Question Paper Preview

Question Paper Name: Mining Engineering
Subject Name: Mining Engineering

Mathematics

Number of Questions:	50
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 1 Question Id : 6780946004 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the traces of A and B are 20 and -8 then the trace of (A+B) is ___

Options :

1. 12
2. -12
3. 28
4. -28

Question Number : 2 Question Id : 6780946005 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A=\begin{bmatrix} x & 1 \\ 1 & 0 \end{bmatrix}$ is an involutory matrix then x=

Options :

1. 0
2. –2
3. –1
4. 2

Question Number : 3 Question Id : 6780946006 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The determinant of $\begin{bmatrix} \log e & \log e^2 & \log e^3 \\ \log e^2 & \log e^3 & \log e^4 \\ \log e^3 & \log e^4 & \log e^5 \end{bmatrix}$ is ___

Options :

1. 0
2. 1
3. $4\log e$
4. $5\log e$

Question Number : 4 Question Id : 6780946007 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $A=\begin{bmatrix} 1 & 1 & 0 \\ 2 & 1 & 3 \\ 0 & 1 & 2 \end{bmatrix}$ then $\det(adjA) =$ ___

Options :

1. $\det A$
2. $\det A^2$
3. $-\det A$
4. $(\det A)^2$

Question Number : 5 Question Id : 6780946008 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If A, B are two matrices and $AB=B$, $BA=A$ then $A^2+B^2=$

Options :

1. $A+B$
2. $A-B$
3. AB
4. 0

Question Number : 6 Question Id : 6780946009 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Options :

1. 0
2. 2
3. 3
4. 5

Question Number : 7 Question Id : 6780946010 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\frac{3x}{(x-a)(x-b)}=\frac{2}{x-a}+\frac{1}{x-b}$ then $a:b=$ ___

Options :

1. $-2:1$
2. $2:1$
3. $1:2$
4. $3:1$

Question Number : 8 Question Id : 6780946011 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\tan 855°=$ ____

Options :

1. 1
2. $\frac{1}{\sqrt{2}}$
3. -1
4. $-\frac{1}{\sqrt{2}}$

Question Number : 9 Question Id : 6780946012 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\tan\alpha=\frac{m}{m+1}$ and $\tan\beta=\frac{1}{2m+1}$ then $\tan(\alpha+\beta)=$ ____

Options :

1. -1

2. 0

3. 1

4. 2

Question Number : 10 Question Id : 6780946013 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $6\sin 20° - 8\sin^3 20° =$

Options :

1. 2

2. $\frac{1}{\sqrt{2}}$

3. $\sqrt{3}$

4. $\frac{1}{\sqrt{3}}$

Question Number : 11 Question Id : 6780946014 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $3\sin\theta + 4\cos\theta = 5$ then the value of $4\sin\theta - 3\cos\theta =$

Options :

1. 0

2. -1

3. 1

4. 2

Question Number : 12 Question Id : 6780946015 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The sine function with period 3 is

Options :

1. $sin\frac{2\pi x}{3}$

2. $sin\frac{\pi x}{3}$

3. $sin\ 3\pi x$

4. $sin\frac{3\pi x}{2}$

Question Number : 13 Question Id : 6780946016 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum value of $3\sin^2 x+5\cos^2 x$ is ____

Options :

1. 8

2. 3

3. 5

4. 34

Question Number : 14 Question Id : 6780946017 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The equation $\sqrt{3}\sin x+\cos x=4$ has ____

Options :

1. Only one solution

2. two solutions

3. Infinite solutions

4. no solution

Question Number : 15 Question Id : 6780946018 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The solution of $\mathrm{Cos}^{-1}\left(\sqrt{3}x\right)+\mathrm{Cos}^{-1}x=\frac{\pi}{2}$ is ___

Options :

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

2. $\frac{1}{5}$

3. $-\frac{1}{2}$

4. $-\frac{1}{5}$

Question Number : 16 Question Id : 6780946019 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The value of $\sin\theta+\sin(\theta+120°)-\sin(120°-\theta)=$ _____

Options :

1. 0
2. $\sin\theta$
3. 1
4. $-\sin\theta$

Question Number : 17 Question Id : 6780946020 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The principal solution of $3\mathrm{Cosec}A=4\mathrm{Sin}A$ is ____

Options :

1. $\frac{\pi}{4}$
2. $\pm\frac{\pi}{3}$
3. $\pm\frac{\pi}{6}$
4. $\pm 2\pi$

Question Number : 18 Question Id : 6780946021 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\left|z^2-1\right|=\left|z\right|^2+1.$ then z lies in ____

Options :

1. The real axis
2. a circle
3. The imaginary axis
4. a parabola

Question Number : 19 Question Id : 6780946022 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $\left(\frac{1+i}{1-i}\right)^3-\left(\frac{1-i}{1+i}\right)^3=a+ib$, then *a* an *b* are ____

Options :

1. 1,1
2. 2,-2
3. 0,-2
4. 0,-1

Question Number : 20 Question Id : 6780946023 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the line $y=2x+c$ is a tangent to $x^2+y^2=5$ then the value of *c* is ____

Options :

1. 2
2. 3
3. 4
4. 5

Question Number : 21 Question Id : 6780946024 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The vertex of the parabola $x^2+8x+12y+4=0$ is

Options :

1. $(-4,1)$
2. $(4,-1)$
3. $(-4,-1)$
4. $(4,1)$

Question Number : 22 Question Id : 6780946025 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The number of tangents to the ellipse $\frac{x^2}{4}+\frac{y^2}{2}=1$ through (2,1) is ____

Options :

1. 0

2. 1

3. 2

4. 3

Question Number : 23 Question Id : 6780946026 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the latus rectum of the hyperbola $x^2-4y^2=4$ is ____

Options :

1. 2

2. 1

3. 4

4. 3

Question Number : 24 Question Id : 6780946027 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of the diameter of the circle $x^2+y^2-6x-8y=0$ is _____

Options :

