Telangana State Council Higher Education

Notations :

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

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

Question Paper Name :	Mining Engineering 21st Sept 2020 Shift 1
Subject Name :	Mining Engineering
Creation Date :	2020-09-21 14:47:26
Duration :	120
Total Marks :	120
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console? :	Yes

Mining Engineering

Group Number :	1
Group Id :	88039682
Group Maximum Duration :	0

Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	120
Is this Group for Examiner? :	No

Mathematics

Section Id :	880396150
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	10
Section Marks :	10
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	880396150
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 8803969721 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Rank of the matrix $\begin{pmatrix} 1 & 3 & 5 & 1 \\ 1 & -2 & 1 & 1 \\ 2 & 1 & 6 & 3 \end{pmatrix}$ is

Options :

88039638881. ✖ 1

88039638882. ✖ 2

88039638883. ✔ 3

88039638884. ✖ 0

Question Number : 2 Question Id : 8803969722 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In how many points does the curve $y = x^5 - 10x^4 + 2$ meet the $x - axis$?

Options :

88039638885. ✖ 1

88039638886. ✖ 2

88039638887. ✔ 3

88039638888. ✖ 4

Question Number : 3 Question Id : 8803969723 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If X is a Poisson variate with the parameter λ such that $P(X = 3) = P(X = 4)$, then the mean of the variate is

Options :

88039638889. ✖ 1

88039638890. ✖ 2

88039638891. ✖ 3

88039638892. ✔ 4

Question Number : 4 Question Id : 8803969724 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Let $S=\left\{A=\begin{pmatrix} a & b \\ c & d \end{pmatrix}; a,b,c,d \in \{0,1\}\right\}$. If a matrix A is chosen at random from S, then the probability that A is non-singular

Options :

88039638893. ✖ $\frac{2}{3}$

88039638894. ✖ $\frac{1}{4}$

88039638895. ✔ $\frac{3}{4}$

88039638896. ✖ $\frac{1}{2}$

Question Number : 5 Question Id : 8803969725 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Two linearly independent solutions of $x^2 y'' + xy' + y = 0$ are

Options :

88039638897. ✖ $log\ (cosx),\ log\ (sinx)$

88039638898. ✔ $cos(log\ x),\ sin(log\ x)$

88039638899. ✖ $x,\ \frac{1}{x}$

88039638900. ✖ $x,\ \frac{1}{x^2}$

Question Number : 6 Question Id : 8803969726 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $k(cosx - sinx + xsinx)$ is a particular integral of $y'' + 2y' + y = x\ cos\ x$, then $k =$

Options :

88039638901. ✔ $\frac{1}{2}$

88039638902. ✖ $\frac{1}{3}$

88039638903. ✖ $\frac{1}{4}$

88039638904. ✖ $\frac{2}{43}$

Question Number : 7 Question Id : 8803969727 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If $y = a + be^x + cxe^x$, then eliminating a, b, c using derivatives yields the differential equation

Options :

88039638905. ✖ $y'''+2y''+y'=0$

88039638906. ✖ $y'''+4y''+3y'=0$

88039638907. ✖ $y'''-4y''+3y'=0$

88039638908. ✔ $y'''-2y''+y'=0$

Question Number : 8 Question Id : 8803969728 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$$f(x, y) = \tan^{-1}(y - 2x) + \cos^2(y+2x) \Rightarrow \frac{\partial^2 f}{\partial x^2} - \frac{4\partial^2 f}{\partial y^2} =$$

Options :

88039638909. ✖ f

88039638910. ✖ $2f$

88039638911. ✖ $4f$

88039638912. ✔ 0

Question Number : 9 Question Id : 8803969729 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The series $\sum_{n=1}^{\infty} ne^{-n}$

Options :

88039638913. ✔ converges

88039638914. ✖ diverges

88039638915. ✖ oscillates

88039638916. ✖ inconclusive

Question Number : 10 Question Id : 8803969730 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Global maximum of $x^2 - 2xy + y^2 - 3x + 3y - 5$ subject to $x - y = 1$ *is*

Options :

88039638917. ✖ -6

88039638918. ✔ -7

88039638919. ✖ -8

88039638920. ✖ -9

Mining Engineering

Section Id :	880396151
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	110
Number of Questions to be attempted :	110
Section Marks :	110
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	880396151
Question Shuffling Allowed :	Yes

Question Number : 11 Question Id : 8803969731 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A piece of coal sample weighs 10 kg in air and 2.0 kg when immersed in water. The specific gravity of the coal sample is

Options :

88039638921. ✔ 1.25

88039638922. ✖ 1.20

88039638923. ✖ 1.0

88039638924. ✖ 0.8

Question Number : 12 Question Id : 8803969732 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A dry parallelepiped rock sample of size 5.0 cm x 5.0 cm x 4.0 cm weighs 300 grams in air. After saturating the rock sample in water of specific gravity 1.0, its weight increased to 320 grams. The porosity of the rock sample in percentage is

Options :

88039638925. ✖ 6.66

88039638926. ✔ 20.00

88039638927. ✖ 6.25

88039638928. ✖ 25.00

Question Number : 13 Question Id : 8803969733 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Poisson's ratio is defined as

Options :

88039638929. ✖ lateral strain / linear strain

88039638930. ✖ linear stress / linear strain

88039638931. ✔ linear strain / lateral strain

88039638932. ✖ linear strain / lateral stress

Question Number : 14 Question Id : 8803969734 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If the Young's Modulus of rock sample is 100 MPa and Poisson's ratio is 0.25, then the modulus of rigidity of rock is

