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 06th May 2025 Shift 2
Subject Name :	Mining Engineering
Creation Date :	2025-05-06 20:31:59
Duration :	180
Total Marks :	200
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
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 :	89040179
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 :	890401307
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory

Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	50
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	890401331
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 89040115613 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Order of the matrix $\begin{bmatrix} 1 & 6 \\ 2 & 0 \\ 7 & -1 \end{bmatrix}$ is

Options :

1. ✖ 1×3

2. ✔ 3×2

3. ✖ 2×2

4. ✖ 3×3

Question Number : 2 Question Id : 89040115614 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If two rows (or columns) of a determinant of order 3 are identical then the value of determinant is

Options :

1. ✔ 0

2. ✖ 1

3. ✖ 1

4. ✖

Question Number : 3 Question Id : 89040115615 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Co-factor of -4 in $\begin{vmatrix} 1 & 2 & 3 \\ -4 & 3 & 6 \\ 2 & -7 & 9 \end{vmatrix}$ is

Options :

1. ✖ 3

2. ✖ 11

3. ✖ 39

4. ✔ -39

Question Number : 4 Question Id : 89040115616 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The Matrix $\begin{bmatrix} a & h & g \\ h & b & f \\ g & f & c \end{bmatrix}$ is

Options :

1. ✖ skew symmetric

2. ✔ Symmetric

3. ✖ symmetric if a=b

4. ✖ Skew symmetric if b=c

Question Number : 5 Question Id : 89040115617 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $A = \begin{bmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$ then $(A^{-1}) =$

Options :

1. ✔ A

2. ✖ $-A$

3. ✖ -2A

4. ✖ 0

Question Number : 6 Question Id : 89040115618 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If deg f(x)≥deg g(x), then the rational fraction $f(x)/g(x)$ is called

Options :

1. ✖ Polynomial

2. ✖ Proper fraction

3. ✔ Improper fraction

4. ✖ irrational fraction

Question Number : 7 Question Id : 89040115619 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $\frac{3x}{x^2+x-2} = \frac{A}{x+2} + \frac{B}{x-1}$ then the ordered pair (A, B) is

Options :

1. ✖ $(1, 2)$

2. ✖ $(-1, 2)$

3. ✖ $(2, -1)$

4. ✔ $(2, 1)$

Question Number : 8 Question Id : 89040115620 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $\tan A = \frac{4}{3}$ then the value of $\cos 2A$ is

Options :

1. ✔ $-\frac{7}{25}$

2. ✖ $-\frac{7}{24}$

3. ✖ $-\frac{24}{7}$

4. ✖ $-\frac{7}{25}$

Question Number : 9 Question Id : 89040115621 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $-1 \leq x \leq 1$, then $\cos^{-1} x + \sin^{-1} x =$

Options :

1. ✖ $-\frac{\pi}{2}$

2. ✖ $\frac{\pi}{4}$

3. ✔ $\frac{\pi}{2}$

4. ✖ $-\frac{\pi}{16}$

Question Number : 10 Question Id : 89040115622 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\text{Sin } 15^0 =$

Options :

1. ✖ $\frac{\sqrt{3}-1}{\sqrt{3}+2}$

2. ✔ $\frac{\sqrt{6}-\sqrt{2}}{4}$

3. ✖ $\sqrt{6} \pm 1$

4. ✖ $\frac{\sqrt{6}+\sqrt{2}}{4}$

Question Number : 11 Question Id : 89040115623 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $2\cos\theta = x + \frac{1}{x}$ then $2\cos 3\theta =$

Options :

1. ✖ $x^3 - \frac{1}{x^3}$

2. ✖ $-x^3 + \frac{1}{x^3}$

3. ✔ $x^3 + \frac{1}{x^3}$

4. ✖ $x^2 + \frac{1}{x^3}$

Question Number : 12 Question Id : 89040115624 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In any ΔABC, $\tan\frac{B+C}{2} =$

Options :

1. ✖ $c\cot\frac{A}{2}$

2. ✔ $\cot\frac{A}{2}$

3. ✖ $\tan\frac{A}{2}$

4. ✖ $\tan\frac{C}{2}$

Question Number : 13 Question Id : 89040115625 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

In a triangle ΔABC, the value of $\cos\left(\frac{B+C}{2}\right)$ in terms of angle A

Options :

1. ✖ $\sqrt{\sin\frac{A}{2}}$

2. ✖ $\sqrt{A/2}$

3. ✔ $\sin\frac{A}{2}$

4. ✖ $\sqrt{2A}$

Question Number : 14 Question Id : 89040115626 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The value of $\sin 45^0$ is

Options :

1. ✖ $\sqrt{2}$

2. ✖ 1

3. ✖ 0

4. ✔ $1/\sqrt{2}$

Question Number : 15 Question Id : 89040115627 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

In a ΔABC, if $a = 13, b = 14$ and $c = 15$ then the value of $\tan\left(\frac{A}{2}\right)$ is

Options :

1. ✖ $\frac{1}{4}$

2. ✖ $\frac{3}{4}$

3. ✔ $\frac{1}{2}$

4. ✖ $\frac{1}{6}$

Question Number : 16 Question Id : 89040115628 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a ΔABC, $\sum a^3 \cos(B - C) =$

Options :

1. ✖ 4abc

2. ✔ 3abc

3. ✖ 4a+b+c

4. ✖ abc

Question Number : 17 Question Id : 89040115629 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Principle value of $\cot^{-1}(-1)$ is

Options :

1. ✖ $\frac{2\pi}{3}$

2. ✖ $-\frac{2\pi}{3}$

3. ✖ π

4. ✔ $\frac{3\pi}{4}$

Question Number : 18 Question Id : 89040115630 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$(-1+2\mathrm{i})+\left(\frac{1}{2}-\mathrm{i}\right)=$

Options :

1. ✖ $\frac{1}{2}+\mathrm{i}$

2. ✖ $-\frac{1}{2}-\mathrm{i}$

3. ✔ $-\frac{1}{2}+\mathrm{i}$

4. ✖ $\frac{1}{2}\pm\mathrm{i}$

Question Number : 19 Question Id : 89040115631 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

For any real θ, $(\cos\theta+i\sin\theta)(\cos\theta-i\sin\theta)=$

Options :

1. ✔ 1

2. ✖ -1

3. ✖ 0

4. ✖ 4i

Question Number : 20 Question Id : 89040115632 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The centre and radius of the circle $x^2 + y^2 - 4x - 8y - 41 = 0$ are

Options :

1. ✖ $(1, -2), 5$

2. ✖ $(2,1), 3$

3. ✔ $(2,4), \sqrt{61}$

4. ✖ $(1, -2), \sqrt{51}$

Question Number : 21 Question Id : 89040115633 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The number of common tangents to the circles $x^2 + y^2 - x = 0$ and $x^2 + y^2 + x = 0$ is

Options :

1. ✖ 2

2. ✖ 1

3. ✖ 4

4. ✔ 3

Question Number : 22 Question Id : 89040115634 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Equation of the circle with centre $(-3, 2)$ and radius 4 is

Options :

1. ✖ $(x^2 + 3)^2 + (y + 2)^2 = 4^2$

2. ✖ $(x - 3)^2 + (y + 2)^2 = 16$

3. ✔ $(x + 3)^2 + (y - 2)^2 = 16$

4. ✖ $(x - 2) + (y + 3)^2 = 4^2$

Question Number : 23 Question Id : 89040115635 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The length of the latus rectum of the parabola $y^2 = 12x$ and the focal distance of the point $(3, -6)$ is

Options :

1. ✖ $3,\ 4$

2. ✖ $2,\ 6$

3. ✖ $-12,\ 6$

4. ✔ $12,\ 6$

Question Number : 24 Question Id : 89040115636 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The equation of the Parabola, whose focus is (0,-2) and the vertex is (0,0), is

Options :

1. ✖ $y^2=32x$

2. ✔ $x^2=-8y$

3. ✖ $x^2=4y$

4. ✖ $y^2=-32x$

Question Number : 25 Question Id : 89040115637 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The eccentricity of $x^2+2y^2=3$ is