1. 10

2. 15

3. 5

4. 20

Question Number : 25 Question Id : 6780946028 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the line $2y=5x+k$ touches the parabola $y^2=6x$ then k= ___

Options :

1. $\frac{2}{3}$

2. $\frac{4}{3}$

3. $\frac{3}{5}$

4. $\frac{6}{5}$

Question Number : 26 Question Id : 6780946029 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\lim_{x\to 2+} \frac{x|x-2|}{x-2} = \_\_\_\_\_$$

Options :

1. 1
2. −1
3. 2
4. −2

Question Number : 27 Question Id : 6780946030 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $f(x) = (1+x)^{\frac{2}{x}}$ is continuous at $x = 0$ then $f(0) = \_\_\_$

Options :

1. e
2. e^2
3. e^3
4. e^4

Question Number : 28 Question Id : 6780946031 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $x = a\sec\theta, y = b\tan\theta$ then $\frac{dy}{dx} = \_\_\_$

Options :

1. $\frac{b}{a}\sec\theta$
2. $\frac{b}{a}\operatorname{cosec}\theta$
3. $\frac{a}{b}\sec\theta$
4. $\frac{a}{b}\operatorname{cosec}\theta$

Question Number : 29 Question Id : 6780946032 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

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

Options :

1. $\frac{\log x}{(1+\log x)^2}$

2. $\frac{\log x}{(1-\log x)^2}$

3. $\frac{-\log x}{(1+\log x)^2}$

4. $\frac{-1}{(1+\log x)^2}$

Question Number : 30 Question Id : 6780946033 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $y = \sin^{-1}\left(\frac{x}{\sqrt{1+x^2}}\right)$ then $\frac{dy}{dx} =$ ____

Options :

1. $-\frac{1}{1+x^2}$

2. $\frac{1}{1+x^2}$

3. $\frac{2}{1+x^2}$

4. $-\frac{2}{1+x^2}$

Question Number : 31 Question Id : 6780946034 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The slope of the normal to the curve $x = a\sec\theta, y = a\tan\theta$ at $\theta = \frac{\pi}{6}$ is ____

Options :

1. 2
2. 0
3. $-\frac{1}{2}$
4. 1

Question Number : 32 Question Id : 6780946035 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The rate of change of area of a circle with respect to radius when r=5cm is

Options :

1. 2π sq.cm/sec
2. 10π sq.cm/sec
3. 100π sq.cm/sec
4. 20π sq.cm/sec

Question Number : 33 Question Id : 6780946036 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following function has maxima or minima?

Options :

1. e^x
2. $\log x$
3. x^3+x^2+x+1
4. $\sin x$

Question Number : 34 Question Id : 6780946037 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the increase in the side of a square is 2% then the approximate percentage increase in the area of the square is _____

Options :

1. 2
2. 4
3. 6
4. 8

Question Number : 35 Question Id : 6780946038 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For the function $f(x)=\log(x^2+y^2)$, which of the following is true?

Options :

1. $f_x+f_y=0$
2. $f_{xx}+f_{yy}=0$
3. $f_x-f_y=0$
4. $f_{xx}-f_{yy}=0$

Question Number : 36 Question Id : 6780946039 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\int \text{cosec}^5\theta\cot\theta d\theta =$ _____

Options :

1. $\frac{\cot^2\theta}{2}$
2. $\frac{-\text{cosec}^5\theta}{5}$
3. $\frac{\text{cosec}^6\theta}{6}$
4. $\frac{-\text{cosec}^6\theta}{6}$

Question Number : 37 Question Id : 6780946040 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\int_2^3 \frac{dx}{x^2-x} =$ ____

Options :

1. $\log\frac{2}{3}$
2. $\log\frac{4}{3}$

3. $\log\frac{8}{3}$

4. $\log\frac{1}{4}$

Question Number : 38 Question Id : 6780946041 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $a<0<b$ then $\int_a^b \frac{|x|}{x}dx =$ _____

Options :

1. $b-a$

2. $a-b$

3. $a+b$

4. 0

Question Number : 39 Question Id : 6780946042 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\int_0^1 x\tan^{-1}x dx =$ _____

Options :

1. $\frac{\pi}{4}-\frac{1}{2}$

2. $\frac{\pi}{8}-\frac{1}{2}$

3. $\frac{\pi}{4}+\frac{1}{2}$

4. $\frac{\pi}{8}+\frac{1}{2}$

Question Number : 40 Question Id : 6780946043 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$\lim_{n\to\infty}\sum_{r=1}^{n}\frac{1}{n}e^{\frac{r}{n}} =$ _____

Options :

1. e

2. $(1+e)$

3. $(1-e)$

4. $(e-1)$

Question Number : 41 Question Id : 6780946044 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$$\int_0^{\pi/4} \sec^6 x dx = \_\_\_\_\_$$

Options :

1. $\frac{8}{3}$

2. $\frac{28}{15}$

3. $-\frac{28}{15}$

4. $\frac{4}{5}$

Question Number : 42 Question Id : 6780946045 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The area bounded by the curve $y = \log x$, x-axis and the straight line $x - e = 0$ is _____square units

Options :

1. e

2. $(e-1)$

3. 0

4. $(1-e)$

Question Number : 43 Question Id : 6780946046 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The volume of the solid generated by rotating one arch of the curve $y = Sin3x$ about the x-axis is----

Options :

1. π^2

2. $\frac{\pi^2}{2}$

3. $\frac{\pi^2}{4}$

4. $\frac{\pi^2}{6}$

Question Number : 44 Question Id : 6780946047 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

$y = cx - c^2$ is the general solution of the differential equation

Options :

1. $\left(\frac{dy}{dx}\right)^2 - x\left(\frac{dy}{dx}\right) + y = 0$

2. $\frac{d^2y}{dx^2} = 0$

3. $\frac{dy}{dx} = c$

4. $\left(\frac{dy}{dx}\right)^2 + x\left(\frac{dy}{dx}\right) + y = 0$

Question Number : 45 Question Id : 6780946048 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of the differential equation $\frac{dy}{dx} + \frac{y}{3} = 1$ is