Options :

88039638933. ✖ 400 GPa

88039638934. ✖ 25 GPa

88039638935. ✔ 40 GPa

88039638936. ✖ 2.5 GPa

Question Number : 15 Question Id : 8803969735 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

"A crack will propagate when the reduction in potential energy that occurs due to crack growth is greater than or equal to the increase in surface energy due to the creation of new free surface", is postulated according to

Options :

88039638937. ✖ Coulomb theory

88039638938. ✖ Terzaghi theory

88039638939. ✖ Bieniawski theory

88039638940. ✔ Griffith's theory

Question Number : 16 Question Id : 8803969736 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

While conducting the test for Young's Modulus of elasticity, the peak stress is 100 MPa and axial strain is 0.001. The young's modulus of elasticity of the rock is

Options :

88039638941. ✔ 100 GPa

88039638942. ✖ 100 MPa

88039638943. ✖ 10 GPa

88039638944. ✖ 1.0 GPa

Question Number : 17 Question Id : 8803969737 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which is the correct relationship among Pressure (P), Quantity (Q) and Resistance (R) with reference to mine ventilation?

Options :

88039638945. ✖ $P = R / Q^2$

88039638946. ✖ $P = Q^2 / R$

88039638947. ✖ $P = R / Q$

88039638948. ✔ $P = R Q^2$

Question Number : 18 Question Id : 8803969738 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A body is subjected to a biaxial stress field: σ_1 = 10 MPa and σ_2 = 5.0 MPa, where σ_1 and σ_2 are the principal stresses. Then the shear stress acting on a plane making 45^0 with σ_1 plane is

Options :

88039638949. ✖ 15 MPa

88039638950. ✖ 5 MPa

88039638951. ✔ 2.5 MPa

88039638952. ✖ 7.5 MPa

Question Number : 19 Question Id : 8803969739 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The velocity of propagation of earth waves vary

Options :

88039638953. ✔ as square root of density

88039638954. ✖ as cube of density

88039638955. ✖ inversely with density

88039638956. ✖ directly with density

Question Number : 20 Question Id : 8803969740 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following agent is used to give sheath in a permitted sheathed explosive

Options :

88039638957. ✖ NaCl

88039638958. ✖ NG

88039638959. ✔ $NaHCO_3$

88039638960. ✖ PETN

Question Number : 21 Question Id : 8803969741 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Foam type fire extinguisher is not permitted to deal with Class C fires because

Options :

88039638961. ✔ foam is a conductor of electricity

88039638962. ✖ foam is inflammable

88039638963. ✖ foam produces toxic chemicals

88039638964. ✖ foam is inflammable and a toxic chemical

Question Number : 22 Question Id : 8803969742 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

CO_2 is treated as best extinguisher for

Options :

88039638965. ✖ Class **A** fires

88039638966. ✖ Class **B** fires

88039638967. ✔ Class **C** fires

88039638968. ✖ Class **A** and Class **B** fires

Question Number : 23 Question Id : 8803969743 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A Series coupling of a Hookean and Newtonian Model results in

Options :

88039638969. ✔ Maxwell Model

88039638970. ✖ Burger Model

88039638971. ✖ Kelvin Model

88039638972. ✖ Bingham Model

Question Number : 24 Question Id : 8803969744 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

According to Coulomb's theory the material will fail if the principal stresses (σ_1 , σ_3) have the following relationship (where τ_s is the maximum shear stress)

Options :

88039638973. ✖ $\tau_s = \sqrt{(\sigma_1^2 + \sigma_3^2)}/2$

88039638974. ✖ $\tau_s = \sqrt{(\sigma_1^2 - \sigma_3^2)}/2$

88039638975. ✖ $\tau_s = (\sigma_1 + \sigma_3)/2$

88039638976. ✔ $\tau_s = (\sigma_1 - \sigma_3)/2$

Question Number : 25 Question Id : 8803969745 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

According to Coulomb Navier's theory of failure, the ratio of compressive (σ_c) to tensile strength (σ_t) of rock is given as _____ (where μ is the coefficient of friction)

Options :

88039638977. ✖ $\frac{\sigma_c}{\sigma_t} = \frac{(\mu^2+1)^2+\mu^2}{(\mu^2+1)^2-\mu^2}$

88039638978. ✖ $\frac{\sigma_c}{\sigma_t} = \frac{(\mu^2+1)^2-\mu^2}{(\mu^2+1)^2+\mu^2}$

88039638979. ✔ $\frac{\sigma_c}{\sigma_t} = \frac{(\mu^2+1)^{1/2}+\mu}{(\mu^2+1)^{1/2}-\mu}$

88039638980. ✖ $\frac{\sigma_c}{\sigma_t} = \frac{(\mu^2+1)^{1/2}-\mu}{(\mu^2+1)^{1/2}+\mu}$

Question Number : 26 Question Id : 8803969746 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The normalised tangential stress concentration, σ_θ/σ_v, at the side of the circular opening ($\theta = 0^0$) for uni-axial in-situ stress condition (k=0), is

Options :

88039638981. ✖ $\sigma_\theta / \sigma_v = 0$

88039638982. ✔ $\sigma_\theta / \sigma_v = 3$

88039638983. ✖ $\sigma_\theta / \sigma_v = 1$

88039638984. ✖ $\sigma_\theta / \sigma_v = -1$

Question Number : 27 Question Id : 8803969747 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following gas is introduced in a goaf to combat or measure against fire or spontaneous heating?

