

Question Paper Preview

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 :	Metallurgical Engineering 31st Aug 2020 Shift 2
Subject Name :	Metallurgical Engineering
Creation Date :	2020-09-01 11:53:56
Duration :	180
Total Marks :	200
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console? :	Yes

Metallurgical Engineering

Group Number :	1
Group Id :	76439056
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	200
Is this Group for Examiner? :	No

Mathematics

Section Id :	764390215
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	50
Number of Questions to be attempted :	50
Section Marks :	50
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes

Sub-Section Number : 1
Sub-Section Id : 764390245
Question Shuffling Allowed : Yes

Question Number : 1 Question Id : 76439011025 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 A, B be two distinct square matrices of same order such that $AB=A$, $BA=B$, then

Options :

76439044001. ✓ $A^2 = A, B^2 = B$

76439044002. ✗ $A^2 = A, B^2 \neq B$

76439044003. ✗ $A^2 \neq A, B^2 = B$

76439044004. ✗ $A^2 \neq A, B^2 \neq B$

Question Number : 2 Question Id : 76439011026 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 statements is not correct?

Options :

76439044005. ✗ Every square matrix can be expressed as a sum of a symmetric and a skew-symmetric matrices.

76439044006. ✗ If A is non singular matrix , then so is adj A

76439044007. ✗ If A , B , C are nxn matrices , then $(AB)C=A(BC)$

76439044008. ✓ Let O denote the nxn null matrix. If A,B are nxn matrices and $AB=O$, then $A=O$ or $B=O$

Question Number : 3 Question Id : 76439011027 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 A is a square matrix of order 4, then $|\text{adj}(\text{adj}A^2)| =$

Options :

76439044009. ✖ $|A|^3$

76439044010. ✖ $|A|^6$

76439044011. ✖ $|A|^{27}$

76439044012. ✔ $|A|^{18}$

Question Number : 4 Question Id : 76439011028 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 system of equations $x = cy + bz, y = az + cx, z = bx + ay$ has a non-zero solution,

then $a^2 + b^2 + c^2 + 2abc =$

Options :

76439044013. ✖ 0

76439044014. ✖ 2

76439044015. ✔ 1

76439044016. ✖ 3

Question Number : 5 Question Id : 76439011029 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 $\frac{x^2+x+1}{x^2+2x+1} = A + \frac{B}{x+1} + \frac{C}{(x+1)^2}$, then $(A,B,C) =$

Options :

76439044017. ✔ (1,-1,1)

76439044018. ✖ (1,-1,-1)

76439044019. ✖ (-1,1,-1)

76439044020. ✖ (-1,-1,-1)

Question Number : 6 Question Id : 76439011030 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, y, z are three distinct positive real numbers and $\frac{\log x}{y-z} = \frac{\log y}{z-x} = \frac{\log z}{x-y}$, then $xyz =$

Options :

76439044021. ✖ 0

76439044022. ✔ 1

76439044023. ✖ 2

76439044024. ✖ 3

Question Number : 7 Question Id : 76439011031 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 $\triangle ABC$, if $\cot \frac{A}{2} = \frac{b+c}{a}$, then $\angle A + \angle C =$

Options :

76439044025. ✖ 60°

76439044026. ✔ 90°

76439044027. ✖ 120°

76439044028. ✖ 150°

Question Number : 8 Question Id : 76439011032 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 $\triangle ABC$, if $\cot \frac{A}{2} : \cot \frac{B}{2} : \cot \frac{C}{2} = 3 : 5 : 7$, then $a : b : c =$

Options :

76439044029. ✖ 5:4:6

76439044030. ✔ 6:5:4

76439044031. ✖ 4:6:5

76439044032. ✖ 12:5:4

Question Number : 9 Question Id : 76439011033 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 $A-B = \frac{3\pi}{4}$, then $(1-\tan A)(1+\tan B) =$

Options :

76439044033. ✖ 0

76439044034. ✖ 1

76439044035. ✔ 2

76439044036. ✖ 3

Question Number : 10 Question Id : 76439011034 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