Options :

1. $y = 3 + ce^{\frac{x}{3}}$

2. $y = 3 + ce^{-\frac{x}{3}}$

3. $3y = c + e^{\frac{x}{3}}$

4. $3y = c + e^{-\frac{x}{3}}$

Question Number : 46 Question Id : 6780946049 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The differential equation corresponding to the family of curves $y = ae^{bx}$, where a and b are arbitrary constants, is ____

Options :

1. $\frac{d^2y}{dx^2} = y\frac{dy}{dx}$

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

3. $y\frac{d^2y}{dx^2} = \left(\frac{dy}{dx}\right)^2$

4. $\frac{dy}{dx} - y^2 = 0$

Question Number : 47 Question Id : 6780946050 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An integrating factor of the differential equation $(x^2y + y + 1)dx + (x + x^3)dy = 0$ is __

Options :

1. e^x

2. x^2

3. $\frac{1}{x}$

4. x

Question Number : 48 Question Id : 6780946051 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The differential equation whose solution is $Ax^2 + By^2$, where A,B are arbitrary constants are of ----

Options :

1. 1^{st} order and 1^{st} degree

2. 2^{nd} order and 1^{st} degree

3. 2^{nd} order and 2^{nd} degree

4. 1^{st} order and 2^{nd} degree

Question Number : 49 Question Id : 6780946052 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The general solution of the differential equation $\frac{d^2x}{dt^2}-4\frac{dx}{dt}+5x=0$ is

Options :

1. $x=(c_1\cos t+c_2\sin t)e^{2t}$

2. $t=(c_1\cos x+c_2\sin x)e^{2x}$

3. $x=(c_1\cos 2t+c_2\sin 2t)e^{t}$

4. $t=(c_1\cos 2x+c_2\sin 2x)e^{x}$

Question Number : 50 Question Id : 6780946053 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The particular integral of $(D-2)^2y=\sin 2x$ is

Options :

1. $\frac{\cos 2x}{8}$

2. $\frac{\sin 2x}{8}$

3. $\frac{-\cos 2x}{2}$

4. $\frac{-\sin 2x}{2}$

Physics

Number of Questions:	25
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 51 Question Id : 6780946054 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The unit of impulse is the same as that of

Options :

1. moment of force
2. linear momentum
3. force
4. pressure

Question Number : 52 Question Id : 6780946055 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the force is given by $F = at+bt^2$ where t is the time. The dimensions of a and b are

Options :

1. MLT^{-4}, MLT^{-2}
2. MLT^{-3}, MLT^{-4}
3. ML^2T^{-3}, ML^2T^{-2}
4. ML^2T^{-3}, ML^3T^{-4}

Question Number : 53 Question Id : 6780946056 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Vector parallel to $6\hat{i} + 8\hat{j}$ and having a magnitude of 5 is

Options :

1. $4\hat{i} + 3\hat{j}$
2. $12\hat{i} + 16\hat{j}$
3. $16\hat{i} +8\hat{j}$
4. $3\hat{i} + 4\hat{j}$

Question Number : 54 Question Id : 6780946057 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If $|\vec{A} \times \vec{B}| = K(AB)$ then angle between $\vec{A}$ and $\vec{B}$ is

Options :

1. $\cos^{-1}K$

2. $\cos^{-1}(1/K)$

3. $\sin^{-1}K$

4. $\sin^{-1}(1/K)$

Question Number : 55 Question Id : 6780946058 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cricket ball is thrown at a speed of 28 m/s in a direction 30^0 above the horizontal. The maximum height reached by the ball is

Options :

1. 10 m

2. 20 m

3. 30 m

4. 40 m

Question Number : 56 Question Id : 6780946059 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two bodies are projected at angles of 45^0 and 60^0 with the horizontal with same velocity simultaneously. Ratio of their horizontal ranges is

Options :

1. $\sqrt{3}:2$

2. $2:\sqrt{3}$

3. 1:2

4. 2:1

Question Number : 57 Question Id : 6780946060 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A ball thrown by a boy is caught 2 seconds later by another at some distance away on the same level. If the angle of projection is 30^0, the velocity of projection is

Options :

1. 19.6 m/sec

2. 9.8 m/sec

3. 4.9 m/sec

4. 5.2 m/sec

Question Number : 58 Question Id : 6780946061 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A 200 m wide river flows with a velocity of 5 m/sec. A man crosses the river in the shortest time of 25 sec. If there is no flow and he swims with the same velocity, the time taken to cross the river is

Options :

1. $\frac{200}{5\sqrt{3}}$ sec

2. 20 sec

3. 25 sec

4. $25\sqrt{2}$ sec

Question Number : 59 Question Id : 6780946062 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A body of mass 1 Kg lies on an inclined plane of angle 60^0 to the horizontal. If the coefficient of friction is 0.4, the frictional force along the inclined plane is

Options :

1. 1.96 N

2. 0.98 N

3. 0.49 N

4. 0.245 N

Question Number : 60 Question Id : 6780946063 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A force of 20 Kg weight is required to just slide a wooden box weighing 50 Kg over ice. Then coefficient of static friction between the surfaces in contact is

Options :

1. 0.2

2. 0.4

3. 0.8

4. 0.1

Question Number : 61 Question Id : 6780946064 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A cyclist comes to a skidding stop in 10m. During this process, the force on the cycle due to the road is 200N and is directly opposed to the motion. The work done by the road on the cycle is

Options :

1. 1000 J

2. 2000J

3. -1000J

4. -2000J

Question Number : 62 Question Id : 6780946065 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A sphere of mass 4 Kg is dropped from a certain height. After 5s, its kinetic energy is ($g=10\ m/s^2$)

Options :

1. 5J

2. 50 J

3. 5 KJ

4. 50 KJ

Question Number : 63 Question Id : 6780946066 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An elevator weighing 500 kg is to be lifted up at a constant velocity of 0.20 m/s. What would be the minimum power of the motor to be used?