Options :

88039638985. ✖ SO_2

88039638986. ✖ H_2

88039638987. ✖ NO_2

88039638988. ✔ N_2

Question Number : 28 Question Id : 8803969748 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Bieniawski's rock mass rating considers the parameters: RQD, uni-axial compressive strength, condition of joints, ground water condition and

Options :

88039638989. ✖ tensile strength

88039638990. ✔ spacing of joints

88039638991. ✖ shear strength

88039638992. ✖ flexural strength

Question Number : 29 Question Id : 8803969749 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In order to monitor support performance, what minimum percentage of installed bolts shall be subjected to anchorage testing randomly (as per DGMS Guidelines)?

Options :

88039638993. ✖ 4%

88039638994. ✖ 6%

88039638995. ✖ 8%

88039638996. ✔ 10%

Question Number : 30 Question Id : 8803969750 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Dilatancy of rock is associated with

Options :

88039638997. ✖ geological defects present in the rock sample

88039638998. ✖ decrease in volume due to compression of rock

88039638999. ✖ increase in shear strain due to cracking of rock

88039639000. ✔ increase in volume due to cracking of rock

Question Number : 31 Question Id : 8803969751 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Adit is adopted for

Options :

88039639001. ✖ shallow deposits

88039639002. ✔ hilly terrain deposits

88039639003. ✖ deep seated deposits

88039639004. ✖ quick return on investment

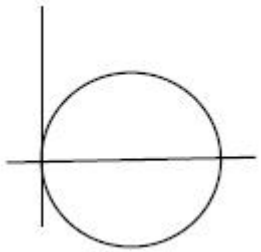
Question Number : 32 Question Id : 8803969752 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

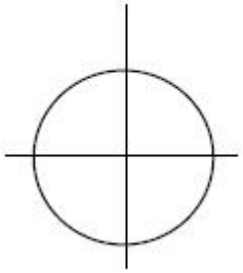
Identify the uniaxial compressive loading condition from the following four Mohr's Circles – (x axis represents normal stresses and y – axis represents shear stresses in all figures)

Options :

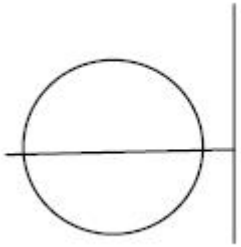
88039639005. ✔



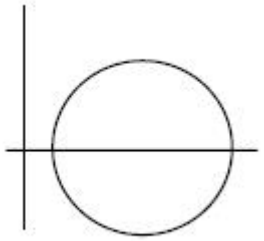
88039639006. ✖



88039639007. ✖



88039639008. ✖



Question Number : 33 Question Id : 8803969753 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If σ_s is the induced stress and σ_i is the in situ stress at a point below ground, then the stress concentration factor is

Options :

88039639009. ✖ $\sqrt{\frac{\sigma_s}{\sigma_i}}$

88039639010. ✖ $\sqrt{\frac{\sigma_i}{\sigma_s}}$

88039639011. ✖ $\frac{\sigma_i}{\sigma_s}$

88039639012. ✔ $\frac{\sigma_s}{\sigma_i}$

Question Number : 34 Question Id : 8803969754 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

While conducting a test for determining the Point Load Index of rock core sample of 50 mm diameter, the load at failure is 50 kN. Then the Point Load index of the rock sample in MPa is

Options :

88039639013. ✖ 2.0

88039639014. ✖ 200

88039639015. ✔ 20

88039639016. ✖ 10

Question Number : 35 Question Id : 8803969755 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The rock mass rating (RMR) does not make use of

Options :

88039639017. ✖ compressive strength of rock

88039639018. ✖ RQD

88039639019. ✔ shear strength of rock

88039639020. ✖ ground water condition

Question Number : 36 Question Id : 8803969756 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

As per ISRM standards, the L/D ratio of the rock sample for testing uni-axial Compressive strength in the laboratory is

Options :

88039639021. ✖ 1 to 3:1

88039639022. ✖ 1.5 to 3: 1

88039639023. ✔ 2.5 to 3:1

88039639024. ✖ 2 to 3:1

Question Number : 37 Question Id : 8803969757 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Select the suitable strength of rock samples used in the design of pillars

Options :

88039639025. ✖ tensile strength

88039639026. ✔ compressive strength

88039639027. ✖ shear strength

88039639028. ✖ flexural strength

Question Number : 38 Question Id : 8803969758 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Staggered junction in underground will pose which of the following problem?

Options :

88039639029. ✖ difficulty in setting up of props

88039639030. ✔ problem in laying transport system

88039639031. ✖ probability of more roof falls

88039639032. ✖ difficulty in ventilation survey

Question Number : 39 Question Id : 8803969759 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The density of coal ranges between

Options :

88039639033. ✔ 1.2 to 1.5 t/m^3

88039639034. ✖ 0.5 to 0.8 t/m^3

88039639035. ✖ 0.8 to 1.5 t/m^3

88039639036. ✖ 2.3 to 2.5 t/m^3

Question Number : 40 Question Id : 8803969760 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Slake durability index of rock is conducted to assess the

Options :

88039639037. ✖ compressive strength of rock

88039639038. ✖ tensile strength of rock

88039639039. ✖ shear strength of rock

88039639040. ✔ Disintegration characteristic of the weak and weathering of rocks

Question Number : 41 Question Id : 8803969761 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Barton classified the rock mass on the basis of