Options :

1. ✖ $\frac{1}{\sqrt{2}}$

2. ✖ $\sqrt{2}$

3. ✖ $\pm\sqrt{2}$

4. ✔ $\frac{\sqrt{3}}{2}$

Question Number : 26 Question Id : 89040115638 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\frac{d}{dx}[e^x(x^2+1)] =$

Options :

1. ✔ $e^x(2x+x^2+1)$

2. ✖ $e^x(2x-x^2+1)$

3. ✖ $e^x(2x+x^3+1)$

4. ✖ $e^{-x}(2x+x^2+1)$

Question Number : 27 Question Id : 89040115639 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

When $a>0$, $\lim_{x\to 0} \frac{a^x-1}{x} =$

Options :

1. ✔ log a

2. ✖ 0

3. ✖ log (x-1)

4. ✖ log (x-a)

Question Number : 28 Question Id : 89040115640 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\frac{d}{dx}[\tan^{-1}x] =$

Options :

1. ✔ $\frac{1}{x^2+1}$

2. ✖ $-\frac{1}{x^2-1}$

3. ✖ $\frac{2}{x^2+2}$

4. ✖ $-\frac{1}{x^2+1}$

Question Number : 29 Question Id : 89040115641 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If 4x-7y+15=0 then derivative of y with respect to x is

Options :

1. ✖ -4/7

2. ✖ 0

3. ✖ 4

4. ✔ 4/7

Question Number : 30 Question Id : 89040115642 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

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

Options :

1. ✔ $-\cos x$

2. ✖ $-\sin x$

3. ✖ $\cos x$

4. ✖ $\sin x$

Question Number : 31 Question Id : 89040115643 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If u= $e^x \sin y$ then first partial derivative of u with respect to y is

Options :

1. ✖ $e^x \sin y$

2. ✔ $e^x \cos y$

3. ✖ $-e^x \cos y$

4. ✖ 0

Question Number : 32 Question Id : 89040115644 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\frac{d}{dx}\left(e^{3\log x}\right) =$

Options :

1. ✖ $\log x$

2. ✖

$3x$

3. ✖ x^3

4. ✔ $3x^2$

Question Number : 33 Question Id : 89040115645 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $u(x,y) = \text{Sin}^{-1}\frac{x}{y} + \text{Tan}^{-1}\frac{y}{x}$ then $xu_x + yu_y =$

Options :

1. ✖ $u'(x,y)$

2. ✔ 0

3. ✖ 1

4. ✖ $u(x,\ y)$

Question Number : 34 Question Id : 89040115646 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $S = 12t - 3t^2$ then $\frac{ds}{dt} =$

Options :

1. ✔ $12 - 6t$

2. ✖ $12t - 6$

3. ✖

$12 - 3t$

4. ✗ $12 - 6t^2$

Question Number : 35 Question Id : 89040115647 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

$\int \cot^2 x \, dx =$

Options :

1. ✗ $-\cot x + x + c$

2. ✗ $\cot x - x + c$

3. ✗ $\cot^2 x - x + c$

4. ✓ $-\cot x - x + c$

Question Number : 36 Question Id : 89040115648 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

$\int \frac{1}{\sqrt{a^2 - x^2}} \, dx =$

Options :

1. ✗ $\log\left|x + \sqrt{x^2 + a^2}\right| + c$

2. ✗ $\log\left|x + \sqrt{x^2 - a^2}\right| + c$

3. ✓ $\sin^{-1}\frac{x}{a} + c$

4. ✖ $\sin^{-1}x$

Question Number : 37 Question Id : 89040115649 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\int e^x \cos x \, dx =$

Options :

1. ✔ $\frac{1}{2}e^x(\cos x + \sin x) + c$

2. ✖ $\frac{1}{2}e^x \cos x$

3. ✖ $\frac{1}{2}e^x(\cos x + \operatorname{cosec} x) + c$

4. ✖ $\frac{1}{2}e^x(\cos x - \sin x) + c$

Question Number : 38 Question Id : 89040115650 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\int \frac{dx}{\sqrt{x}} =$

Options :

1. ✖ $-2\sqrt{x} + c$

2. ✖ $\sqrt{x} + c$

3. ✔ $2\sqrt{x} + c$

4. ✖ $x + c$

Question Number : 39 Question Id : 89040115651 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\int \sin\frac{y}{2} dy =$

Options :

1. ✖ $2\cos\frac{y}{2} + c$

2. ✖ $2\sin x/2 + c$

3. ✖ $2\cos 2y + c$

4. ✔ $-2\cos\frac{y}{2} + c$

Question Number : 40 Question Id : 89040115652 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

$\int_0^{\pi} dx =$

Options :

1. ✖ $\frac{\pi}{2}$

2. ✖ $-\frac{\pi}{2}$

3. ✔ π

4. ✖ $\frac{\pi}{8}$

Question Number : 41 Question Id : 89040115653 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If f(x) is an even function, then $\int_{-a}^{a} f(x)dx=$

Options :

1. ✖ $\int_{0}^{a} f(x)dx$

2. ✔ $2\int_{0}^{a} f(x)dx$

3. ✖ $2a$

4. ✖ 0

Question Number : 42 Question Id : 89040115654 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The area under the curve $f(x) = \sin x$ in $[0,2\pi]$ is

Options :

1. ✖ 1

2. ✖ 3

3. ✖ -4

4. ✔ 4

Question Number : 43 Question Id : 89040115655 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

When a=b then $\int_a^b f(x)dx =$

Options :

1. ✖ b

2. ✔ 0

3. ✖ a

4. ✖ 2a

Question Number : 44 Question Id : 89040115656 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The Order of the differential equation $\left[\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^3\right]^{6/5} = 6y$ is

Options :

1. ✖ 3

2. ✔ 2

3. ✖ 6/5

4. ✖ 3

Question Number : 45 Question Id : 89040115657 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The Integrating factor of $\frac{dy}{dx} + 3x = 2y$ is

Options :

1. ✖

e^{3x}

2. ✔ e^{-2x}

3. ✖ e^{x}

4. ✖ 0

Question Number : 46 Question Id : 89040115658 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Transform $dx + xdy = e^{-y}\sec^2 y\, dy$ into linear form

Options :

1. ✖ $\frac{dx}{dy} - x = e^{-y}\sec^2 y$

2. ✖ $\frac{dx}{dy} = e^{-y}\sec^2 y$

3. ✖ $\frac{dx}{dy} + x = e^{-y}\sec^2 y + c$

4. ✔ $\frac{dx}{dy} + x = e^{-y}\sec^2 y$

Question Number : 47 Question Id : 89040115659 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The necessary and sufficient condition for the differential equation $Mdx + Ndy = 0$ to be exact is

Options :

1. ✖

$$\frac{\partial M}{\partial y} = \frac{\partial N}{\partial y}$$

2. ✔ $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x}$

3. ✖ $\frac{\partial M}{\partial y} \neq \frac{\partial N}{\partial x}$

4. ✖ $\frac{\partial M}{\partial x} = \frac{\partial N}{\partial x}$

Question Number : 48 Question Id : 89040115660 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Complementary function of the differential equation $(D^3 - 8)y = x$ is

Options :

1. ✖ $c_1e^{2x} + e^x\{c_2\cos(x\sqrt{3}) + c_3\sin x\sqrt{3}\}$

2. ✖ $c_1e^{2x} + e^{-x}(\cos\sqrt{3} + \sin\sqrt{3})$

3. ✖ $c_1e^{-2x} + c_2e^{-x} + c_3\cos x$

4. ✔ $c_1e^{2x} + e^{-x}\{c_2\cos(x\sqrt{3}) + c_3\sin(x\sqrt{3})\}$

Question Number : 49 Question Id : 89040115661 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Bernoulli's equation is of the form

Options :

1. ✖ $\left(\frac{dy}{dx}\right) + y = Qy$

2. ✖ $\left(\frac{dy}{dx}\right)^2 + y^n = Qy$

3. ✔ $\left(\frac{dy}{dx}\right) + Py = Qy^n$

4. ✖ $\left(\frac{d^2y}{dx^2}\right) + Py = Qy^n$

Question Number : 50 Question Id : 89040115662 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Particular integral of $f(D)y = \cos ax$ is