Options :

1. 100 W

2. 500 W

3. 980 W

4. 900 W

Question Number : 64 Question Id : 6780946067 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

At t=0, the displacement of a particle in SHM is half its amplitude. Its initial phase is (referring to mean position)

Options :

1. $\frac{\pi}{6}$

2. $\frac{\pi}{3}$

3. $\frac{2\pi}{3}$

4. $\frac{\pi}{2}$

Question Number : 65 Question Id : 6780946068 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The length of seconds pendulum is 100 cm. To have a period half of this value, the length is to be reduced by

Options :

1. 25 cm

2. 75 cm

3. 50 cm

4. 100 cm

Question Number : 66 Question Id : 6780946069 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Inside a big hall, the reverberation time is

Options :

1. directly proportional to volume

2. inversely proportional to sound absorption

both directly proportional to volume

and

inversely proportional to sound absorption

3.

depends on temperature

4.

Question Number : 67 Question Id : 6780946070 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The voice of lion is different from that of a mosquito because

Options :

1. the sounds have different pitch

2. they are of different size

3. the two voices travel with different velocities

4. the sounds have different phases

Question Number : 68 Question Id : 6780946071 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A car is travelling at $\frac{v}{10}$ m/s and sounds horn of frequency 990 Hz. The apparent frequency heard by a police chasing the car at $\frac{v}{9}$ m/s (v is the velocity of sound) is

Options :

1. 990 Hz

2. 900 Hz

3. 100 Hz

4. 1000Hz

Question Number : 69 Question Id : 6780946072 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When ice cube melts and becomes water, the ice-water system undergoes a change such that

Options :

1. entropy of the system decreases and internal energy decreases

2. entropy of the system decreases and internal energy increases

3. entropy of the system increases and internal energy increases

4. entropy of the system increases and internal energy decreases

Question Number : 70 Question Id : 6780946073 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A mass of 300 gm falls from a height of 3 m(g=9.8 m/s^2). Assuming that the whole energy is converted into heat, the amount of heat produced is

Options :

1. 2 cal

2. 2.1 cal

3. 4 cal

4. 4.2 cal

Question Number : 71 Question Id : 6780946074 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During an adiabatic expansion of 2 moles of a gas, the change in internal energy was found to be equal to 100 J. The work done during the process will be equal to

Options :

1. zero

2. -100 J

3. 200 J

4. 100 J

Question Number : 72 Question Id : 6780946075 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pressure and density of a diatomic gas ($\gamma = \frac{7}{5}$) change adiabatically from (P,d) to (P^1,d^1). If $\frac{d^1}{d} = 32$, then $\frac{P^1}{P}$ is

Options :

1. 128

2. 32

3. 256

4. 64

Question Number : 73 Question Id : 6780946076 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Boyle's law holds good for an ideal gas during

Options :

1. isobaric changes

2. isothermal changes

3. isochoric changes

4. isotopic changes

Question Number : 74 Question Id : 6780946077 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The threshold frequency of metal is υ_0. When a light of frequency 4 υ_0 is incident on metal then the $K.E_{max}$ of emitted electrons is

Options :

1. $2\upsilon_0 h$

2. $3\upsilon_0 h$

3. $4\upsilon_0 h$

4. $\upsilon_0 h$

Question Number : 75 Question Id : 6780946078 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Superconductors are _____ materials

Options :

1. dielectric

2. paramagnetic

3. ferromagnetic

4. diamagnetic

Number of Questions:	25
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 76 Question Id : 6780946079 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The Pauli exclusion principle is concerned with

Options :

1. Energy of orbital.
2. Spin of electron.
3. Energy of electron
4. Angular momentum of electron

Question Number : 77 Question Id : 6780946080 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

According to Bohr's model of hydrogen atom, the following is quantized

Options :

1. Linear momentum
2. Linear velocity
3. Angular momentum
4. Angular velocity

Question Number : 78 Question Id : 6780946081 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

How many 'd' – orbitals have two perpendicular nodal planes

Options :

1. Two
2. Three
3. Four
4. Five

Question Number : 79 Question Id : 6780946082 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In sodium chloride crystal, each Na^+ ion is surrounded by

Options :

1. Two Cl^- ions
2. Four Cl^- ions
3. Six Cl^- ions
4. Eight Cl^- ions

Question Number : 80 Question Id : 6780946083 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following molecule contains a π – bond

Options :

1. H_2
2. O_2
3. F_2
4. HCl

Question Number : 81 Question Id : 6780946084 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which among the following is insoluble in water?

Options :

1. Alcohol
2. Ammonia
3. Benzene
4. Acetone

Question Number : 82 Question Id : 6780946085 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The normality of 2.3 M H_2SO_4 solution is

Options :

1. 0.46N
2. 0.23 N
3. 2.3 N

4. 4.6N

Question Number : 83 Question Id : 6780946086 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

8 grams of substance of molecular weight 40 is dissolved in 250 g of water. Then the **molality** of the solution is

Options :

1. 0.4

2. 0.8

3. 0.2

4. 0.6

Question Number : 84 Question Id : 6780946087 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The pH value of 0.05M $Ba(OH)_2$ solution is

Options :

1. 10

2. 12

3. 13

4. 11

Question Number : 85 Question Id : 6780946088 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following molecule is not a Lewis Base?

Options :

1. H_2O

2. BF_3

3. NH_3

4. CO

Question Number : 86 Question Id : 6780946089 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

During the electrolysis of brine, 710 g of Cl_2 was liberated at anode. The weight of NaOH formed

Options :

1. 800 g

2. 400 g

3. 80 g

4. 40 g

Question Number : 87 Question Id : 6780946090 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the Danniel cell, which electrode acts as anode?