$\sqrt{3} \csc 20^\circ - \sec 20^\circ =$

Options :

76439044037. ✖ 1

76439044038. ✖ 2

76439044039. ✖ 3

76439044040. ✔ 4

Question Number : 11 Question Id : 76439011035 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

$\cos A \cos 2A \cos 4A \cos 8A =$

Options :

76439044041. ✔ $\frac{\sin 16A}{16 \sin A}$

76439044042. ✖ $\frac{\sin 32A}{32 \sin A}$

76439044043. ✖ $\frac{\sin 48A}{48 \sin A}$

76439044044. ✖ $\frac{\sin 64A}{64 \sin A}$

Question Number : 12 Question Id : 76439011036 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 general solution set of $\sin 2x + \sin 4x = 2 \sin 3x$ is

Options :

76439044045. ✔ $\left\{ \frac{n\pi}{3} / n \in \mathbb{Z} \right\}$

76439044046. ✖ $\{2n\pi / n \in \mathbb{Z}\}$

76439044047. ✖ $\{n\pi / n \in \mathbb{Z}\}$

76439044048. ✖ $\left\{ \frac{n\pi}{3} + 2n\pi / n \in \mathbb{Z} \right\}$

Question Number : 13 Question Id : 76439011037 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, y, z have same sign such that $xy + yz + zx < 1$ and $\tan^{-1} x + \tan^{-1} y + \tan^{-1} z = \pi$,

then $\frac{1}{xy} + \frac{1}{yz} + \frac{1}{zx} =$

Options :

76439044049. ✖ $\frac{1}{xyz}$

76439044050. ✔ 1

76439044051. ✖ xyz

76439044052. ✖ $\frac{1}{x^2y^2z^2}$

Question Number : 14 Question Id : 76439011038 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 $\sinh x = 5$, then $e^x =$

Options :

76439044053. ✖ $5 - \sqrt{26}$

76439044054. ✔ $5 + \sqrt{26}$

76439044055. ✖ $5 \pm \sqrt{26}$

76439044056. ✖ $\sqrt{26} - 5$

Question Number : 15 Question Id : 76439011039 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 α and β are two distinct complex numbers such that $\left| \frac{\beta - \alpha}{1 - \bar{\alpha}\beta} \right| = 1$, then

Options :

76439044057. ✖ $|\alpha| = 1$

76439044058. ✖ $|\beta| = 1$

76439044059. ✔ $|\alpha| = 1$ or $|\beta| = 1$

76439044060. ✖ $|\alpha| = 1$ and $|\beta| = 1$

Question Number : 16 Question Id : 76439011040 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 $\left(\frac{1+\sin\theta+i\cos\theta}{1+\sin\theta-i\cos\theta}\right)^n = \cos k\theta + i \sin k\theta$, then $k =$

Options :

76439044061. ✖ $\frac{n\pi}{2} - \theta$

76439044062. ✖ $\frac{n\pi}{2} - n\theta$

76439044063. ✖ $n\pi - n\theta$

76439044064. ✔ $\frac{1}{2\theta}(n\pi - 2n\theta)$

Question Number : 17 Question Id : 76439011041 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 perpendicular distance of the straight line $\frac{x}{a} + \frac{y}{b} = 1, a > 0, b > 0$ from the origin is p

then

Options :

76439044065. ✖ $\frac{1}{p^2} = \frac{1}{a^2} - \frac{1}{b^2}$

76439044066. ✖ $p^2 = b^2 - a^2$

76439044067. ✔ $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$

76439044068. ✖ $p^2 = a^2 + b^2$

Question Number : 18 Question Id : 76439011042 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 line $lx + my + n = 0$ is a normal to the circle $x^2 + y^2 - 4x - 6y + 11 = 0$ if

Options :

76439044069. ✔ $2l + 3m + n = 0$

76439044070. ✖ $2l + 3m - n = 0$

76439044071. ✖ $2l - 3m - n = 0$

76439044072. ✖ $2l - 3m + n = 0$

Question Number : 19 Question Id : 76439011043 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 centre of the circle passing through origin and (0,4) & (4,0) is

Options :