Options :

1. ✔ $\frac{1}{f(-a^2)}\ cosax\ if f(-a^2) \neq 0$

2. ✖ $\frac{1}{f(a^2)}\ cosax\ if f(-a^2) \neq 0$

3. ✖ $\frac{1}{f(a)}\ cosax\ if f(-a^2) \neq 0$

4. ✖ $\frac{1}{2}\ cosax\ if f(-a^2) \neq 0$

Physics

Section Id :	890401308
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	890401332
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 89040115663 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the unit of mass is 1 Kg, the unit of length is 1m and the unit of time is 1 minute, the unit of pressure in Nm^{-2} is

Options :

1. ✖ $^1/_{60}$

2. ✖ 60

3. ✔ $^1/_{3600}$

4. ✖ 3600

Question Number : 52 Question Id : 89040115664 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

MLT^{-1} is the dimensional formula for

Options :

1. ✖

Speed

2. ✖ Acceleration

3. ✔ Impulse

4. ✖ Force

Question Number : 53 Question Id : 89040115665 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If $|\vec{A} \times \vec{B}| = \sqrt{3}\,\vec{A}\,.\,\vec{B}$ then the value of $|\vec{A} + \vec{B}|$ is

Options :

1. ✔ $(A^2 + B^2 + AB)^{1/2}$

2. ✖ $(A^2 + B^2 + \frac{AB}{\sqrt{2}})^{1/2}$

3. ✖ $A + B$

4. ✖ $(A^2 + B^2 + \sqrt{3}AB)^{1/2}$

Question Number : 54 Question Id : 89040115666 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Of the vectors given below, the parallel vectors are

$\vec{A} = 6\hat{\imath} + 8\hat{\jmath}$ $\vec{B} = 210\hat{\imath} + 280\hat{k}$ $\vec{C} = 5.1\hat{\imath} + 6.8\hat{\jmath}$ $\vec{D} = 3.6\hat{\imath} + 8\hat{\jmath} + 48\hat{k}$

Options :

1. ✔ $\vec{A}$ and $\vec{C}$

2. ✖ $\vec{A}$ and $\vec{B}$

3. ✖ $\vec{A}$ and $\vec{D}$

4. ✖ $\vec{C}$ and $\vec{D}$

Question Number : 55 Question Id : 89040115667 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The position x of a particle with respect to time 't ' along x- axis is given by $x = 9t^2 - t^3$ where x is in metres and t in seconds. The position of this particle when it achieves maximum speed along the x direction is

Options :

1. ✖ 24 m

2. ✖ 32 m

3. ✔ 54 m

4. ✖ 81 m

Question Number : 56 Question Id : 89040115668 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A ball is projected vertically up with a velocity of 40 ms^{-1} from ground. At the same time another ball is dropped from a height of 100 m. The magnitudes of their velocities are equal after

Options :

1. ✖ 1 s

2. ✔ 2 s

3. ✖ 3 s

4. ✖ 4 s

Question Number : 57 Question Id : 89040115669 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Two stones are projected with the same speed but making different angles with the horizontal. Their horizontal ranges are equal. The angle of projection of one is $\pi/3$ and the maximum height reached by it is 102 metres. Then the maximum height reached by the other in metres is

Options :

1. ✖ 336

2. ✖ 224

3. ✖ 56

4. ✔ 34

Question Number : 58 Question Id : 89040115670 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A projectile is thrown into air with velocity u at an angle θ to the horizontal.
The time at which its direction of motion is perpendicular to its initial direction is

Options :

1. ✔ $\frac{u}{g \sin\theta}$

2. ✖

$\frac{u}{g\cos\theta}$

3. ✖ $\frac{u}{g\tan\theta}$

4. ✖ $\frac{u}{g\cot\theta}$

Question Number : 59 Question Id : 89040115671 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

When a bicycle is in motion and pedalled, the force of friction exerted by ground on the two wheels is such that it acts

Options :

1. ✔ In the backward direction on the front wheel and in the forward direction on the rear wheel

2. ✖ In the forward direction on the front wheel and in the backward direction on the rear wheel

3. ✖ In the backward direction on both the front and rear wheels

4. ✖ In the forward direction on both the front and rear wheels

Question Number : 60 Question Id : 89040115672 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Two blocks of masses 4 Kg and 2 Kg are connected by a heavy string and placed on rough horizontal plane. The 2 Kg block is pulled with a constant force F. The coefficient of friction between the blocks and the ground is 0.5. The value of F so that tension in the string is constant throughout during the motion of the blocks is

Options :

1. ✖

40 N

2. ✔ 30 N

3. ✖ 50 N

4. ✖ 60 N

Question Number : 61 Question Id : 89040115673 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a hydroelectric power station, the height of the dam is 10 m. How many kilograms of water must fall per second on the blades of a turbine in order to generate 1 MW of electrical power? [$g = 10\ m/s^2$].

Options :

1. ✖ $10^3\ Kg/s$

2. ✔ $10^4\ Kg/s$

3. ✖ $10^5\ Kg/s$

4. ✖ $10^6\ Kg/s$

Question Number : 62 Question Id : 89040115674 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The kinetic energy at the highest point of the trajectory of a projectile is 200 J. If the mass of the projectile is 1 Kg and the maximum height reached by it is 20 m, then velocity of the projectile from the ground is

Options :

1. ✖ 20 m/s

2. ✖ 10 m/s

3. ✔ $20\sqrt{2}$ m/s

4. ✖ $10\sqrt{2}$ m/s

Question Number : 63 Question Id : 89040115675 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A force applied by an engine on train of mass 2.05×10^6 Kg changes its velocity from 5 m/s to 25 m/s in 5 minutes. The power of the engine is

Options :

1. ✖ 1.025 MW

2. ✔ 2.05 MW

3. ✖ 5 MW

4. ✖ 6 MW

Question Number : 64 Question Id : 89040115676 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Two identical wires have a fundamental frequency of 100 Hz when kept under the same tension. If the tension of one of the wires is increased by 21%, the number of beats produced is

Options :

1. ✖ 11

2. ✔ 10

3. ✖ 9

4. ✖ 8

Question Number : 65 Question Id : 89040115677 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A body executing S.H.M. has a maximum velocity of 1 ms^{-1} and a maximum acceleration of 4 ms^{-2}. Its amplitude in metres is:

Options :

1. ✖ 1

2. ✖ 0.75

3. ✖ 0.5

4. ✔ 0.25

Question Number : 66 Question Id : 89040115678 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A simple pendulum of length l_1 has frequency $\frac{1}{4}$ Hz and another simple pendulum of length l_2 has frequency $\frac{1}{3}$ Hz. Then time period of pendulum of length $(l_1 - l_2)$ is

Options :

1. ✖ 5 s

2. ✖ 1 s

3. ✔ $\sqrt{7}$ s

4. ✖ $\sqrt{12}$ s

Question Number : 67 Question Id : 89040115679 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A source of sound producing wavelength of 50 cm is moving away from stationary observer with $\frac{1^{th}}{5}$ speed of sound. The wavelength of the sound heard by the observer is

Options :

1. ✖ 70 cm

2. ✖ 55 cm

3. ✖ 40 cm

4. ✔ 60 cm

Question Number : 68 Question Id : 89040115680 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

To have a good sound effect inside a hall

Options :

1. ✖ the hall should not have any sound absorbing material

2. ✖ the reverberation time has to be maximum

3. ✖ the reverberation time has to be zero

4. ✔ the reverberation time has to be optimum

Question Number : 69 Question Id : 89040115681 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

If the pressure of an ideal gas contained in a closed vessel is increased by 0.5%, the increase in temperature is 2°C. The initial temperature of the gas is

Options :

1. ✖ 27°C

2. ✔ 127°C

3. ✖ 300°C

4. ✖ 400°C

Question Number : 70 Question Id : 89040115682 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

During the free expansion of an ideal gas, which of the following physical quantity remains constant

Options :