Options :

1. Cu

2. Hg

3. Zn

4. Pt

Question Number : 88 Question Id : 6780946091 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The molar conductance of HCl is more than that of NaCl because

Options :

1. NaCl is more polar than KCl

2. NaCl is ionic while HCl is covalent

3. Ionic mobility of H^+ is more than that of Na^+

4. H^+ get hydrated.

Question Number : 89 Question Id : 6780946092 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The units for electrochemical equivalent are

Options :

1. grams

2. grams ampere

3. Coulomb

4. Grams per coulomb

Question Number : 90 Question Id : 6780946093 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Zeolite softening process removes

Options :

1. Only permanent hardness of water
2. Only temporary hardness of water
3. Both temporary and permanent hardness of water
4. The dissolved gases in permanent hard water.

Question Number : 91 Question Id : 6780946094 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The permanent hardness of water is caused by the presence of

Options :

1. Bicarbonates of Ca and Mg
2. Carbonates of Na and K
3. Chlorides and Sulphates of Ca and Mg.
4. Phosphates of Na and K

Question Number : 92 Question Id : 6780946095 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The secondary treatment of water uses _____ to consume wastes in water.

Options :

1. Filtration
2. Sedimentation
3. Chemicals
4. Microorganisms

Question Number : 93 Question Id : 6780946096 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Difficult to monitor and very dangerous form of corrosion is

Options :

1. Galvanic
2. Pitting

3. Crevice

4. Stress

Question Number : 94 Question Id : 6780946097 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

When Pt and Co are electrically connected, which one gets corroded?

Options :

1. Co

2. Pt

3. None

4. both

Question Number : 95 Question Id : 6780946098 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What rubber was invented when Dr. Joseph C. Patrick tried to make antifreeze?

Options :

1. Methyl rubber

2. Chloroprene

3. Bruna N

4. Thiokol

Question Number : 96 Question Id : 6780946099 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The first plastic ever synthesized was called _____.

Options :

1. Bakelite

2. Nylon

3. Dacron

4. Cellulose

Question Number : 97 Question Id : 6780946100 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

_____ is a brand of polyester textile fiber that is wrinkle resistant and strong

Options :

1. Cellulose
2. Dacron
3. Bakelite
4. Nylon

Question Number : 98 Question Id : 6780946101 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Water gas is a mixture of

Options :

1. $H_2 + CO$
2. $N_2 + CO$
3. $H_2 + CO_2$
4. $H_2 + CH_4$

Question Number : 99 Question Id : 6780946102 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is not a greenhouse gas?

Options :

1. CO
2. CO_2
3. water vapour
4. CH_4

Question Number : 100 Question Id : 6780946103 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Burning of fossil fuels causes

Options :

1. Global warming
2. Ozone depletion
3. Acid rain
4. Eutrophication

Number of Questions:	100
Display Number Panel:	Yes
Group All Questions:	No

Question Number : 101 Question Id : 6780946104 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The operation of searching for the mineral is called.

Options :

1. Extrapolation
2. Prospecting
3. Exploitation
4. Extraction

Question Number : 102 Question Id : 6780946105 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Which of the following is the important ancillary mining operation

Options :

1. Depillaring
2. Development
3. Strata control
4. Drilling and blasting

Question Number : 103 Question Id : 6780946106 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The deposits occur nearer to the surface are

Options :

1. Singenetic deposits
2. Superficial deposits
3. Stratified deposits
4. Overburden deposits

Question Number : 104 Question Id : 6780946107 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Fishing the drill hole means

Options :

1. Surveying for deviation of bore hole

2. Flushing the hole for cuttings

3. Pumping the water and mud under pressure into the hole

4. Tracing and withdrawing the broken and lost parts from the hole

Question Number : 105 Question Id : 6780946108 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The straight chisel bit in drilling is used for

Options :

1. Medium hard strata

2. Soft strata

3. Hard strata

4. Very hard strata

Question Number : 106 Question Id : 6780946109 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The chemical used in the preparation of booster is

Options :

1. $NaNo_3$

2. PETN and TNT

3. ANFO and ASA

4. ASA and PETN

Question Number : 107 Question Id : 6780946110 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Specific gravity of the methane gas in underground coal mine

Options :

1. 0.599

2. 0.529

3. 0.623

4. 0.553

Question Number : 108 Question Id : 6780946111 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Modern flame safety lamp can withstand an air velocity of.....

Options :

1. 10 m/s
2. 11.5 m/s
3. 12.5 m/s
4. 14 m/s

Question Number : 109 Question Id : 6780946112 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Magma is produced deep in the earth's crust where temperatures are of the order of.....

Options :

1. $900^0 - 1600^0$ C
2. $800^0 - 1500^0$ C
3. $700^0 - 1400^0$ C
4. $600^0 - 1300^0$ C

Question Number : 110 Question Id : 6780946113 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Rocks crystallized at greater depths are called

Options :

1. Hypabisal rocks
2. Igneous rocks
3. Intrusive rocks
4. Plutonic rocks

Question Number : 111 Question Id : 6780946114 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An imaginary plane or surface which divides a fold into two equal parts is called as.....

Options :

1. Normal plane
2. Dipping plane

3. Axial plane

4. Overturned plane

Question Number : 112 Question Id : 6780946115 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A local warping in the horizontal strata is called as.....

Options :

1. Homo-cline

2. Monocline

3. Bi-cline

4. Structural ferrace

Question Number : 113 Question Id : 6780946116 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The places where the oil accumulates to form an oil pool are called

Options :

1. Oil forms

2. Oil gallons

3. OilTraps

4. Oil pools

Question Number : 114 Question Id : 6780946117 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A group of closely spaced parallel veins are called.....

Options :

1. Lenticular veins

2. Composite veins

3. Ladder veins

4. Sheeted veins

Question Number : 115 Question Id : 6780946118 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A zinc deposit formed by a geological process is called

Options :

1. Magmatic separation

2. Supergene

3. Gravity concentration

4. Hydrothermal

Question Number : 116 Question Id : 6780946119 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

.....rocks are formed when magma crystallizes beneath the earth's surface.