76439044073. ✖ (4,4)

76439044074. ✖ (4,2)

76439044075. ✖ (2,4)

76439044076. ✔ (2,2)

Question Number : 20 Question Id : 76439011044 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

$$\lim_{x \rightarrow \frac{\pi}{2}} \frac{e^{\cos x} - 1}{x - \frac{\pi}{2}} =$$

Options :

76439044077. ✖ 0

76439044078. ✖ 1

76439044079. ✔ -1

76439044080. ✖ $\pi/2$

Question Number : 21 Question Id : 76439011045 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 derivative of $\log_a x$, with respect to a^x is

Options :

76439044081. ✖ 1

76439044082. ✖ xa^x

76439044083. ✔ $\frac{1}{xa^x(\log a)^2}$

76439044084. ✖ $\frac{1}{xa^x}$

Question Number : 22 Question Id : 76439011046 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 $y = x + \tan x$, then $\cos^2 x \frac{d^2 y}{dx^2} + 2x =$

Options :

76439044085. ✖ $2y'$

76439044086. ✔ $2y$

76439044087. ✖ y'

76439044088. ✖ y

Question Number : 23 Question Id : 76439011047 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 set of all points at which the curve $y = \sin x$ has horizontal tangents are

Options :

76439044089. ✔ $\left((2n+1)\frac{\pi}{2}, (-1)^n \right) n \in \mathbb{Z}$

76439044090. ✖ $(n\pi, (-1)^n) \quad n \in \mathbb{Z}$

76439044091. ✖ $(n\frac{\pi}{2}, (-1)^n) \quad n \in \mathbb{Z}$

76439044092. ✖ $((2n+1)\pi, (-1)^n) \quad n \in \mathbb{Z}$

Question Number : 24 Question Id : 76439011048 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 interval in which $f(x) = x^x, (x > 0)$ is increasing is

Options :

76439044093. ✖ $(0, \frac{1}{e})$

76439044094. ✖ $(0, e)$

76439044095. ✖ (e, ∞)

76439044096. ✔ $(\frac{1}{e}, \infty)$

Question Number : 25 Question Id : 76439011049 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 extreme values of $f(x) = 4x - \frac{x^2}{2}$ on $[-2, \frac{9}{2}]$ are

Options :

76439044097. ✔ absolute minimum = -10; absolute maximum = 8

76439044098. ✖ absolute minimum = 8; absolute maximum = 12

76439044099. ✖ absolute minimum = -10; absolute maximum = 12

76439044100. ✖ absolute minimum = -2; absolute maximum = 9/2

Question Number : 26 Question Id : 76439011050 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 $\sin u = \frac{x+y}{\sqrt{x}+\sqrt{y}}$, then $2\left(x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y}\right)\cos u =$

Options :

76439044101. ✔ $\sin u$

76439044102. ✖ $\frac{1}{2}\sin u$

76439044103. ✖ $\tan u$

76439044104. ✖ $\sin 2u$

Question Number : 27 Question Id : 76439011051 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

$\int \frac{\sin 2x}{(\sin 5x)(\sin 3x)} dx =$

Options :

76439044105. ✖ $\log|\sin 3x| - \log|\sin 5x| + C$

76439044106. ✖ $\frac{1}{3}\log|\sin 3x| + \frac{1}{5}\log|\sin 5x| + C$

76439044107. ✔ $\frac{1}{3}\log|\sin 3x| - \frac{1}{5}\log|\sin 5x| + C$

$$3 \log |\sin 3x| - 5 \log |\sin 5x| + C$$

76439044108. ✖

Question Number : 28 Question Id : 76439011052 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

$$\int x(\sin x)(\sec^3 x) dx =$$

Options :

$$\frac{1}{2} [\sec^2 x - \tan x] + C$$

76439044109. ✖

$$\frac{1}{2} [x \sec^2 x - \tan x] + C$$

76439044110. ✔

$$\frac{1}{2} [x \sec^2 x + \tan x] + C$$

76439044111. ✖

$$\frac{1}{2} [\sec^2 x + \tan x] + C$$

76439044112. ✖

Question Number : 29 Question Id : 76439011053 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