Options :

88039639041. ✖ RMR

88039639042. ✔ Q system

88039639043. ✖ slake durability

88039639044. ✖ RQD

Question Number : 42 Question Id : 8803969762 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Flat jack instrument is used for measuring

Options :

88039639045. ✔ in-situ stress in the rock

88039639046. ✖ Load on the rock

88039639047. ✖ bed separation resistance

88039639048. ✖ roof convergence

Question Number : 43 Question Id : 8803969763 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The term RQD/Jn expressed in Q system of rock classification refers to

Options :

88039639049. ✔ size of joint block

88039639050. ✖ shear strength of block surfaces

88039639051. ✖ environmental conditions influencing the behaviour of the rock mass

88039639052. ✖ roughness of joint surfaces

Question Number : 44 Question Id : 8803969764 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The classification of rock mass on the basis of RQD alone is given by

Options :

88039639053. ✖ Gamble

88039639054. ✔ Deere

88039639055. ✖ Bieniawski

88039639056. ✖ Barton

Question Number : 45 Question Id : 8803969765 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Time dependent permanent deformation is called as

Options :

88039639057. ✖ plastic deformation

88039639058. ✖ elastic deformation

88039639059. ✔ creep

88039639060. ✖ inelastic deformation

Question Number : 46 Question Id : 8803969766 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Gravitational force is an example of

Options :

88039639061. ✖ dynamic force

88039639062. ✔ body force

88039639063. ✖ static force

88039639064. ✖ surface force

Question Number : 47 Question Id : 8803969767 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

State a correct correlation between the point load strength index (I_s) for cylindrical rock core samples and uni-axial compressive strength (σ_c) of rocks.

Options :

88039639065. ✖ $I_s = 24 \times \sigma_c$

88039639066. ✔ $\sigma_c = 24 \times I_s$

88039639067. ✖ $I_s = 24 \times \sigma_c \times 100$

88039639068. ✖ $I_s = 24 \times \sigma_c \div 100$

Question Number : 48 Question Id : 8803969768 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An underground coal mine panel produces 600 tonnes per day deploying 200, 180 and 300 persons in three shifts. As per CMR 2017, the minimum quantity of air in m^3/min to be made available at the last ventilation connection of the panel is

Options :

88039639069. ✖ 1200

88039639070. ✖ 1500

88039639071. ✔ 1800

88039639072. ✖ 3600

Question Number : 49 Question Id : 8803969769 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The minimum quality of air to be maintained in underground coal mines as per CMR is that the air does not contain less than _____ % of O_2 and does not contain more than of _____ % of CO_2 or other noxious gases in quantity likely to affect the health of any person.

Options :

88039639073. ✖ 17.5 and 1.0

88039639074. ✖ 18.5 and 0.5

88039639075. ✔ 19 and 0.5

88039639076. ✖ 19.5 and 1.0

Question Number : 50 Question Id : 8803969770 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In Degree – II gassy mine, the percentage of inflammable gas in the general body of air at any place in the underground workings is

Options :

88039639077. ✖ less than 0.01%

88039639078. ✖ in between 0.01% and 0.02%

88039639079. ✖ in between 0.03% and 0.09%

88039639080. ✔ more than 0.1%

Question Number : 51 Question Id : 8803969771 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Reversal of air current in underground coal mines is done in case of / to

Options :

88039639081. ✖ heavy roof fall in roadways

88039639082. ✖ improve the quality of air

88039639083. ✔ fires in upcast shaft

88039639084. ✖ fires in downcast shaft

Question Number : 52 Question Id : 8803969772 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In case of blasting in opencast mines, the danger zone comprises an area within a radius of _____ m from the blasting site.

Options :

88039639085. ✖ 300

88039639086. ✖ 400

88039639087. ✔ 500

88039639088. ✖ 600

Question Number : 53 Question Id : 8803969773 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In case of opencast mines, if the pit walls are too steep to allow suitable bends, the layout of haul road geometry selected should be

Options :

88039639089. ✖ switch back

88039639090. ✔ spiral

88039639091. ✖ zigzag

88039639092. ✖ vertical

Question Number : 54 Question Id : 8803969774 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following mining method involves rock masses, panels or block of ore are undercut to induce caving, permitting the broken ore to be drawn off below.

Options :

88039639093. ✖ Sub level stoping

88039639094. ✖ Shrinkage stoping

88039639095. ✔ Block caving

88039639096. ✖ VCR method

Question Number : 55 Question Id : 8803969775 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

While working underground in any mine, the minimum distance that should be provided between two shafts or inclines is

Options :

88039639097. ✖ 12.0 m

88039639098. ✔ 13.5 m

88039639099. ✖ 14.5 m

88039639100. ✖ 15.5 m

Question Number : 56 Question Id : 8803969776 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Hydraulic mining of coal is normally applicable to mining seams which are

Options :

88039639101. ✔ thick , steeply inclined and for soft coal

88039639102. ✖ thick, flat and for soft coal

88039639103. ✖ thin, flat and for hard coal

88039639104. ✖ thin, steeply inclined and for hard coal

Question Number : 57 Question Id : 8803969777 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

A coal heading 4.0 m wide and 2.5 m height has an advance of 1.0 m per cycle. The amount of explosive used is 5 kg. Taking the specific gravity of coal as 1.5, the powder factor is

