✖ Anemometer

2. ✖ Velometer

3. ✖ Manometer

4. ✔ Kata thermometer

Question Number : 147 Question Id : 77951813955 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

To determine the average velocity of air, how the anemometer is used?

Options :

1. ✔ Anemometer should be moved throughout the cross section of the roadway

2. ✖ It is kept at the roof of the gallery

3. ✖ It is laid at the floor of the roadway

4. ✖ It is moved along a straight line

Question Number : 148 Question Id : 77951813956 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The flame safety lamp used for accumulation test is

Options :

1. ✔ GL-5

2. ✖ GL-50

3. ✖ GL-60

4. ✖ GL-55

Question Number : 149 Question Id : 77951813957 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The disease caused due to insufficient light is

Options :

1. ✔ Nystagmus

2. ✖ Ankylostomiasis

3. ✖ Silicosis

4. ✖ Asbestosis

Question Number : 150 Question Id : 77951813958 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which type of Stone Dust Barrier is placed out bye of the face?

Options :

1. ✔ heavy barriers

2. ✖ light barriers

3. ✖ intermediate barriers

4. ✖ any kind of barriers

Question Number : 151 Question Id : 77951813959 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Fire damp percentage in the general body of return air shall not exceed

Options :

1. ✔ 0.75

2. ✖ 0.8

3. ✖ 0.6

4. ✖ 1.25

Question Number : 152 Question Id : 77951813960 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The color code of CO_2 gas extinguisher is which of the following?

Options :

1. ✖ Red

2. ✔ Black

3. ✖ Green

4. ✖ Blue

Question Number : 153 Question Id : 77951813961 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following do not have control over the circulation by natural ventilation?

Options :

1. ✖ barometric pressure

2. ✖ emission of methane

3. ✖ circulation of refrigerated air

4. ✔ specific heat of air

Question Number : 154 Question Id : 77951813962 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

What are the limits of explosibility of Firedamp?

Options :

1. ✖ 5.4-12.5%

2. ✖ 6.5-14.8%

3. ✔ 5.4 -14.8%

4. ✖ 6.5 – 12.5%

Question Number : 155 Question Id : 77951813963 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The horizontal angle between the true meridian and a line is called

Options :

1. ✔ Azimuth

2. ✖ Magnetic meridian

3. ✖ Whole circle angle

4. ✖ Arbitrary meridian

Question Number : 156 Question Id : 77951813964 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

By which rule, the total error in latitude and departure is distributed in proportion to the length of the sides?

Options :

1. ✖ Centesimal rule

2. ✖ Reversal point rule

3. ✖ Transit rule

4. ✔ Bowditch rule

Question Number : 157 Question Id : 77951813965 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Fixed hair and movable hair method are the classification of which method of tachometry?

Options :

1. ✔ Stadia method

2. ✖ Tangential method

3. ✖ Compass traversing

4. ✖ theodolite traversing

Question Number : 158 Question Id : 77951813966 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

It is the instrument used in determining the area of plots especially when the boundaries are irregular or curved

Options :

1. ✔ Coniometer

2. ✖ Planimeter

3. ✖ Compass

4. ✖ Theodolite

Question Number : 159 Question Id : 77951813967 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The errors in levelling due to earth curvature is

Options :

1. ✔ Positive

2. ✖ Negative

3. ✖ Cumulative

4. ✖ Constant

Question Number : 160 Question Id : 77951813968 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The reduced bearing of a line is S 57°36' W. What will be the whole circle bearing ?

Options :

1. ✔ 237°36'

2. ✖ 327°36'

3. ✖ 137°36'

4. ✖ 212°24'

Question Number : 161 Question Id : 77951813969 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

During chain surveying and plotting, we choose some shapes, name the shape

Options :

1. ✔ Equilateral triangle

2. ✖ Square

3. ✖ Obtuse-angle triangle

4. ✖ Rhombus

Question Number : 162 Question Id : 77951813970 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The levelling in which the height of a point(s) is measured with respect to change in atmospheric pressure is known as

Options :

1. ✖ Trigonometrical levelling

2. ✖ Profile levelling

3. ✖ Differential levelling

4. ✔ Barometric levelling

Question Number : 163 Question Id : 77951813971 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

An imaginary line joining the points of equal elevation on the surface of the earth represents

Options :

1. ✖ Contour surface

2. ✖ Contour gradient

3. ✔ Contour line

4. ✖ Level line

Question Number : 164 Question Id : 77951813972 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

One of the tacheometric constants is additive. The other constant is

Options :

1. ✖ Subtractive constant

2. ✔ Multiplying constant

3. ✖ Dividing constant

4. ✖

Indicative constant

Question Number : 165 Question Id : 77951813973 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

GIS is

Options :

1. ✖ Geological information system

2. ✖ Geodetic information system

3. ✔ Geographic information system

4. ✖ Global information system

Question Number : 166 Question Id : 77951813974 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In a levelling process, the staff was kept over a bench mark whose R.L. is 100m. The staff reading was 2.92m. Then the height of collimation of level is

Options :

1. ✖ 97.08m

2. ✔ 102.92m

3. ✖ 100m

4. ✖ 2.92m

Question Number : 167 Question Id : 77951813975 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

It is a device necessary to keep a driving motor running while stopping the driven machine.