1. ✔ Temperature

2. ✖ Pressure

3. ✖ Volume

4. ✖ Ratio of pressure to volume

Question Number : 71 Question Id : 89040115683 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The specific heat at constant volume for a monoatomic gas is 0.075 cal/kg/K and its gram molecular specific heat is 3 cal/mol/K. Then mass of one atom of that gas is

Options :

1. ✔ 6.67×10^{-23} gm

2. ✖ 6.67×10^{23} gm

3. ✖ 2×10^{-23} gm

4. ✖ 2×10^{23} gm

Question Number : 72 Question Id : 89040115684 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

A rigid diatomic ideal gas undergoes an adiabatic process at room temperature. The relation between temperature and volume of this process is TV^x = constant. Then x is

Options :

1. ✖ $\frac{5}{3}$

2. ✔ $\frac{2}{5}$

3. ✖ $\frac{2}{3}$

4. ✖ $\frac{3}{5}$

Question Number : 73 Question Id : 89040115685 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A carnot engine having an efficiency of $\frac{1}{10}$ as heat engine, is used as a refrigerator. If the work done on the system is 10 J, the amount of energy absorbed from the reservoir at lower temperature is

Options :

1. ✖ 100 J

2. ✖ 99 J

3. ✔ 90 J

4. ✖ 80 J

Question Number : 74 Question Id : 89040115686 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Two photons of energy 2.5 eV and 3.5 eV fall on a metal surface of work function 1.5 eV.

The ratio of the maximum velocities of the photoelectrons emitted from the metal surface is

Options :

1. ✖ 1 : 4

2. ✖ 2 : 1

3. ✖ 1 : 2

4. ✔ $1 : \sqrt{2}$

Question Number : 75 Question Id : 89040115687 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

At critical angle, the angle of refraction is

Options :

1. ✖ 45^0

2. ✔ 90^0

3. ✖ 120^0

4. ✖ 180^0

Chemistry

Section Id :	890401309
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	890401333
Question Shuffling Allowed :	Yes

Question Number : 76 Question Id : 89040115688 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The quantum number which describes the shape of an atomic orbital is indicated by the symbol

Options :

1. ✔ l

2. ✖ m_l

3. ✖

m_s

4. ✗ n

Question Number : 77 Question Id : 89040115689 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

"No two electrons in an atom can have the same set of four quantum numbers".
This is known as

Options :

1. ✗ Pauli`s Principle

2. ✓ Hund`s Rule

3. ✗ Aufbau Principle

4. ✗ Lewis Rule

Question Number : 78 Question Id : 89040115690 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

In the elements with atomic number Z=1 to Z=20,
how many of them have no unpaired electrons in their ground state?

Options :

1. ✗ 8

2. ✗ 4

3. ✗ 10

4. ✓ 6

Question Number : 79 Question Id : 89040115691 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is not a property of covalent compounds?

Options :

1. ✖ They are generally insoluble in water

2. ✖ They consist of molecules

3. ✖ They exist as solids, liquids or gases

4. ✔ The reactions between them are fast

Question Number : 80 Question Id : 89040115692 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The sum of covalent bonds in H_2, N_2 and HCl is

Options :

1. ✖ 4

2. ✔ 5

3. ✖ 6

4. ✖ 3

Question Number : 81 Question Id : 89040115693 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

How many grams of NaOH is required to prepare 5.0 litre of 0.1 N solution?
(Given: At. wt: H=1, O=16, Na=23)

Options :

1. ✔ 20

2. ✖ 30

3. ✖ 10

4. ✖ 50

Question Number : 82 Question Id : 89040115694 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A gaseous mixture contains 8g of oxygen, 14 g of nitrogen and 8 g of hydrogen.
Total number of molecules present in the gaseous mixture is
(Given: At. wt: H=1, N=14, O=16, N_A= 6 x 10^{23} mol^{-1})

Options :

1. ✖ 1.43 X 10^{23}

2. ✖ 2.85 X 10^{23}

3. ✔ 2.85 X 10^{24}

4. ✖ 1.85 X 10^{24}

Question Number : 83 Question Id : 89040115695 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The equivalent weight of which of the following is the highest?

Options :

1. ✖ Na_2CO_3 (molecular weight = 106)

2. ✖ H_3PO_4 (molecular weight = 98)

3. ✔ $H_2C_2O_4.2H_2O$ (molecular weight = 126)

4. ✖ $AlCl_3$ (molecular weight = 133.5)

Question Number : 84 Question Id : 89040115696 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

At 25^0C, ionic product (Kw) of 0.01M HCl solution is

Options :

1. ✖ 1.0×10^{-13} mol^2/L^2

2. ✖ 1.0×10^{-12} mol^2/L^2

3. ✔ 1.0×10^{-14} mol^2/L^2

4. ✖ 1.0×10^{-15} mol^2/L^2

Question Number : 85 Question Id : 89040115697 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following combinations give a buffer solution?

Options :

1. ✖ HCl + NaCl

2. ✔ $CH_3COOH + CH_3COONa$

3. ✖ $CH_3COOH + NaCl$

4. ✖ $NH_4OH + NaOH$

Question Number : 86 Question Id : 89040115698 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A current of 0.5 amp is passed through molten $AlCl_3$ for 96.5 seconds. The volume of Cl_2 gas liberated at STP at anode (in ml) is (Cl = 35.5 u) (1F=96500 C mol^{-1})

Options :

1. ✖ 11.2

2. ✖ 22.4

3. ✔ 5.6

4. ✖ 33.6

Question Number : 87 Question Id : 89040115699 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The amount of substance deposited due to passage of 1F of electricity is called

Options :

1. ✖ Atomic weight

2. ✔ Equivalent weight

3. ✖ Electrochemical equivalent

4. ✖ Molecular weight

Question Number : 88 Question Id : 89040115700 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

What is the emf of the cell?

$Sn|Sn^{2+}\,(1M)||Ag^{+}\,(1M)|Ag$

[Given $E^{0}_{Sn^{2+}|Sn} = -0.14V$ *and* $E^{0}_{Ag^{+}|Ag} = +0.80\,V$]

Options :

1. ✖ 0.66 V

2. ✖ 0.80 V

3. ✖ 1.08 V

4. ✔ 0.94 V

Question Number : 89 Question Id : 89040115701 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

If the standard reduction potentials of A,B,C are respectively 0.68V, -2.54V and -0.50 V, then the order of their reducing power is

Options :

1. ✖ A>B>C

2. ✖ A>C>B

3. ✖ C>B>A

4. ✔ B>C>A

Question Number : 90 Question Id : 89040115702 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

With which of the following anions, Mg^{2+} and Ca^{2+} ions form salts responsible for permanent hardness of water?

Options :

1. ✔ Cl^-, SO_4^{2-}

2. ✖ Cl^-, NO_2^-

3. ✖ HCO_3^-, Cl^-

4. ✖ CO_3^{2-}, HCO_3^-

Question Number : 91 Question Id : 89040115703 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Exhausted permutit is regenerated by washing with

Options :

1. ✖ Dilute NaOH solution

2. ✔ Dilute NaCl solution

3. ✖ Dilute HCl solution

4. ✖ Dilute $AlCl_3$ solution

Question Number : 92 Question Id : 89040115704 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

27.2 mg of $CaSO_4$ and 2.4 mg of $MgSO_4$ are present in a 2 kg water sample.
What is the total hardness of water (in ppm) in terms of equivalents of $CaCO_3$?
(molecular weight of $CaSO_4$ = 136 & molecular weight of $MgSO_4$ = 120)

Options :

1. ✔ 11

2. ✖ 10

3. ✖ 20

4. ✖ 22

Question Number : 93 Question Id : 89040115705 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Statement I: The lower the pH greater is the corrosion

Statement II: Electrochemical Corrosion always occurs at the anodic area.