Options :

1. Intrusive

2. Extrusive

3. Sedimentary rocks

4. Metamorphic rocks

Question Number : 117 Question Id : 6780946120 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A coal heading 4m wide and 2.5m height has an advance of 1m per cycle. The amount of explosive used in blasting is 6 kg. Taking specific gravity of coal as 1.5, the powder factor is.....

Options :

1. 1.66 te/kg

2. 2.50 te/kg

3. 2.99 te/kg

4. 3.32 te/kg

Question Number : 118 Question Id : 6780946121 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In horizon system of mining of coal seam, the laterals are driven

Options :

1. At right angles to the strike of the seam

2. Parallel to the strike of the seam

3. At 45^0 to the dip of the seam

4. At any angle to the strike of the seam

Question Number : 119 Question Id : 6780946122 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Deflagration is

Options :

1. Rapid explosion

2. Explosion and burning

3. Rapid burning but not an explosion

4. None of the above

Question Number : 120 Question Id : 6780946123 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The width of heading in Bord and Pillar method of working depends upon

Options :

1. Depth of working

2. Face machinery used

3. Size of the pillars

4. Ventilation requirement

Question Number : 121 Question Id : 6780946124 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For a given perimeter the greatest area of support is offered by

Options :

1. Rectangular pillar

2. Rhomboid pillar

3. Square pillar

4. Circular pillar

Question Number : 122 Question Id : 6780946125 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In ordinary coal, the rate of the penetration generally

Options :

1. 0.5 m/min
2. 2.15 m/min
3. 1.9 m/min
4. 1.5 m/sec

Question Number : 123 Question Id : 6780946126 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

With DERD shearer the cut coal is thrown on to the armoured face conveyor by

Options :

1. Centrifugal face
2. By the movement of the machine
3. By the gummer
4. Deflected by the plough.

Question Number : 124 Question Id : 6780946127 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Drivage of two sets of roads and forming of pillar is known as

Options :

1. Working in the broken
2. Working in the whole
3. Long-wall retreating
4. Slicing

Question Number : 125 Question Id : 6780946128 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Gestation period is

Options :

1. The time interval between the mining start and production start
2. The time interval between the mining start and mining close

3. The time interval between the production start and mining close

4. Lag on ignition.

Question Number : 126 Question Id : 6780946129 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Blasting of a stope in Vertical Crater Retreat method consists of

Options :

1. Blasting one row after another

2. Creating initial slot going for mass blast

3. Blasting all the holes in slices

4. Blasting one column after another

Question Number : 127 Question Id : 6780946130 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

High production rates coupled with large scale and extensive subsidence results from the method of

Options :

1. Top slicing

2. Block caving

3. Sublevel caving

4. Vertical Creater Retreat mining

Question Number : 128 Question Id : 6780946131 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Best suited mining method for thick vein/massive deposit, with strong ore, strong walls and steep dip is

Options :

1. Open stope

2. Cut and fill

3. Shrinkage stoping

4. Block caving

Question Number : 129 Question Id : 6780946132 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two or three compartment method of raising is limited to?

Options :

1. 10 to 15m
2. 15 to 20 m
3. 20 to 25 m
4. 25 to 30 m

Question Number : 130 Question Id : 6780946133 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A method of controlling subsidence by proper control of underground mining operations is known as

Options :

1. Contiguous mining
2. Stowed mining
3. Horizon mining
4. Harmonic mining

Question Number : 131 Question Id : 6780946134 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Beam theory is applied to

Options :

1. Prop free front face
2. Freshly exposed roof
3. Roof bolting
4. Bar supporting

Question Number : 132 Question Id : 6780946135 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The load at which an axially loaded prop reaches its elastic limit is

Options :

1. Load bearing capacity
2. Setting load
3. Yield load

4. Early bearing load

Question Number : 133 Question Id : 6780946136 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For a surface mine, the maximum angle of slope of the bench

does not exceed

Options :

1. 30^0
2. 45^0
3. 60^0
4. 10^0

Question Number : 134 Question Id : 6780946137 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In respect of dipper shovel, "crowding" means

Options :

1. Raising bucket to dumper height
2. Piercing the bucket into broken mineral
3. Swinging the bucket round
4. Moving the shovel from one place to another

Question Number : 135 Question Id : 6780946138 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In a ripper, the ripping tool exerts thrust into the ground by

Options :

1. Hydraulic pressure
2. Compressed air pressure
3. Its own weight
4. Hammering

Question Number : 136 Question Id : 6780946139 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The slope of the dumps of waste designed in such a way that

waste should not roll down at coal benches when it assumes

Options :

1. Its momentum

2. Its angle of repose

3. Slope angle of bench

4. Critical height

Question Number : 137 Question Id : 6780946140 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The main reason to prepare Environmental Management Plan is

Options :

1. To manage air, water and land pollutions

2. To reduce noise and fly rock pollution

3. To manage ground vibrations

4. To improve the production

Question Number : 138 Question Id : 6780946141 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The method of mining where the mineral is excavated in small open pits and is transported to the surface through u/g excavations is called

Options :

1. Hydraulic mining

2. Open pit mining

3. Glory hole mining

4. Alluvial mining

Question Number : 139 Question Id : 6780946142 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Terrace cut for a Lignite deposit is given with the help of?

Options :

1. Surface miner

2. Continuous miner

3. Bucket Wheel Excavator

4. Dipper shovel

Question Number : 140 Question Id : 6780946143 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the wet bulb temperature exceeds 30.5^0C at any place air current should be faster than?