Options :

1. ✖ converter

2. ✔ clutch

3. ✖ coupling

4. ✖ gear

Question Number : 168 Question Id : 77951813976 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Function of pull cord in the belt conveyor system is

Options :

1. ✖ Cleaning device

2. ✔ Safety stopping device

3. ✖ Material discharging on the side of the belt

4. ✖ Increasing the angle of wrap

Question Number : 169 Question Id : 77951813977 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Safety devices in rope haulages are primarily used to _____.

Options :

1. ✔ Prevent accidents and ensure safe operation

2. ✖ Increase speed of operation

3. ✖ Reduce material cost

4. ✖ Improve rope tensile strength

Question Number : 170 Question Id : 77951813978 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Locomotive haulage systems in mines are used for _____.

Options :

1. ✖ Horizontal transportation of materials over long distances

2. ✖ Vertical lifting of materials

3. ✖ Vertical transportation of materials and personnel

4. ✔ Underground transportation over short distances

Question Number : 171 Question Id : 77951813979 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In a cable belt conveyor, the function of the cable is to

Options :

1. ✖ Increase the lateral stiffness of the belt

2. ✖ Increase the tensile strength of the belt

3. ✔ Support and provide motion of the belt

4. ✖ Minimize elongation of the belt under tension

Question Number : 172 Question Id : 77951813980 Question Type : MCQ

Correct Marks : 1 Wrong Marks : 0

Function of snub pulley in the belt conveyor system?

Options :

1. ✖ Cleaning device

2. ✖ Safety device

3. ✖ Braking device

4. ✔ Increasing the angle of wrap

Question Number : 173 Question Id : 77951813981 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

In Koepe winding, the over winding is prevented by

Options :

1. ✔ Safety hook

2. ✖ Breakage of rope

3. ✖ Convergence of guides

4. ✖ Thickening of guides

Question Number : 174 Question Id : 77951813982 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The head against which a centrifugal pump has to work is called as

Options :

1. ✔ Manometric head

2. ✖ Delivery head

3. ✖ Static head

4. ✖ Suction head

Question Number : 175 Question Id : 77951813983 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which one of the following is a tyre mounted?

Options :

1. ✔ LHD

2. ✖ SDL

3. ✖ Dozer

4. ✖ Shovel

Question Number : 176 Question Id : 77951813984 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Joining of ropes is termed as

Options :

1. ✔ Rope splicing

2. ✖ Rope stretching

3. ✖ Rope stitching

4. ✖ Rope vulcanizing

Question Number : 177 Question Id : 77951813985 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The lowest ratio of metallic cross-sectional area to rope cross sectional area occurs in

Options :

1. ✖ Round stand rope

2. ✖ Flattened strand rope

3. ✖ Half locked coil rope

4. ✔ Full locked coil rope

Question Number : 178 Question Id : 77951813986 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The force required to cause movement is called

Options :

1. ✖ Drawbar pull

2. ✔ Tractive effort

3. ✖ Running force

4. ✖ Pull

Question Number : 179 Question Id : 77951813987 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Filling up of the void in opencast mines is known as

Options :

1. ✖ OB removal

2. ✖ trenching

3. ✔ reclamation

4. ✖ salvaging

Question Number : 180 Question Id : 77951813988 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following excavator will be used for a bench height of 20 m to 30 m in soft rock formation?

Options :

1. ✖ dragline

2. ✖ shovel

3. ✖ pay loader

4. ✔ bucket wheel excavator

Question Number : 181 Question Id : 77951813989 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The primary purpose of drilling and blasting in surface mining is to

Options :

1. ✖ Increase material transportation speed

2. ✖ Break rock and loosen ore for easy extraction

3. ✖ Stabilize mine walls

4. ✔ Reduce excavation machinery

Question Number : 182 Question Id : 77951813990 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The effective position of box cut for a deposit, where ratio of OB: Ore is least should be

Options :

1. ✖ At boundary of mineral

2. ✔ At the middle of the boundary

3. ✖ At high seam slope end

4. ✖ At any place

Question Number : 183 Question Id : 77951813991 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Stacker is commonly used to work in association with