The correct answer is

Options :

1. ✔ Both statement – I and Statement – II are correct

2. ✖ Both statement – I and Statement – II are not correct

3. ✖ Statement – I is correct but statement – II is not correct

4. ✖ Statement – I is not correct but statement – II is correct

Question Number : 94 Question Id : 89040115706 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Rust is chemically

Options :

1. ✔ Hydrated Ferric Oxide

2. ✖ Hydrated Copper (II) Chloride

3. ✖ Hydrated Ferrous Sulphate

4. ✖ Hydrated Ferric Sulphate

Question Number : 95 Question Id : 89040115707 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The monomer of Teflon is X. The number of fluorine atoms in X is

Options :

1. ✖ 2

2. ✖ 3

3. ✔ 4

4. ✖ 1

Question Number : 96 Question Id : 89040115708 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Bakelite is an example of

Options :

1. ✖ Thermoplastic Polymer

2. ✖ Elastomer

3. ✖ Fibre

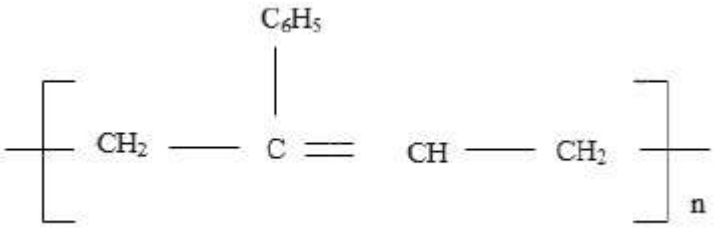
4. ✔ Thermosetting polymer

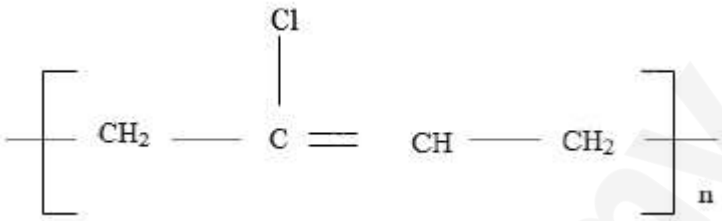
Question Number : 97 Question Id : 89040115709 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

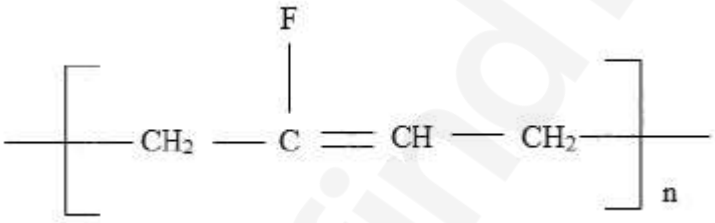
Correct Marks : 1 Wrong Marks : 0

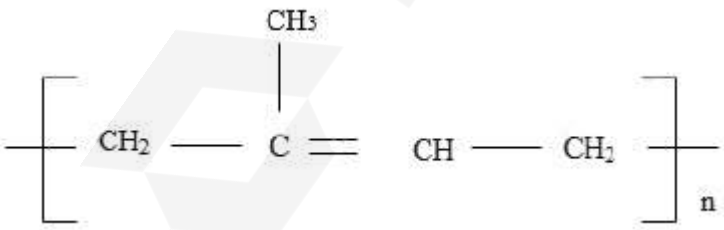
The correct structure of neoprene rubber is

Options :

1. ✖ 

2. ✔ 

3. ✖ 

4. ✖ 

Question Number : 98 Question Id : 89040115710 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following is NOT regarded as a primary fuel?

Options :

1. ✖ Natural gas

2. ✔ Coal gas

3. ✖ Lignite

4. ✖ Crude oil

Question Number : 99 Question Id : 89040115711 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

pH of acid rain water is generally in the range of

Options :

1. ✖ 1.0 - 3.0

2. ✔ 3.5 - 5.6

3. ✖ 5.9 - 6.9

4. ✖ 7.1 - 7.5

Question Number : 100 Question Id : 89040115712 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In _____ part of the atmosphere ozone layer is present.

Options :

1. ✖ Troposphere

2. ✖ Thermosphere

3. ✔ Stratosphere

4. ✖ Mesosphere

Mining Engineering

Section Id :	890401310
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	890401334
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 89040115713 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The mode of access to the deposit present in a hilly terrain is

Options :

1. ✖ Incline

2. ✖ Shaft

3. ✔ Adit

4. ✖ Decline

Question Number : 102 Question Id : 89040115714 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Bore hole survey means

Options :

1. ✖ Measurement of Depth of bore hole

2. ✖ Measurement of time taken to drill hole

3. ✔ Measurement of deviation of bore hole

4. ✖ Identification of properties of bore hole

Question Number : 103 Question Id : 89040115715 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The process of treating the holes with chemicals to reduce the friction to the passage of cement through rock mass during Cementation method of shaft skinning is

Options :

1. ✖ Silicatisation

2. ✔ Pre-Silicatisation

3. ✖ Sensitization

4. ✖ Grouting

Question Number : 104 Question Id : 89040115716 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The holes left in permanent lining at the curb level to avoid development of hydrostatic pressure behind the lining due to water in shaft sinking are known as

Options :

1. ✖ Product holes
2. ✔ Weep holes
3. ✖ Lining holes
4. ✖ Drain holes

Question Number : 105 Question Id : 89040115717 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The characteristic of an explosive which will give an idea about the storage of explosive under heat, humid and time of exposure

Options :

1. ✔ Stability
2. ✖ Sensitivity
3. ✖ Density
4. ✖ Resistance

Question Number : 106 Question Id : 89040115718 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The type of explosive used for solid blasting is

Options :

1. ✖ P1

2. ✖ P3

3. ✖ P4

4. ✔ P5

Question Number : 107 Question Id : 89040115719 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The prime charge in a detonator is

Options :

1. ✖ PETN

2. ✖ TNT

3. ✔ ASA

4. ✖ Ammonium Nitrate

Question Number : 108 Question Id : 89040115720 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Identify the correct sequence of blasting operations in Underground coal mines

Options :

1. ✔ Drilling , Charging, Stemming, Blasting, Mucking

2. ✖ Drilling, Charging, Mucking, Stemming, Blasting

3. ✖ Mucking, Drilling, Charging, Stemming, Blasting

4. ✖ Drilling, Stemming, Charging, Mucking , Blasting

Question Number : 109 Question Id : 89040115721 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The texture of rocks formed due to consolidation of magma nearer to the surface is

Options :

1. ✖ Course texture

2. ✖ Medium texture

3. ✔ Fine texture

4. ✖ Conglomerate

Question Number : 110 Question Id : 89040115722 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify the Correct sequence of formation of coal

Options :

1. ✖ Lignite → Peat → Bituminous → Anthracite

2. ✔ Peat → Lignite → Bituminous → Anthracite

3. ✖

Anthracite → Bituminous → Lignite → Peat

4. ✖ Bituminous → Anthracite → Lignite → Peat

Question Number : 111 Question Id : 89040115723 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The vertical displacement of seam in a normal fault is known as

Options :

1. ✔ Throw

2. ✖ Want

3. ✖ Hade

4. ✖ Inclination

Question Number : 112 Question Id : 89040115724 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Which of the following is an example of sedimentary rock

Options :

1. ✖ Granite

2. ✖ Basalt

3. ✔ Sandstone

4. ✖ Schist

Question Number : 113 Question Id : 89040115725 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The point where an earthquake originates is known as

Options :

1. ✖ Epicentre

2. ✖ Iso-seismal

3. ✖ Co-seismal

4. ✔ Focus

Question Number : 114 Question Id : 89040115726 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which hypothesis explains the origin of the Earth ?

Options :

1. ✔ Nebular Hypothesis

2. ✖ Plate Tectonic Hypothesis

3. ✖ Big Bang Hypothesis

4. ✖ Null Hypothesis

Question Number : 115 Question Id : 89040115727 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The process of "Erosion" includes

Options :

1. ✖ Deflation and Abrasion

2. ✖ Disintegration and Decomposition

3. ✖ Abrasion and disintegration

4. ✔ Disintegration and Transportation

Question Number : 116 Question Id : 89040115728 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify the minerals based the decreasing order of Moh's Scale of Hardness

Options :

1. ✔ Topaz > Quartz > Orthoclase > Fluorite

2. ✖ Quartz > Fluorite > Topaz > Orthoclase

3. ✖ Fluorite > Quartz > Orthoclase > Topaz

4. ✖ Topaz > Orthoclase > Fluorite > Quartz

Question Number : 117 Question Id : 89040115729 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The type of fold in which younger rock formation is present outside and older rock formation is present inside the fold is known as

Options :

1. ✖ Syncline

2. ✔ Anticline

3. ✖ Chevron fold

4. ✖ Recumbent fold

Question Number : 118 Question Id : 89040115730 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which metamorphic rock is formed by the recrystallization of Limestone ?