Options :

1. 1 m/s
2. 2 m/s
3. 3 m/s
4. 0.5 m/s

Question Number : 141 Question Id : 6780946144 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

By varying the pitch of the blades the pressure generated by axial flow fan _____

Options :

1. remains same
2. Decreases
3. Increases
4. Increases 8 times

Question Number : 142 Question Id : 6780946145 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In an underground working area, CH_4 and CO_2 are normally expected to be found respectively

Options :

1. Near the floor and along the roadway
2. Near the floor and near the roof
3. Near the roof and near the floor
4. Along the roadway and near the floor

Question Number : 143 Question Id : 6780946146 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the CO/O_2 deficiency ratio in a mine is 2.25 %. It indicates

Options :

1. Existence of spontaneous heating

2. Active fire

3. Heating in advanced stage

4. Normal to the coal mine

Question Number : 144 Question Id : 6780946147 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The detector that works on the principle of diffusion-combustion-contraction is

Options :

1. Spiralarm

2. Methano meter

3. Spectrometer

4. Ring rose detector

Question Number : 145 Question Id : 6780946148 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A gas mask does not include

Options :

1. Check valve

2. Warning device

3. Face piece assembly

4. Coolant canister

Question Number : 146 Question Id : 6780946149 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The amount of heat required to burn the methane is

Options :

1. 15 kcal/mole

2. 19.5 kcal/mole

3. 22.1 kcal/mole

4. 25 kcal/mole

Question Number : 147 Question Id : 6780946150 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The minimum thickness of the explosion proof isolation stoping is?

Options :

1. 1.49 m
2. 3.3 m
3. 4.50 m
4. 6 m

Question Number : 148 Question Id : 6780946151 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The lower limit of explosibility of methane is

Options :

1. 2.25%
2. 2.9 %
3. 4.8%
4. 16.9%

Question Number : 149 Question Id : 6780946152 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

An early indication of spontaneous heating of coal can be given by

Options :

1. Sweating of strata
2. Formation of CO_2
3. Rise of temperature
4. Active fire

Question Number : 150 Question Id : 6780946153 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Air samples behind the stopping should be drawn during periods of

Options :

1. High barometric pressure
2. Low barometric pressure

3. Medium barometric pressure

4. Very high barometric pressure

Question Number : 151 Question Id : 6780946154 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A stone dust barrier should be provided at a distance from the nearest working face not less than

Options :

1. 150 m

2. 250 m

3. 322 m

4. 350 m

Question Number : 152 Question Id : 6780946155 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The part of light which is reflected is

Options :

1. Luminous efficiency

2. Mean spherical candle power

3. Useful for illumination

4. Candela

Question Number : 153 Question Id : 6780946156 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In designing the safety appliances against fire damp explosion the point which has more importance is

Options :

1. Methane percentage

2. Amount of heat

3. Ignition temperature

4. Lag on ignition

Question Number : 154 Question Id : 6780946157 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The presence of nitrous fumes are detected by

Options :

1. The smell of rotten eggs
2. Sweet smell
3. Metallic taste on tongue
4. Headache

Question Number : 155 Question Id : 6780946158 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In shaft plumbing, the plumb bobs are immersed in a bucket of water to prevent

Options :

1. Oscillation of wires
2. Effect of ventilation current
3. Kinking of the wires
4. Swinging of wires

Question Number : 156 Question Id : 6780946159 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The combined effect of curvature and refraction in levelling is an error which is

Options :

1. Additive
2. Subtractive
3. Multiplicative
4. Divisive

Question Number : 157 Question Id : 6780946160 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The maximum permissible angular error in seconds in a closed underground traverse of 16 stations measured with a 20 seconds theodolite is

Options :

1. 200

2. 160

3. 120

4. 80

Question Number : 158 Question Id : 6780946161 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What will be the angle between the two lines OA and OB whose bearings are 56^0 and 154^0 respectively?

Options :

1. 98^0

2. 82^0

3. 210^0

4. 18^0

Question Number : 159 Question Id : 6780946162 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The type of vernier used in theodolites is

Options :

1. Retrograde vernier

2. Extended vernier

3. Double folded circular vernier

4. Double folded vernier

Question Number : 160 Question Id : 6780946163 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The horizontal angle between the true meridian and magnetic meridian is

Options :

1. Bearing

2. Local attraction

3. Declination

4. Variation

Question Number : 161 Question Id : 6780946164 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The very first step in measuring distance between two stations is

Options :

1. Unfolding chain or tape
2. Ranging
3. Measurement
4. Pacing

Question Number : 162 Question Id : 6780946165 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The simplest instrument used for setting right angles is

Options :

1. Optical square
2. Prism square
3. Cross staff
4. Site square

Question Number : 163 Question Id : 6780946166 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The method of levelling adopted for laying out a haulage roadway underground is

Options :

1. Differential levelling
2. Cross-sectional levelling
3. Reciprocal levelling
4. Longitudinal levelling

Question Number : 164 Question Id : 6780946167 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A compass traverse carried out for rough survey is balanced by which of the following method ?

Options :

1. Bowditch rule

2. Transit rule

3. Graphical method

4. Axis method

Question Number : 165 Question Id : 6780946168 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The staff reading taken on a station before shifting the instrument is

Options :

1. Fore sight

2. Intermediate sight

3. Back sight

4. Change point

Question Number : 166 Question Id : 6780946169 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In the surveyor's telescope the eye piece commonly used is

Options :

1. Erecting eye piece

2. Huygens eye piece

3. Ramsden eye piece

4. Diagonal eye piece

Question Number : 167 Question Id : 6780946170 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For surveying a road or railway line with compass or theodolite the method suitable is

Options :

1. Direct bearing

2. Inclined angle

3. Deflection angle

4. Continuous azimuth

Question Number : 168 Question Id : 6780946171 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The property which enables a metal to be drawn into wires is called

Options :

1. Ductility

2. Malleability

3. Toughness

4. Brittleness

Question Number : 169 Question Id : 6780946172 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The space factor for stranded rope is?

Options :

1. 30 to 40 %

2. 40 to 50 %

3. 50 to 60 %

4. 75 %

Question Number : 170 Question Id : 6780946173 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The correct place for tensioning arrangement in endless rope haulage is

Options :

1. At the top of the incline

2. At the bottom of the incline

3. Any point on the level roadway

4. At the point where slack rope is most likely to occur

Question Number : 171 Question Id : 6780946174 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In case of power failure, the device used to hold the belt to run downward is

Options :

1. Sequence control

2. Back stay

3. Remote control

4. Holdback

Question Number : 172 Question Id : 6780946175 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The power is supplied to the coal drill by.....