$$\int \sqrt{e^x - 1} dx =$$

Options :

$$2[\sqrt{e^x - 1} - \tan^{-1} \sqrt{e^x - 1}] + C$$

76439044113. ✔

$$\sqrt{e^x - 1} - \tan^{-1} \sqrt{e^x - 1} + C$$

76439044114. ✖

$$\sqrt{e^x - 1} + \tan^{-1} \sqrt{e^x - 1} + C$$

76439044115. ✖

$$2[\sqrt{e^x - 1} + \tan^{-1}\sqrt{e^x - 1}] + C$$

76439044116. ✖

Question Number : 30 Question Id : 76439011054 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

$$\int \frac{\ln(\tan x)}{\sin x \cos x} dx =$$

Options :

76439044117. ✖ $\frac{1}{2} \ln(\tan x) + C$

76439044118. ✖ $\frac{1}{2} \ln(\tan^2 x) + C$

76439044119. ✔ $\frac{1}{2} [\ln(\tan x)]^2 + C$

76439044120. ✖ 0

Question Number : 31 Question Id : 76439011055 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 area of the region (in square units) bounded by the parabola $y = x^2 + 1$ and the straight-line $x + y = 3$ is

Options :

76439044121. ✔ $\frac{9}{2}$

76439044122. ✖ 3

76439044123. ✖ $\frac{9}{4}$

76439044124. ✖ 0

Question Number : 32 Question Id : 76439011056 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 values of a function f at different points are given in the following table.

x	-4	-3	-2	-1	0	1	2
$f(x)$	0	4	5	3	10	11	2

The approximate value of $\int_{-4}^2 f(x)dx$ is

Options :

76439044125. ✖ 32

76439044126. ✔ 34

76439044127. ✖ 26

76439044128. ✖ 40

Question Number : 33 Question Id : 76439011057 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 degree of the differential equation $(1+x^2) \left(\frac{dy}{dx}\right)^2 - 2xy \frac{dy}{dx} + (1+y^2) = 0$ is

Options :

76439044129. ✖ 1

76439044130. ✔ 2

76439044131. ✖ 3

76439044132. ✖ 0

Question Number : 34 Question Id : 76439011058 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

Solution of $\frac{dy}{dx} + \frac{1+y^2}{1+x^2} = 0$ is

Options :

$$\sin^{-1} x + \sin^{-1} y = C$$

76439044133. ✖

$$\tan^{-1} x - \tan^{-1} y = C$$

76439044134. ✖

$$\tan^{-1} x + \tan^{-1} y = C$$

76439044135. ✔

$$\sin^{-1} x - \sin^{-1} y = C$$

76439044136. ✖

Question Number : 35 Question Id : 76439011059 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

Solution of $(1+x^2) \frac{dy}{dx} + 2xy = \cos x$ is

Options :

$$(1+x^2)y + \sin x = C$$

76439044137. ✖

$$(1+x^2)y = \cos x + C$$

76439044138. ✖

$$(1+x^2)y = \sin x + C$$

76439044139. ✔

$$(1+x^2)y + \cos x = C$$

76439044140. ✖

Question Number : 36 Question Id : 76439011060 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 particular integral of $(D^2 - 1) = \cosh x$

Options :

$$\frac{x}{2} \sinh x$$

76439044141. ✔

$$\frac{x}{2} \cosh x$$

76439044142. ✖

76439044143. ✖ $\sinh x$

76439044144. ✖ $\cosh x$

Question Number : 37 Question Id : 76439011061 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 particular integral of $(D^3 + 4D)y = \sin 2x$ is

Options :

76439044145. ✖ $\frac{x \sin 2x}{2}$

76439044146. ✖ $\frac{x \sin 2x}{4}$

76439044147. ✖ $\frac{x \sin 2x}{8}$

76439044148. ✔ $\frac{-x \sin 2x}{8}$

Question Number : 38 Question Id : 76439011062 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 particular integral of $(D^2 - 2D + 4)y = x^2$ is

Options :