Options :

1. ✖ Slate

2. ✖ Schist

3. ✔ Marble

4. ✖ Gneiss

Question Number : 119 Question Id : 89040115731 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a mine working the roof fall which takes place soon after withdrawal of supports is called

Options :

1. ✔ Local fall

2. ✖

Main fall

3. ✖ Air blast

4. ✖ Rock burst

Question Number : 120 Question Id : 89040115732 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The sudden release of elastic strain energy stored in pillars result in violent burst of coal pillars is called

Options :

1. ✖ Air blast

2. ✖ Rock burst

3. ✔ Coal bump

4. ✖ Premature collapse

Question Number : 121 Question Id : 89040115733 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The underground road way driven through stone to connect two or more coal seams is known as

Options :

1. ✖ Tunnel

2. ✖ Gallery

3. ✖ Cross-cut

4. ✔

Cross measure drift

Question Number : 122 Question Id : 89040115734 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The shape of the pillar in flat and moderately inclined seams for adoption of shuttle car and locomotive is

Options :

1. ✔ Rhombus

2. ✖ Circular

3. ✖ Square

4. ✖ Rectangle

Question Number : 123 Question Id : 89040115735 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The method mining suitable for the extraction of coal seams with dirt bands is

Options :

1. ✖ Board and Pillar method

2. ✔ Longwall method

3. ✖ Slicing method

4. ✖ Hydraulic Mining

Question Number : 124 Question Id : 89040115736 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

In Board and Pillar method of mining with Hydraulic stowing, the preferred method of extraction of pillars is

Options :

1. ✔ Step diagonal

2. ✖ Vertical line

3. ✖ Diagonal line

4. ✖ Straight line

Question Number : 125 Question Id : 89040115737 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The centre-to-centre size of coal pillars developed in Board and Pillar mining is 40 m x 40 m working at 280 m depth has 4.0 m wide galleries. What area of roof does a pillar support according to tributary area theory?

Options :

1. ✖ 4480 sq.m

2. ✖ 1936 sq.m

3. ✔ 1600 sq.m

4. ✖ 1296 sq.m

Question Number : 126 Question Id : 89040115738 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

In sand stowing in-correct Hydraulic profile leads to

Options :

1. ✔ Formation of cavities in the flow

2. ✖ Damage of pipes

3. ✖ Jamming of pipes

4. ✖ Setup pulsation

Question Number : 127 Question Id : 89040115739 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The width of the heading in Board and Pillar method of working depends on

Options :

1. ✖ Depth of working

2. ✖ Size of pillars

3. ✔ Face machinery used

4. ✖ Ventilation required

Question Number : 128 Question Id : 89040115740 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A coal heading is of 4 m wide and 2.5 m height has an advance of 1 m per cycle. The amount of explosive used is 5 kg per blast. Taking specific gravity of coal as 1.2 t/m^3. The powder factor is

Options :

1. ✖ 1.55 te/kg

2. ✔ 2.40 te/kg

3. ✖ 2.99 te/kg

4. ✖ 3.32 te/kg

Question Number : 129 Question Id : 89040115741 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In metal mining most of the development is always carried out in

Options :

1. ✖ Hanging wall

2. ✔ Foot wall

3. ✖ Across the deposit

4. ✖ Away from deposit

Question Number : 130 Question Id : 89040115742 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

During development of Metalliferous deposits, the pillar left in its in-situ condition to protect upper level is known as

Options :

1. ✔ Crown pillar

2. ✖

Sill pillar

3. ✖ Rib pillar

4. ✖ Barrier

Question Number : 131 Question Id : 89040115743 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The method of stoping **NOT suitable** if the ore body is subjected to Spontaneous heating is

Options :

1. ✖ Sub level Caving

2. ✖ Cut and fill method

3. ✔ Shrinkage Stoping

4. ✖ Room and Pillar method

Question Number : 132 Question Id : 89040115744 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

During development of metalliferous deposits, the method of connecting two levels from upper level to lower level is known as

Options :

1. ✔ Winze

2. ✖ Raise

3. ✖ Cross cut

4. ✖ Cross measure drift

Question Number : 133 Question Id : 89040115745 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Identify the method of stoping used under the following conditions of ore body

Type of Ore body	-	Massive
Strength of Ore	-	Week
Strength of Walls	-	Week or Strong

Options :

1. ✖ Sublevel Stoping method

2. ✖ Shrinkage Stoping method

3. ✖ Cut and fill method

4. ✔ Block Caving

Question Number : 134 Question Id : 89040115746 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The method of stoping used for the extraction of Narrow vein deposits

Options :

1. ✖ Sub level caving

2. ✔ Resuing

3. ✖ Room and Pillar method

4. ✖ Cut and fill method

Question Number : 135 Question Id : 89040115747 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Rill stoping method is also known as

Options :

1. ✔ Over hand stoping

2. ✖ Under hand stoping

3. ✖ Brest stoping

4. ✖ Room and Pillar stoping

Question Number : 136 Question Id : 89040115748 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Identify the method of stoping preferred under the following conditions of the ore body

Type of Ore body	-	Thin
Dip	-	Flat
Strength of Ore	-	Strong
Strength of walls	-	Strong

Options :

1. ✖ Sublevel stoping

2. ✖ Sub level Caving

3. ✔ Room and pillar

4. ✖ Top slicing

Question Number : 137 Question Id : 89040115749 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Sub-level stoping method belongs to

Options :

1. ✖ Heavily supported class

2. ✖ Artificially supported class

3. ✖ Caving type

4. ✔ Open stoping type

Question Number : 138 Question Id : 89040115750 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The roadway driven to interconnect the shaft and ore body is known as

Options :

1. ✖ Cross measure drift

2. ✔ Cross-cut

3. ✖ Tunnel

4. ✖ Level roadway

Question Number : 139 Question Id : 89040115751 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Two mine haulage roadways A and B are having similar cross-sectional areas, surface characteristics, but differ in lengths. The length road way A is 100 m and that of road way B is 200 m.

The ratio of their resistances $R_A : R_B$ is

Options :

1. ✔ 1: 2

2. ✖ 1: 4

3. ✖ 1: 3

4. ✖ 1: 9

Question Number : 140 Question Id : 89040115752 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Three road ways A, B and C are connected in parallel and are having same cross-sectional area and surface characteristics. But length of three roadways are 100 m , 200m and 300 m respectively.

The ratio of Quantity of air flowing through the roadways $Q_A : Q_B : Q_C$ is

Options :

1. ✖ 1: 2: 3

2. ✖ 1: $\sqrt{2}$: $\sqrt{3}$

3. ✖ $1:\frac{1}{2}:\frac{1}{3}$

4. ✔ $1:\frac{1}{\sqrt{2}}:\frac{1}{\sqrt{3}}$

Question Number : 141 Question Id : 89040115753 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify the type of centrifugal fan having non-over loading power characteristics

Options :

1. ✖ Forward bladed centrifugal fan

2. ✖ Radial bladed centrifugal fan

3. ✔ Backward bladed centrifugal fan

4. ✖ Axial flow fan

Question Number : 142 Question Id : 89040115754 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The composition of Black damp is

Options :

1. ✔ $CO_2 + N_2$

2. ✖ $CO_2 + H_2$

3. ✖ $CO_2 + CO$

4. ✖ $CO_2 + CH_4$

Question Number : 143 Question Id : 89040115755 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Abnormal change in barometric pressure in mine workings indicates

Options :

1. ✖ Spontaneous heating in mines

2. ✖ Accumulation of gasses in workings

3. ✔ Leakage of gasses from goaf areas towards workings

4. ✖ Increase in overall resistance of the mine

Question Number : 144 Question Id : 89040115756 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

If the speed of a centrifugal fan is increased by 2 times. Then the corresponding power consumption of fan

Options :

1. ✖ Increases by 2 times

2. ✖ Increases by 4 times

3. ✔ Increases by 8 times

4. ✖ Increases by 9 times

Question Number : 145 Question Id : 89040115757 Question Type : MCQ Option Shuffling : No

Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Given the following information related to Natural Ventilation Pressure.