Options :

88039639105. ✔ 3.0 t/kg

88039639106. ✖ 2.5 t/kg

88039639107. ✖ 2.0 t/kg

88039639108. ✖ 1.11 t/kg

Question Number : 58 Question Id : 8803969778 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Advance supporting up to 30 m at both gate roads of a retreat longwall face is required due to

Options :

88039639109. ✖ back abutment pressure

88039639110. ✔ front abutment pressure

88039639111. ✖ yield pressure

88039639112. ✖ front and back abutment pressures

Question Number : 59 Question Id : 8803969779 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Match the following

Excavating / loading machine	**Transportation scheme**
P. Bucket wheel excavator	1. Mine Tub
Q. Continuous miner	2. Armoured Flexible Conveyor
R. Shearer	3. Shiftable conveyor
S. Load Haul Dumper	4. Shuttle car

Options :

88039639113. ✖ P-4, Q-1, R-3, S-2

88039639114. ✖ P-1, Q-4, R-2, S-3

88039639115. ✔ P-3, Q-4, R-2, S-1

88039639116. ✖ P-2, Q-1, R-3, S-4

Question Number : 60 Question Id : 8803969780 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The ground in central portion of the subsidence trough is subjected to

Options :

88039639117. ✖ Lateral tension

88039639118. ✔ Lateral compression

88039639119. ✖ Vertical compression

88039639120. ✖ Lateral tension and vertical compression

Question Number : 61 Question Id : 8803969781 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The maximum permissible gradient for locomotive transport in underground mines is

Options :

88039639121. ✖ 1 in 5

88039639122. ✖ 1 in 10

88039639123. ✔ 1 in 15

88039639124. ✖ 1 in 100

Question Number : 62 Question Id : 8803969782 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____ locomotive transport system has the highest power to weight ratio.

Options :

88039639125. ✖ Battery

88039639126. ✔ Trolley wire

88039639127. ✖ Diesel

88039639128. ✖ Battery and diesel

Question Number : 63 Question Id : 8803969783 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Flame trap is used in _____ locomotive

Options :

88039639129. ✖ battery

88039639130. ✖ trolley wire

88039639131. ✔ Diesel

88039639132. ✖ diesel and trolley wire

Question Number : 64 Question Id : 8803969784 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The maximum size of the mineral particle that can be carried on a belt conveyor without spillage is less than _____. (where W is the width of the belt)

Options :

88039639133. ✖ W

88039639134. ✖ W / 2

88039639135. ✔ W / 3

88039639136. ✖ W / 6

Question Number : 65 Question Id : 8803969785 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In cable belt conveyors, the function of cable is to

Options :

88039639137. ✖ increase the lateral stiffness of the belt

88039639138. ✖ increase the tensile strength of the belt conveyor

88039639139. ✔ support the belt and provide traction to the belt

88039639140. ✖ minimize elongation of the belt under tension

Question Number : 66 Question Id : 8803969786 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Function of snub pulley in a belt conveyor system is to

Options :

88039639141. ✖ clean the inner surface of the belt

88039639142. ✔ increase the angle of wrap/lap

88039639143. ✖ increase the belt tension

88039639144. ✖ prevents downward movement of the belt while belt is carrying material uphill and suddenly power fails

Question Number : 67 Question Id : 8803969787 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Impact rollers are used _____ in a belt conveyor system.

Options :

88039639145. ✔ at the loading point

88039639146. ✖ at the discharge point

88039639147. ✖ in the middle of the belt conveyor length

88039639148. ✖ at regular intervals all along the length of the belt

Question Number : 68 Question Id : 8803969788 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____ belt is prohibited for use in underground mines because of the fire risk

Options :

88039639149. ✖ PVC

88039639150. ✔ rubber

88039639151. ✖ steel cord belt

88039639152. ✖ plate belt

Question Number : 69 Question Id : 8803969789 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A centrifugal pump will not deliver water due to

Options :

88039639153. ✔ lack of priming

88039639154. ✖ partial opening of the delivery valve

88039639155. ✖ suction head less than 1.0 m

88039639156. ✖ too less discharge head

Question Number : 70 Question Id : 8803969790 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Flight bar is a component of

Options :

88039639157. ✖ road header

88039639158. ✖ shuttle car

88039639159. ✔ AFC

88039639160. ✖ gate belt conveyor

Question Number : 71 Question Id : 8803969791 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

_____ gas is released at battery charging stations

Options :

88039639161. ✖ CO_2

88039639162. ✖ CO

88039639163. ✔ H_2

88039639164. ✖ H_2S

Question Number : 72 Question Id : 8803969792 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

The maximum voltage at which signalling system can be operated in an underground coal mine as per Central Electricity Authority Regulations, 2010 (formerly Indian Electricity Rules, 1956), is

Options :

88039639165. ✖ 650 V

88039639166. ✖ 250 V

88039639167. ✖ 125 V

88039639168. ✔ 30 V

Question Number : 73 Question Id : 8803969793 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The following, used in underground coal mine is not a flame-proof apparatus

Options :

88039639169. ✖ hand held coal drill

88039639170. ✖ pump motor

88039639171. ✖ trolley wire loco motor

88039639172. ✔ jackhammer drill

Question Number : 74 Question Id : 8803969794 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Most popular hydraulic fluid used in powered supports is an emulsion of

Options :