76439044149. ✖ $\frac{1}{4}(x^2 - x)$

76439044150. ✔ $\frac{1}{4}(x^2 + x)$

76439044151. ✖ $\frac{1}{4}(x^2 + x + 1)$

76439044152. ✖ $\frac{1}{4}(x^2 + x - 1)$

Question Number : 39 Question Id : 76439011063 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 particular integral of $(D^2 - 4)y = \cos^2 x$ is

Options :

76439044153. ✓ $\frac{-1}{8} - \frac{\cos 2x}{16}$

76439044154. ✘ $\frac{1}{8} - \frac{\cos 2x}{16}$

76439044155. ✘ $\frac{-1}{8} + \frac{\cos 2x}{16}$

76439044156. ✘ $\frac{1}{8} - \frac{\cos 2x}{16}$

Question Number : 40 Question Id : 76439011064 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

Complementary function of $(D^3 - D^2 + D - 1)y = 0$ is

Options :

76439044157. ✘ $y_c = c_1 e^{-x} + c_2 \cos x + c_3 \sin x$

76439044158. ✘ $y_c = c_1 \cos x + c_2 \sin x$

76439044159. ✓ $y_c = c_1 e^x + c_2 \cos x + c_3 \sin x$

76439044160. ✘ $y_c = c_1 e^{2x} + c_2 \cos 2x + c_3 \sin 2x$

Question Number : 41 Question Id : 76439011065 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 differential equation formed by eliminating the constants a and b in

$y = ae^{bx}$ is

Options :

76439044161. ✖ $y \frac{d^2 y}{dx^2} = \frac{dy}{dx}$

76439044162. ✖ $y \left(\frac{d^2 y}{dx^2} \right)^2 = \left(\frac{dy}{dx} \right)^2$

76439044163. ✖ $y \frac{dy}{dx} = \left(\frac{d^2 y}{dx^2} \right)^2$

76439044164. ✔ $y \frac{d^2 y}{dx^2} = \left(\frac{dy}{dx} \right)^2$

Question Number : 42 Question Id : 76439011066 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

Solution of the differential equation $x \frac{dy}{dx} = y (\log y - \log x + 1)$ is

Options :

76439044165. ✔ $y = xe^{cx}$

76439044166. ✖ $y = x^2 e^{cx}$

76439044167. ✖ $x = ye^{cy}$

76439044168. ✖ $x = y^2 e^{cy}$

Question Number : 43 Question Id : 76439011067 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 $F(s)$ denotes the Laplace transform of $t \sin t$, then $F(2) =$

Options :

76439044169. ✓ 4/25

76439044170. ✗ -4/25

76439044171. ✗ 4/5

76439044172. ✗ -4/5

Question Number : 44 Question Id : 76439011068 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 $F(s)$ denotes the Laplace transform of $\frac{\sin t}{t}$, then $F(1) =$

Options :

76439044173. ✗ $\pi/2$

76439044174. ✓ $\pi/4$

76439044175. ✗ $-\pi/2$

76439044176. ✗ $-\pi/4$

Question Number : 45 Question Id : 76439011069 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 $F(s)$ denotes the Laplace transform of $e^{-t} \sin t$, then $\lim_{s \rightarrow 0} F(s) =$

Options :

76439044177. ✗ 0

76439044178. ✗ 2

76439044179. ✓ 1/2

76439044180. ✖ -1/2

Question Number : 46 Question Id : 76439011070 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 $f(t)$ denotes the inverse Laplace transform of $\left[\frac{s+2}{(s+1)(s-2)} \right]$, then $\lim_{t \rightarrow 0} f(t) =$

Options :

76439044181. ✖ -1

76439044182. ✖ 0

76439044183. ✖ 1/2

76439044184. ✔ 1

Question Number : 47 Question Id : 76439011071 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 inverse Laplace transform of $\log \frac{s+1}{s-1}$ is

Options :