T_u - Absolute temperature of upcast shaft.

T_d – Absolute temperature of downcast shaft

D – Depth of the shaft

The formula for motive column is

Options :

1. ✔ $\frac{T_u - T_d}{T_u}$ x D

2. ✖ $\frac{T_u + T_d}{T_u}$ x D

3. ✖ $\frac{T_u - T_d}{T_d}$ x D

4. ✖ $\frac{T_u + T_d}{T_d}$ x D

Question Number : 146 Question Id : 89040115758 Question Type : MCQ Option Shuffling : No
Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

MSA methanometer works based on the principle of

Options :

1. ✖ Formation of gas cap

2. ✔ Wheatstone bridge

3. ✖ Infra-red radiation

4. ✖ Optical Properties

Question Number : 147 Question Id : 89040115759 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which of the following fire extinguisher is not used for quenching of fires involving electrical equipment

Options :

1. ✖ CTC Fire extinguisher

2. ✖ CO_2 Type extinguisher

3. ✖ BCF Fire extinguisher

4. ✔ Foam type extinguisher

Question Number : 148 Question Id : 89040115760 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The value of CO / O_2 deficiency ratio 2% indicates

Options :

1. ✖ Normal condition

2. ✖ Existence of spontaneous heating

3. ✔ Heating in advance stage

4. ✖ Active fire

Question Number : 149 Question Id : 89040115761 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which one of the following Mine explosions associated with backlash ?

Options :

1. ✔ Fire damp explosion

2. ✖ Coal dust explosion

3. ✖ Spontaneous heating of coal

4. ✖ Black damp explosion

Question Number : 150 Question Id : 89040115762 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The optimum or stochiometric Methane -air mixture at which violent fire damp explosion takes place is

Options :

1. ✖ 5%

2. ✔ 9.5 %

3. ✖ 12%

4. ✖ 15 %

Question Number : 151 Question Id : 89040115763 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

What is the commonly used material for stone dusting in mining operation?

Options :

1. ✔ Limestone

2. ✖ Granite

3. ✖ Sandstone

4. ✖ Marble

Question Number : 152 Question Id : 89040115764 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The apparatus used to administer pure oxygen to an unconscious persons or persons effected by noxious gasses is

Options :

1. ✖ Smoke helmet

2. ✖ SCBA

3. ✖ Self-Rescuer

4. ✔ Reviving apparatus

Question Number : 153 Question Id : 89040115765 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The most important constituents in Gas mask is

Options :

1. ✖ Charcoal

2. ✖ Silica gel

3. ✖ Caustic soda

4. ✔ Hopcolite

Question Number : 154 Question Id : 89040115766 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The disease caused due to inhalation of Iron dust is

Options :

1. ✖ Silicosis

2. ✔ Siderosis

3. ✖ Asbestosis

4. ✖ Ancylostomiasis

Question Number : 155 Question Id : 89040115767 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The principle of working of Konimeter dust sampler is

Options :

1. ✖ Thermal precipitation

2. ✖ Gravity

3. ✔ Inertia precipitation

4. ✖ Optical method

Question Number : 156 Question Id : 89040115768 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The process of inducing artificial respiration in a person who is unconscious and whose rate of breathing become considerably feeble is

Options :

1. ✖ Rescue operation with SCBA

2. ✖ Reviving operation

3. ✔ Resuscitation

4. ✖ Recovery operation

Question Number : 157 Question Id : 89040115769 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In an area to be surveyed the line which covers entire area to be surveyed and has to be measured very accurately is

Options :

1. ✔ Base line

2. ✖ Off sets

3. ✖ Check lines

4. ✖ Tie lines

Question Number : 158 Question Id : 89040115770 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The area of plan is 10 cm^2 drawn to a scale of 1 cm = 10m. The area measured on the ground is

Options :

1. ✖ 200 m^2

2. ✖ 2000 m^2

3. ✖ 100 m^2

4. ✔ 1000 m^2

Question Number : 159 Question Id : 89040115771 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Given scale on a map is 1 cm = 20m then its Representative Factor (RF) is

Options :

1. ✖ 1: 1000

2. ✖ 1: 1500

3. ✔ 1: 2000

4. ✖ 1: 2500

Question Number : 160 Question Id : 89040115772 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In Tachometry value of additive constant will become zero with the addition of

Options :

1. ✖ Objective glass

2. ✔ Analytic lens

3. ✖ Focusing glass

4. ✖ Stadia diaphragm

Question Number : 161 Question Id : 89040115773 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The WCB of a line is 236^0 then its QB is

Options :

1. ✖ $N56^0 E$

2. ✖ $S\ 56^0 E$

3. ✔ $S\ 56^0 W$

4. ✖ $N\ 56^0 W$

Question Number : 162 Question Id : 89040115774 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The QB of a line is $S\ 30^0\ 20' E$ then its WCB is

Options :

1. ✔ $149^0\ 40'$

2. ✖ $30^0\ 20'$

3. ✖

$329^0\ 40'$

4. ✖ $210^0\ 20'$

Question Number : 163 Question Id : 89040115775 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The bearing of a line is $48^0\ 20'\ 30''$. The declination of the location is $2^0\ 30'$ E.

The direction of true north is

Options :

1. ✖ $45^0\ 50'\ 30''$

2. ✔ $50^0\ 50'\ 30''$

3. ✖ $45^0\ 50'\ 20''$

4. ✖ $50^0\ 50'\ 20''$

Question Number : 164 Question Id : 89040115776 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

A closed traverse of sides ABCDEF. The sum of interior angles of the traverse is

Options :

1. ✖ 630^0

2. ✖ 540^0

3. ✔ 720^0

4. ✖ 450^0

Question Number : 165 Question Id : 89040115777 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The levelling method in which correction for curvature and refraction can be eliminated is

Options :

1. ✖ Simple levelling

2. ✖ Compound Levelling

3. ✖ Differential levelling

4. ✔ Reciprocal Levelling

Question Number : 166 Question Id : 89040115778 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The method of setting out curve in underground road ways is

Options :

1. ✖ Chord and off set method

2. ✔ Chord and angle method

3. ✖ Tangent and off set method

4. ✖ Two theodolite method

Question Number : 167 Question Id : 89040115779 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The wire ropes which offers better wearing surface and more resistance to bending fatigue is

Options :

1. ✔ Lang's Lay

2. ✖ Ordinary lay

3. ✖ Left hand Lay

4. ✖ Right hand Lay

Question Number : 168 Question Id : 89040115780 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The type of wire ropes used as Guide ropes in winding is

Options :

1. ✖ Stranded rope with FC

2. ✔ Non stranded rope

3. ✖ Stranded rope with steel wire core

4. ✖ IWRC

Question Number : 169 Question Id : 89040115781 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The method of joining of two wire ropes permanently without using special fittings or attachments is known as

Options :

1. ✖ Capping

2. ✖ Recapping

3. ✔ Splicing

4. ✖ Socketing

Question Number : 170 Question Id : 89040115782 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

How many times winding rope has to be recapped through out its life as per regulation ?