88039639173. ✖ 20% oil and remaining water

88039639174. ✖ 20% water and remaining oil

88039639175. ✖ 5% water and the remaining oil

88039639176. ✔ 5% oil and remaining water

Question Number : 75 Question Id : 8803969795 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The relationship of tensions between the tight and slack side of the belt conveyor is given by _____, where θ is in radians, T1 & T2 are in Newtons

Options :

88039639177. ✔ $\frac{T1}{T2} = e^{\mu\theta}$

88039639178. ✖ $\frac{T1}{T2} = \mu e^{\theta}$

88039639179. ✖ $\frac{T1}{T2} = e^{2\mu\theta}$

88039639180. ✖ $\frac{T1}{T2} = e^{\theta}$

Question Number : 76 Question Id : 8803969796 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Method of joining two wire ropes permanently without using special fittings or attachments is called as

Options :

88039639181. ✖ Pre-stressing

88039639182. ✔ Rope splicing

88039639183. ✖ Laying of wires

88039639184. ✖ Vulcanizing

Question Number : 77 Question Id : 8803969797 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The difference between the domestic and coal mine lighting is _____.{ as per Central Electricity Authority Regulations, 2010 (formerly Indian Electricity Rules, 1956)},

Options :

88039639185. ✔ In domestic lighting the voltage is between one phase and the neutral and in mine lighting it is between two phases

88039639186. ✖ In domestic lighting the voltage is between two phases and in mine lighting it is between one phase and the neutral

88039639187. ✖ Both in domestic and mine lighting, the voltage is between two phases

88039639188. ✖ Both in domestic and mine lighting, the voltage is between one phase and the neutral

Question Number : 78 Question Id : 8803969798 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Which of the following is not a safety device in belt conveyor transport system?

Options :

88039639189. ✖ limit switch

88039639190. ✖ pull cord

88039639191. ✖ hold back

88039639192. ✔ vulcanizing

Question Number : 79 Question Id : 8803969799 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

What is the prime characteristic of shock tube detonator

Options :

88039639193. ✖ produces more vibrations

88039639194. ✖ it has tremendous effect on explosive column

88039639195. ✔ it is noiseless

88039639196. ✖ it cannot be used in a place where there is a chance of stray current

Question Number : 80 Question Id : 8803969800 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Drawbar pull of a locomotive is

Options :

88039639197. ✖ equal to its tractive effort

88039639198. ✖ more than the tractive effort

88039639199. ✔ less than the tractive effort

88039639200. ✖ not related to tractive effort

Question Number : 81 Question Id : 8803969801 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The following formula is used to calculate the theoretical head generated by each stage of a multistage centrifugal pump, where, **θ** = the angle made by the blade tips with the tangential direction (degrees), **V** = radial velocity of discharge (m/s), **U** = tangential speed of blade tips (m/s), **g** = acceleration due to gravity (m/s^2) and **η** = manometric efficiency

Options :

88039639201. ✔ $\frac{U(U-V\ Cot\theta)}{g}\eta$

88039639202. ✖ $\frac{V(V-U\ Cot\theta)}{g}\eta$

88039639203. ✖ $\frac{U(U+V\ Cot\theta)}{g}\eta$

88039639204. ✖ $\frac{V(V+U\ Cot\theta)}{g}\eta$

Question Number : 82 Question Id : 8803969802 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____ rope is used for underground haulage.

Options :

88039639205. ✔ round strand

88039639206. ✖ flattened strand

88039639207. ✖ compound strand

88039639208. ✖ locked coil

Question Number : 83 Question Id : 8803969803 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

6 X 19 wire rope means

Options :

88039639209. ✖ 6 inches in diameter and 19 wires

88039639210. ✖ 6 centimetres in diameter and 19 wires

88039639211. ✔ 6 strands with 19 wires in each strand

88039639212. ✖ 6 wires in each strand and 19 strands

Question Number : 84 Question Id : 8803969804 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

An alternative name for Koepe winder is

Options :

88039639213. ✖ drum winder

88039639214. ✔ friction winder

88039639215. ✖ bi-cylindro-conical winder

88039639216. ✖ bi-cylindrical winder

Question Number : 85 Question Id : 8803969805 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Main and tail rope haulage is best suited for

Options :

88039639217. ✖ level ground

88039639218. ✔ undulating gradient

88039639219. ✖ steep gradient

88039639220. ✖ mild gradient

Question Number : 86 Question Id : 8803969806 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What inference can be drawn when contour lines lie closer?

Options :

88039639221. ✖ slope of the land is gentle

88039639222. ✔ slope of the land is steep

88039639223. ✖ land is flat

88039639224. ✖ it does not indicate anything

Question Number : 87 Question Id : 8803969807 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following instruments is designed to work based on the satellite(s)?

Options :

88039639225. ✖ EDM

88039639226. ✖ Gyro theodolite

88039639227. ✔ GPS

88039639228. ✖ Ediograph

Question Number : 88 Question Id : 8803969808 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The angle of draw in a trough subsidence helps in determining the

Options :

88039639229. ✔ extent of surface subsidence

88039639230. ✖ maximum horizontal strain

88039639231. ✖ maximum subsidence

88039639232. ✖ maximum slope

Question Number : 89 Question Id : 8803969809 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The coolant in the self contained breathing apparatus is

Options :

88039639233. ✖ protosorb chemical

88039639234. ✖ potassium superoxide

88039639235. ✔ sodium phosphate

88039639236. ✖ water

Question Number : 90 Question Id : 8803969810 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

It is one of the capital budgeting decision making rules that represents amount of time it takes for a project to recover its initial cost.