76439044185. ✖ $\frac{e^t + e^{-t}}{t}$

76439044186. ✖ $\frac{-e^t - e^{-t}}{t}$

76439044187. ✖ $\frac{e^{-t} - e^t}{t}$

76439044188. ✔ $\frac{e^t - e^{-t}}{t}$

Question Number : 48 Question Id : 76439011072 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 inverse Laplace Transform of $\frac{1}{s^2(s+5)}$ is

Options :

76439044189. ✖ $t * t * e^t$

76439044190. ✔ $1 * 1 * e^{-5t}$

76439044191. ✖ $\int_0^t (1 - e^{-5\sigma}) d\sigma$

76439044192. ✖ $\int_0^t \left(\int_0^\sigma e^{-5\tau} d\tau \right) d\sigma$

Question Number : 49 Question Id : 76439011073 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

Assertion (A): $\frac{1}{1^2} + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \dots = \frac{\pi^2}{12}$

Reason (R): The Fourier series to represent $x - x^2$ from $x = -\pi$ to $x = \pi$ is

$$-\frac{\pi^2}{3} + 4 \left[\frac{\cos x}{1^2} - \frac{\cos 2x}{2^2} + \frac{\cos 3x}{3^2} - \dots \right] + 2 \left[\frac{\sin x}{1} - \frac{\sin 2x}{2} + \frac{\sin 3x}{3} - \dots \right]$$

Options :

76439044193. ✖ Both A and (R) are true and (R) is correct explanation of (A)

76439044194. ✔ Both A and (R) are true but (R) is not correct explanation of (A)

76439044195. ✖ Statement (A) is true , Statement (R) is false

76439044196. ✖ Statement (A) is false , Statement (R) is true

Question Number : 50 Question Id : 76439011074 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 coefficient of $\cos x$ in the Fourier expansion of $f(x) = |\cos x|$, $x \in [-\pi, \pi]$ is

Options :

76439044197. ✖ $4/\pi$

76439044198. ✖ $-4/\pi$

76439044199. ✖ $2/\pi$

76439044200. ✔ 0

Physics

Section Id :	764390216
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	764390246
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 76439011075 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

ML^2T^{-3} is the dimensional formula of

Options :

76439044201. ✖ Energy

76439044202. ✖ Force

76439044203. ✔ Power

76439044204. ✖ Density

Question Number : 52 Question Id : 76439011076 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

Distance 'd' covered by a particle in time 't' is given by

$$d = xt + yt^2 + zt^3$$

The dimensions of x, y, z are

Options :

76439044205. ✖ $x=L, y=L, z=LT^{-1}$

76439044206. ✖ $x=L, y=LT^{-1}, z=LT^{-2}$

76439044207. ✖ $x=L, y=LT^2, z=LT^3$

76439044208. ✔ $x=LT^{-1}, y=LT^{-2}, z=LT^{-3}$

Question Number : 53 Question Id : 76439011077 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 work function of Al, K and Pt is 4.38 eV, 2.36 eV and 5.60 eV respectively. Their respective threshold frequencies would be

Options :

76439044209. ✖ Al>Pt>K

76439044210. ✖ K>Al>Pt

76439044211. ✖ Al>K>Pt

76439044212. ✔ Pt>Al>K

Question Number : 54 Question Id : 76439011078 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 critical angle of a denser medium of refraction index $\sqrt{2}$ is

Options :

76439044213. ✖ 60°

76439044214. ✔ 45°

76439044215. ✖ 30°

76439044216. ✖ 0°

Question Number : 55 Question Id : 76439011079 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

During an adiabatic operation the pressure and density (P_1, d_1) of a diatomic gas change to ($P_2,$

d_2), if $\frac{d_2}{d_1} = 243$, then $\frac{P_2}{P_1}$ is ($\gamma = \frac{7}{5}$)

Options :

76439044217. ✔ 2187

76439044218. ✖ 3187

76439044219. ✖ 4187

76439044220. ✖ 1187

Question Number : 56 Question Id : 76439011080 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 gas is heated through 1° C in a closed vessel. Its pressure is increased by 0.4%. The initial temperature of the gas is

Options :

76439044221. ✖ 23° C

76439044222. ✔ -23° C

76439044223. ✖ 33° C

76439044224. ✖ -33° C

Question Number : 57 Question Id : 76439011081 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

Find the cross product of the two vectors $2\mathbf{i} + 3\mathbf{j} + \mathbf{k}$ and $3\mathbf{i} + 2\mathbf{j} + \mathbf{k}$.