Options :

1. ✖ 5 times

2. ✔ 6 times

3. ✖ 7 times

4. ✖ 8 times

Question Number : 171 Question Id : 89040115783 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The torques on the winding drum due to loaded and empty cage can be balanced as far as practicable by

Options :

1. ✔ Balancing rope

2. ✖ Use of suitable drum

3. ✖ Changing the load on two cages

4. ✖ Controlling the speed

Question Number : 172 Question Id : 89040115784 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In drum winding the shaft fitting used for smooth transfer of load between the cages and winding ropes during loading and unloading operation is

Options :

1. ✖ Guides

2. ✖ Lilly controller

3. ✖ Safety hook

4. ✔ Keps

Question Number : 173 Question Id : 89040115785 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The type of haulage system used in case of undulating roadways

Options :

1. ✖ Direct rope haulage

2. ✖ Endless rope haulage

3. ✔ Main and Tail rope haulage

4. ✖ Gravity rope haulage

Question Number : 174 Question Id : 89040115786 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Identify the safety device used in endless rope haulage system

Options :

1. ✖ Back stay

2. ✖ Small man clip

3. ✖ Cam clip

4. ✔ Monkey catch

Question Number : 175 Question Id : 89040115787 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The type of locomotive containing exhaust conditioner box along with flame trap arrangement is

Options :

1. ✔ Diesel locomotive

2. ✖ Battery locomotive

3. ✖ Trolly wire locomotive

4. ✖ Steam locomotive

Question Number : 176 Question Id : 89040115788 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a turbine pump the direction of End Thrust is

Options :

1. ✖ In the middle of the pump

2. ✖ From suction end towards delivery end

3. ✔ From delivery end towards Suction end

4. ✖ Any where on the shaft of Turbine pump

Question Number : 177 Question Id : 89040115789 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The reverse direction rotation of Belt conveyor can be prevented by

Options :

1. ✔ Hold back

2. ✖ Stop back

3. ✖ Back stay

4. ✖ Pull chord

Question Number : 178 Question Id : 89040115790 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In Longwall face machinery Shearer is mounted on

Options :

1. ✖ Skid

2. ✔ AFC

3. ✖ Hydraulic rams

4. ✖ Double acting piston

Question Number : 179 Question Id : 89040115791 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The type of Subsidence in which maximum subsidence occurs over an area is known as

Options :

1. ✖ Critical width of extraction

2. ✖ Sub Critical width of extraction

3. ✔ Super Critical width of extraction

4. ✖ Narrow width of extraction

Question Number : 180 Question Id : 89040115792 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In opencast blasting the purpose of sub-grade drilling is

Options :

1. ✔

To avoid the formation of toe

2. ✖ To reduce ground vibrations

3. ✖ To reduce consumption of explosive

4. ✖ To improve over all blasting performance

Question Number : 181 Question Id : 89040115793 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Which one of the following is NOT a Controlled blasting technique used in Opencast mines ?

Options :

1. ✖ Pre splitting

2. ✖ Deck charging

3. ✖ Cushion blasting

4. ✔ Cast blasting

Question Number : 182 Question Id : 89040115794 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

In an opencast bench two geologically disturbed planes intersect each other.

The type of bench failures likely to takes place

Options :

1. ✖ Circular failure

2. ✔ Wedge failure

3. ✖ Planar failure

4. ✖ Toppling failure

Question Number : 183 Question Id : 89040115795 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The strain measuring device used to measure the convergence between the roof and floor at a remote location of a mine is

Options :

1. ✖ Tell tale bore hole extensometer

2. ✖ Magnetic ring multipoint bore hole extensometer

3. ✔ Remote convergence recorder

4. ✖ Load cells

Question Number : 184 Question Id : 89040115796 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In opencast mine planning the report which assess the periodical impact of mining over environment and suggest corresponding control measures is

Options :

1. ✔ EIA

2. ✖ EMP

3. ✖ DPR

4. ✖ Feasibility Report

Question Number : 185 Question Id : 89040115797 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The value of Shear stress along principal plane of a failure surface is

Options :

1. ✖ Minimum

2. ✖ Maximum

3. ✖ Neither maximum nor minimum

4. ✔ Zero

Question Number : 186 Question Id : 89040115798 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The Indirect method of determination of Tensile strength of a rock specimen is

Options :

1. ✖ Confined Compressive strength test

2. ✖ Un-Confined compressive strength test

3. ✔ Brazilian test

4. ✖

Question Number : 187 Question Id : 89040115799 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

Which one of the following term NOT related to opencast mining ?

Options :

1. ✖ Boxcut

2. ✖ Highwall

3. ✖ Crest

4. ✔ Winze

Question Number : 188 Question Id : 89040115800 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

The relation between porosity (n) and void ratio (e) of a rock specimen is

Options :

1. ✔ $e = \frac{n}{1-n}$

2. ✖ $e = \frac{n}{1+n}$

3. ✖ $e = \frac{1-n}{n}$

4. ✖ $e = \frac{1+n}{n}$

Question Number : 189 Question Id : 89040115801 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The following are the various parameters of the Shovel

Capacity of the bucket – 20 m^3

Fill factor (f) = 0.8

Swell factor (s) = 0.5

Cycle time (t) = 60 sec

The Volume of the material carried by the Shovel per hour is

Options :

1. ✖ 300 m^3

2. ✖ 388 m^3

3. ✖ 400 m^3

4. ✔ 480 m^3

Question Number : 190 Question Id : 89040115802 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The width of the haul road in an opencast mine depends on

Options :

1. ✖ Length of the dumper

2. ✔ Width of the largest vehicle moving along haul road

3. ✖ Number of dumpers moving

4. ✖ Targeted production

Question Number : 191 Question Id : 89040115803 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The place of Drinking water facility on the surface of mine should be away from urinals, latrine and washing places at least at a distance of

Options :

1. ✔ 6m

2. ✖ 5 m

3. ✖ 7 m

4. ✖ 4 m

Question Number : 192 Question Id : 89040115804 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Quorum of a Committee meeting as per Mines Act-1952 is

Options :

1. ✖ 3 Members including Chairmen

2. ✖ 3 Members excluding Chairmen

3. ✔ 4 Members including Chairmen

4. ✖ 4 Members excluding Chairmen

Question Number : 193 Question Id : 89040115805 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The meaning of term 'misfire' as per regulations is

Options :

1. ✖ Failure of ignition of explosive

2. ✖ Improper ignition of explosive

3. ✔ Failure to explode entire charge of Explosive

4. ✖ Failure to explode part of an explosive

Question Number : 194 Question Id : 89040115806 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The value of Bending factor of rope used in winding as per CMR-2017 is

Options :

1. ✔ 100

2. ✖ 120

3. ✖ 80

4. ✖ 150

Question Number : 195 Question Id : 89040115807 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The process of setting goals and establishing guide lines to fulfil them is called

Options :

1. ✔

Planning

2. ✖ Supervising

3. ✖ Evaluating

4. ✖ Managing

Question Number : 196 Question Id : 89040115808 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In CPM method of network analysis the Critical activities are associated with

Options :

1. ✖ Maximum Float

2. ✖ Minimum Float

3. ✖ Negative Float

4. ✔ Zero Float

Question Number : 197 Question Id : 89040115809 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

In a PERT network for an activity Pessimistic, Most likely, and Optimistic times are 8 days, 6 days and 4 days respectively. The expected duration of the activity is __

Options :

1. ✔ 6 days

2. ✖ 2 days

3. ✖ 8 days

4. ✖ 9 days

Question Number : 198 Question Id : 89040115810 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

The time by which activity completion time can be delayed without affecting start of succeeding activity

Options :

1. ✖ Duration

2. ✔ Free float

3. ✖ Total float

4. ✖ Interfering float

Question Number : 199 Question Id : 89040115811 Question Type : MCQ Option Shuffling : No Display Question Number : Yes

Correct Marks : 1 Wrong Marks : 0

Which one of the following is a principle of TQM ?

Options :

1. ✖ Product-Centred system

2. ✖ Intermittent improvement

3. ✔ Customer-focus

4. ✖ Decision made by top executives

Question Number : 200 Question Id : 89040115812 Question Type : MCQ Option Shuffling : No Display Question Number : Yes
Correct Marks : 1 Wrong Marks : 0

For a person working in Opencast mine the rate at which leave with wages calculated is

Options :

1. ✖ One day for every 15 days of work performed by him

2. ✔ One day for every 20 days of work performed by him

3. ✖ One day for every 10 days of work performed by him

4. ✖ One day for every 30 days of work performed by him.