Options :

88039639237. ✖ net present value

88039639238. ✔ payback period

88039639239. ✖ internal rate of return

88039639240. ✖ cash flow period

Question Number : 91 Question Id : 8803969811 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

For parallel roadways, the overall resistance of the roadways would be calculated using the formula

Options :

88039639241. ✖ $R = R_1 + R_2 + \ldots. R_n$

88039639242. ✔ $1/\sqrt{R} = 1/\sqrt{R_1} + 1/\sqrt{R_2} + \ldots. 1/\sqrt{R_n}$

88039639243. ✖ $R^2 = R_1^2 + R_2^2 + \ldots. R_n^2$

88039639244. ✖ $\sqrt{R} = \sqrt{R_1} + \sqrt{R_2} + \ldots\ldots \sqrt{R_n}$

Question Number : 92 Question Id : 8803969812 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Self rescuer can safely be used in an underground environment containing

Options :

88039639245. ✔ 17% O_2 & 1% CO

88039639246. ✖ 15% O_2 & 1% CO

88039639247. ✖ 19% O_2 & 3% CO

88039639248. ✖ 15% O_2 & 2% CO

Question Number : 93 Question Id : 8803969813 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Burnside safety boring apparatus is used for

Options :

88039639249. ✖ drivage of tunnels in virgin strata

88039639250. ✔ tapping of water from water logged workings

88039639251. ✖ for cable bolting

88039639252. ✖ exploratory drilling work in underground mines

Question Number : 94 Question Id : 8803969814 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the uniform end of year payment '**A**' which can be realized for '**n**' years from a single present investment '**P**' at '**r**' rate of interest in percentage, where R = (1 + r/100)?

Options :

88039639253. ✖ $A = PR^n/(r(R^n-1))$

88039639254. ✖ $A = Pr/(R^n(R^n-1))$

88039639255. ✖ $A = PR^n/(R^n-1)$

88039639256. ✔ $A = PrR^n/(R^n-1)$

Question Number : 95 Question Id : 8803969815 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a centrifugal fan, the conversion of velocity pressure to static pressure is accomplished by

Options :

88039639257. ✔ evasee

88039639258. ✖ impellers

88039639259. ✖ aerofoil shaped blades

88039639260. ✖ hub

Question Number : 96 Question Id : 8803969816 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the minimum quantity of drinking water to be supplied per shift in an underground mine to each person as per D.G.M.S. guidelines when wet bulb temperature is 34^0C

Options :

88039639261. ✔ 3.0 litres

88039639262. ✖ 2.0 litres

88039639263. ✖ 3.5 litres

88039639264. ✖ 1.5 litres

Question Number : 97 Question Id : 8803969817 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The maximum permissible percentage of CO_2, CO and nitrous fumes respectively in underground mines as per D.G.M.S guidelines are

Options :

88039639265. ✔ 500, 50 & 5 ppm

88039639266. ✖ 100, 10 & 5 ppm

88039639267. ✖ 200, 50 & 5 ppm

88039639268. ✖ 500, 50 & 10 ppm

Question Number : 98 Question Id : 8803969818 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When free silica in the respirable dust is 7.5%, what is the maximum permissible air borne dust concentration in underground coal mines?

Options :

88039639269. ✖ $3.0\ mg/m^3$

88039639270. ✔ $2.0\ mg/m^3$

88039639271. ✖ $1.0\ mg/m^3$

88039639272. ✖ $4.0\ mg/m^3$

Question Number : 99 Question Id : 8803969819 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In a PERT network, the time estimate of an activity is as per the following: Optimistic time – 2 days, most likely time – 4 days and pessimistic time – 12 days. The expected time and standard deviation of the activity in days respectively are

Options :

88039639273. ✖ 6.0 & 2.76

88039639274. ✖ 6.0 & 1.66

88039639275. ✔ 5.0 & 1.66

88039639276. ✖ 5.0 & 2.78

Question Number : 100 Question Id : 8803969820 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Massive sandstone in the immediate roof delays the local fall in the goaf during extraction. Under these conditions, crushing of pillars at the out-bye side takes place. This phenomenon is called

Options :

88039639277. ✔ over-riding of pillars

88039639278. ✖ local fall

88039639279. ✖ air-blast

88039639280. ✖ spalling of pillars

Question Number : 101 Question Id : 8803969821 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A fixed reference point of known elevation is called as

Options :

88039639281. ✖ hall mark

88039639282. ✖ reference axis

88039639283. ✔ bench mark

88039639284. ✖ azimuth

Question Number : 102 Question Id : 8803969822 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The bearing of a line AB is 150° and the angle ABC is 130°. What is the bearing of BC?