Options :

1. 5 core armoured cable

2. 3 core armoured cable

3. 4 core screened cable

4. 5 core screened cable

Question Number : 173 Question Id : 6780946176 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

What is the normal operating air pressure for pneumatically operated machines in underground in psi?

Options :

1. 65 to 75

2. 25

3. 85 to 100

4. 100 to 120

Question Number : 174 Question Id : 6780946177 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Turbine pumps are suitable for water quantities up to?

Options :

1. 1 lac lit/min

2. 50000 lit/min

3. 5000 lit/min

4. 500 lit/min

Question Number : 175 Question Id : 6780946178 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

For winding purpose locked coil rope is preferred because it

Options :

1. Offers greater resistance
2. Has greater fill factor
3. Permits high factor of safety
4. Cannot be spliced

Question Number : 176 Question Id : 6780946179 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A component which plays most important role of safety in detaching hook is

Options :

1. Jaws
2. Centre pivot
3. D-link pin
4. Copper pin

Question Number : 177 Question Id : 6780946180 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The usual maximum speed of winding drum shaft is

Options :

1. 120 rpm
2. 240 rpm
3. 90 rpm
4. 45 rpm

Question Number : 178 Question Id : 6780946181 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In Keope winding the overwinding is prevented by

Options :

1. Safety hook

2. Breakage of rope

3. Convergence of guides

4. Thickening of guides

Question Number : 179 Question Id : 6780946182 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Lemniscate bar is the component of

Options :

1. Road header

2. Shield support

3. DERDS

4. AFC

Question Number : 180 Question Id : 6780946183 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In underground mines, the power cannot be used at voltage exceeding

Options :

1. 30

2. 110

3. 220

4. 250

Question Number : 181 Question Id : 6780946184 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

As compared with cage, a skip carries a large payload

Options :

1. 2 times

2. 3 times

3. 5 times

4. 8 times

Question Number : 182 Question Id : 6780946185 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Armoured chain conveyors are principally used for?

Options :

1. Bord and pillar method

2. In gate roads

3. Prop free front of L/W face

4. Bridge conveyors

Question Number : 183 Question Id : 6780946186 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Micro organization is a company with a capital less than

Options :

1. 10 lakhs

2. 25 lakhs

3. 75 lakhs

4. 100 lakhs

Question Number : 184 Question Id : 6780946187 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Register of return of reportable accidents is maintained in the form of?

Options :

1. FORM J

2. FORM K

3. FORM L

4. FORM M

Question Number : 185 Question Id : 6780946188 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Mine Rules came into force on

Options :

1. 2nd March 1955

2. 2nd July 1955

3. 2nd May 1955

4. 2nd January 1955

Question Number : 186 Question Id : 6780946189 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The drinking water points shall not be situated within ……..of

any washing place, urinal or latrine.

Options :

1. 6 m
2. 15m
3. 10m
4. 12 m

Question Number : 187 Question Id : 6780946190 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

If the gradient is less than 1 in 6, manholes may be provided at

intervals of not more than

Options :

1. 10 m
2. 20 m
3. 30 m
4. 40 m

Question Number : 188 Question Id : 6780946191 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Arrangement shall be made for suppression of coal dust with

water within at least.....of the face?

Options :

1. 60 m
2. 50 m
3. 80 m
4. 100 m

Question Number : 189 Question Id : 6780946192 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

As per Mines Act 1952, the notice of opening of mine is given in the form..?

Options :

1. FORM I
2. FORM II
3. FORM III
4. FORM IV

Question Number : 190 Question Id : 6780946193 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Every worker has to undergo vocational training once in.....years?

Options :

1. 3
2. 5
3. 6
4. 4

Question Number : 191 Question Id : 6780946194 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Except in stone drift, not more than .....shots shall be fired in any one round.

Options :

1. 5
2. 10
3. 15
4. 20

Question Number : 192 Question Id : 6780946195 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Every plan shall show a scale of the plan at least .....long.

Options :

1. 15 cm
2. 20 cm
3. 25 cm
4. 30 cm

Question Number : 193 Question Id : 6780946196 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Ore grade for which revenue from the recoverable reserve exactly equals the cost of mining, treatment, and marketing is known as

Options :

1. Cut – off grade
2. Break – even grade
3. Average grade
4. Liquidation grade

Question Number : 194 Question Id : 6780946197 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Safety officer shall be appointed in a mine if the average monthly output exceeds

Options :

1. 2500 tonnes
2. 5000 tonnes
3. 7500 tonnes
4. 10000 tonnes

Question Number : 195 Question Id : 6780946198 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In high efficiency combustion and advanced power generation technologies, the coal fired power plants are units larger than.....MW

Options :

1. 600
2. 500

3. 400

4. 700

Question Number : 196 Question Id : 6780946199 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The process which is based purely on density of minerals and does not depend on rate of fall or size of an ore or material is known as.....

Options :

1. Tabling

2. Sink and float

3. Froth flotation

4. Jigging

Question Number : 197 Question Id : 6780946200 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A metallurgical microscope can be employed to observe and measure directly the particles down to.....microns.

Options :

1. Less than 1

2. More than 1

3. Less than 1.5

4. More than 1.5

Question Number : 198 Question Id : 6780946201 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

In Blake jaw crusher, the angle between jaws is about

Options :

1. 10^0

2. 30^0

3. 20^0

4. 40^0

Question Number : 199 Question Id : 6780946202 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The primary grinding is referred to the reduction of ore as mined usually into.....mm

Options :

1. 50
2. 200
3. 150
4. 100

Question Number : 200 Question Id : 6780946203 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The method of separation of two or more of minerals of different specific gravities is called

Options :

1. Flotation
2. Sieving
3. Washing
4. Heavy media separation