Options :

1. ✖ Dragline

2. ✔ Bucket wheel excavator

3. ✖ Shovel

4. ✖ Payloader

Question Number : 184 Question Id : 77951813992 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Poisson Ratio refer to the

Options :

1. ✖ Rate of change of strain as a function of stress

2. ✖ Load applied on the material per unit area

3. ✔ Ratio of lateral strain to longitudinal strain

4. ✖ Lateral strain/Unit area

Question Number : 185 Question Id : 77951813993 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The plane dividing the sedimentary rock into beds or strata is called

Options :

1. ✖ fracture plane

2. ✔ bedding plane

3. ✖ plane of discontinuity

4. ✖ geo-technical plane

Question Number : 186 Question Id : 77951813994 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Phenomena of the rocks in immediate roof bend downwards under their own weight and tend to separate from one another is known as?

Options :

1. ✖ subsidence

2. ✖ pressure arch

3. ✔ bed separation

4. ✖ roof bending

Question Number : 187 Question Id : 77951813995 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

For testing a rock specimen in laboratory, the length: diameter ratio should be how much?

Options :

1. ✖ more than 1:2

2. ✔ more than 2:1

3. ✖ less than 2:1

4. ✖ less than 1:2

Question Number : 188 Question Id : 77951813996 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The load on a prop when upper member begins to slide is known as?

Options :

1. ✖ Load bearing capacity

2. ✖ Setting load

3. ✔ Yeild load

4. ✖ Limit load

Question Number : 189 Question Id : 77951813997 Question Type : MCQ

Correct Marks : 1 Wrong Marks : 0

Rock mechanics helps in understanding the behavior of rocks under

Options :

1. ✖ Environmental changes

2. ✔ Different loading conditions

3. ✖ Economic pressures

4. ✖ Deep water conditions

Question Number : 190 Question Id : 77951813998 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The rock mass classification system that considers "active stress" factor is

Options :

1. ✔ Q-system

2. ✖ RMR

3. ✖ RQD

4. ✖ GSI

Question Number : 191 Question Id : 77951813999 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The National Mineral Policy encourages the use of technology and modern exploration techniques for:

Options :

1. ✔ Conservation of minerals

2. ✖ Maximizing mineral extraction without considering environmental impacts

3. ✖ Accelerating deforestation for mining activities

4. ✖ Exploiting mineral resources indiscriminately

Question Number : 192 Question Id : 77951814000 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

It is the activity that cannot be performed until the predecessor event has occurred. Identify it:

Options :

1. ✔ PERT activity

2. ✖ CPM activity

3. ✖ optimistic activity

4. ✖ fast tracking activity

Question Number : 193 Question Id : 77951814001 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Leave with wages are calculated in case of person employed below ground at the rate of one for how many days of work performed by him?

Options :

1. ✔ 15

2. ✖ 20

3. ✖ 30

4. ✖ 25

Question Number : 194 Question Id : 77951814002 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following organizational structure is the simplest form and has clear lines of authority and ease of decision making?

Options :

1. ✖ Horizontal

2. ✖ Line

3. ✔ Vertical

4. ✖ Staff

Question Number : 195 Question Id : 77951814003 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Reportable injury means which involve a person to be absent from work for how many days?

Options :

1. ✖ more than 48 hrs

2. ✔ more than 72 hrs

3. ✖ more than 96 hrs

4. ✖ more than 120 hrs

Question Number : 196 Question Id : 77951814004 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The owner, agent or manager has to provide drinking water to every person how many litres?

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Question Number : 197 Question Id : 77951814005 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Safety management system is:

Options :

1. ✖ a plan only

2. ✔ a working document for improving safety

3. ✖ an action plan only

4. ✖ for safety inspection only

Question Number : 198 Question Id : 77951814006 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Which of the following uses three types of participants: decision makers, staff personnel, and respondents?

Options :

1. ✖ executive opinions

2. ✖ sales force composites

3. ✔ the Delphi method

4. ✖

time series analysis

Question Number : 199 Question Id : 77951814007 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

Periodical examinations of shaft, incline and other outlets shall be:

Options :

1. ✔ Once at least in every 7 days

2. ✖ Once at least on every 30 days

3. ✖ Once at least in every 15 days

4. ✖ Once at least in every 20 days

Question Number : 200 Question Id : 77951814008 Question Type : MCQ
Correct Marks : 1 Wrong Marks : 0

The first-aid room established under The Mines Rules, 1955 shall have a floor space of not less than

Options :

1. ✖ 12 square meters

2. ✔ 10 square meters

3. ✖ 20 square meters

4. ✖ 15 square meters