Options :

88039639285. ✖ 20°

88039639286. ✔ 100°

88039639287. ✖ 120°

88039639288. ✖ 280°

Question Number : 103 Question Id : 8803969823 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A 20 m long tape used for survey is found to be long by 10 cm. If the length measured with this steel tape is 500 m, then the actual length in m is

Options :

88039639289. ✖ 497.5

88039639290. ✔ 502.5

88039639291. ✖ 499.9

88039639292. ✖ 500.1

Question Number : 104 Question Id : 8803969824 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is

Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

Bypass valve in a compressed oxygen type self-contained breathing apparatus is meant for

Options :

88039639293. ✖ nitrogen purging

88039639294. ✖ flushing out the apparatus with oxygen on opening the cylinder valve

88039639295. ✔ supplying oxygen directly to the wearer in case, pressure reducing value malfunctions

88039639296. ✖ releasing excess pressure from the breathing bag

Question Number : 105 Question Id : 8803969825 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical
Correct Marks : 1 Wrong Marks : 0

As per the Central Electricity Authority Regulations, 2010 (formerly Indian Electricity Rules, 1956), the maximum permissible length of a flexible cable used for electric rope shovels (used in opencast mines) with reeling facility is

Options :

88039639297. ✖ 100 m

88039639298. ✖ 500 m

88039639299. ✔ 300 m

88039639300. ✖ 200 m

Question Number : 106 Question Id : 8803969826 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Under Coal Mine Regulations 2017, a gallery during development in a seam should not be more than _____ in width and not more than _____ in height.

Options :

88039639301. ✖ 4.8 m & 2.5 m

88039639302. ✖ 4.2 m & 3.0 m

88039639303. ✖ 4.2 m & 2.5 m

88039639304. ✔ 4.8 m & 3.0 m

Question Number : 107 Question Id : 8803969827 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Inverse initiation is a type of blast-hole initiation where the detonator is placed at _____ and the business end of the detonator _____

Options :

88039639305. ✖ the centre of the shot hole, facing towards the collar of the blast-hole

88039639306. ✔ the bottom/back of the shot hole, facing towards the collar of the blast-hole

88039639307. ✖ the open end of the shot hole, facing the bottom/back of the blast-hole

88039639308. ✖ the centre of the shot hole, facing towards the bottom/back of the blast-hole

Question Number : 108 Question Id : 8803969828 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When speed of a fan (ω = angular velocity) changes, as per fan laws, the power (P) will vary as

Options :

88039639309. ✖ $\frac{P_1}{P_2}=\frac{\omega_1^2}{\omega_2^2}$

88039639310. ✖ $\frac{P_1}{P_2}=\frac{\omega_1}{\omega_2}$

88039639311. ✔ $\frac{P_1}{P_2}=\frac{\omega_1^3}{\omega_2^3}$

88039639312. ✖ $\frac{P_1}{P_2}=\frac{\omega_2^3}{\omega_1^3}$

Question Number : 109 Question Id : 8803969829 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which country is the largest producer of Iron ore in the world?

Options :

88039639313. ✖ India

88039639314. ✖ Australia

88039639315. ✔ China

88039639316. ✖ USA

Question Number : 110 Question Id : 8803969830 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

To deal with misfires, a relieving hole shall be placed at a minimum distance of **"A"** from misfired hole, the value of **"A"** is

Options :

88039639317. ✖ 10 cm

88039639318. ✖ 15 cm

88039639319. ✔ 30 cm

88039639320. ✖ 20 cm

Question Number : 111 Question Id : 8803969831 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When stemming is insufficient, then there is a chance of

Options :

88039639321. ✖ over breakage of coal

88039639322. ✔ excessive ground vibrations

88039639323. ✖ blown out shot

88039639324. ✖ high powder factor

Question Number : 112 Question Id : 8803969832 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Pre-silicatization is the process involved with

Options :

88039639325. ✖ piling method of shaft sinking

88039639326. ✔ cementation method of shaft sinking

88039639327. ✖ freezing method of shaft sinking

88039639328. ✖ pneumatic caisson method of shaft sinking

Question Number : 113 Question Id : 8803969833 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The following type of permanent shaft lining is used to withstand high strata and water pressure

Options :

88039639329. ✖ wooden lining / tubbing

88039639330. ✖ precast concrete blocks

88039639331. ✖ brick lining

88039639332. ✔ monolithic reinforced concrete lining

Question Number : 114 Question Id : 8803969834 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

India is deficient of the following ore/s

Options :

88039639333. ✖ Hematite

88039639334. ✖ Galena and sphalerite

88039639335. ✔ Copper ore

88039639336. ✖ Bauxite

Question Number : 115 Question Id : 8803969835 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Brown coal is also called as

Options :

88039639337. ✔ lignite

88039639338. ✖ peat

88039639339. ✖ bituminous

88039639340. ✖ sub-bituminous

Question Number : 116 Question Id : 8803969836 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In respect of geological faults, the vertical displacement of one of the fractured blocks with respect to the other fractured bed is called as

Options :

88039639341. ✖ heave

88039639342. ✖ hade

88039639343. ✔ throw

88039639344. ✖ fault plane

Question Number : 117 Question Id : 8803969837 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which country is the largest producer of gold in the world?

Options :

88039639345. ✖ USA

88039639346. ✖ Russia

88039639347. ✖ South Africa

88039639348. ✔ China

Question Number : 118 Question Id : 8803969838 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Deck loading is very useful when

Options :

88039639349. ✖ strata consists of soft rock

88039639350. ✖ strata consists of friable rocks

88039639351. ✔ strata consists of alternate bands of hard and softer rocks

88039639352. ✖ the strata is highly water bearing

Question Number : 119 Question Id : 8803969839 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The primary mineral used for making cement is

Options :

88039639353. ✖ sandstone

88039639354. ✔ limestone

88039639355. ✖ sand

88039639356. ✖ clay

Question Number : 120 Question Id : 8803969840 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Most of the Indian diamond mining is from

Options :

88039639357. ✖ Rakha area

88039639358. ✔ Panna area

88039639359. ✖ Hutti area

88039639360. ✖ Malanjkhand