Options :

76439044225. ✔ $\mathbf{i} + \mathbf{j} - 5\mathbf{k}$

76439044226. ✖ $2\mathbf{i} + 3\mathbf{j} + \mathbf{k}$

76439044227. ✖ $\mathbf{i} + 2\mathbf{j} + \mathbf{k}$

76439044228. ✖ $2\mathbf{i} - \mathbf{j} - 5\mathbf{k}$

Question Number : 58 Question Id : 76439011082 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

Find the angle between two vectors $\vec{A} = 2\mathbf{i} + \mathbf{j} - \mathbf{k}$ and $\vec{B} = \mathbf{i} - \mathbf{k}$

Options :

76439044229. ✖ 90°

76439044230. ✖ 45°

76439044231. ✖ 60°

76439044232. ✔ 30°

Question Number : 59 Question Id : 76439011083 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 car moving on a straight road accelerates from a speed of 4.1 m/s to a speed of 6.9 m/s in

5.0 s. What was its average acceleration?

Options :

76439044233. ✖ 5.6 m/s^2

76439044234. ✖ 1.2 m/s^2

76439044235. ✔ 0.56 m/s^2

76439044236. ✖ 1.56 m/s^2

Question Number : 60 Question Id : 76439011084 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 projected with an initial velocity 40 m/s at 60° to the horizontal. Find its initial velocity vector (given $g=10\text{m/s}^2$).

Options :

76439044237. ✖ $20\mathbf{i} - 20\mathbf{j}$

76439044238. ✔ $20\mathbf{i} + 20\sqrt{3}\mathbf{j}$

76439044239. ✖ $20\sqrt{3}\mathbf{i} + 20\mathbf{j}$

76439044240. ✖ $10\mathbf{i} + 10\sqrt{3}\mathbf{j}$

Question Number : 61 Question Id : 76439011085 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 bomb is dropped from an aircraft travelling horizontally at 150 ms^{-1} at a height of 490 m . The horizontal distance travelled by the bomb before it hits the ground is

Options :

76439044241. ✖ 1800 m

76439044242. ✔ 1500 m

76439044243. ✖ 1200 m

76439044244. ✖ 1000 m

Question Number : 62 Question Id : 76439011086 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

Find the force required to move a body of mass 5 kg on a rough surface with a uniform velocity. If the coefficient of friction is 0.4

Options :

76439044245. ✖ 15N

76439044246. ✖ 16.5 N

76439044247. ✖ 18 N

76439044248. ✔ 19.6 N

Question Number : 63 Question Id : 76439011087 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 of mass 20 kg moving with a velocity of 4m/s on a horizontal rough surface stops after covering a distance 5 m, the coefficient of friction is

Options :

76439044249. ✔ 0.16

76439044250. ✖ 0.32

76439044251. ✖ 1.6

76439044252. ✖ 3.2

Question Number : 64 Question Id : 76439011088 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 machine gun fires 240 bullets per minute with a velocity of 500 m/s. If the mass of each of the bullet is 5×10^{-2} kg. then the power of the gun is

Options :

76439044253. ✖ 30,000 watts

76439044254. ✖ 20,000 watts

76439044255. ✔ 25,000 watts

76439044256. ✖ 35,000 watts

Question Number : 65 Question Id : 76439011089 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 of mass 200 kg is moving on a horizontal plane with an acceleration 2 m/s^2 , what is the work done in moving the body through a distance of 50 m.

Options :

76439044257. ✖ $3 \times 10^4 \text{ J}$

76439044258. ✔ $2 \times 10^4 \text{ J}$

76439044259. ✖ $4 \times 10^4 \text{ J}$

76439044260. ✖ $1 \times 10^4 \text{ J}$

Question Number : 66 Question Id : 76439011090 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

Find the kinetic energy of a bullet of mas 0.05 kg. if it moves with a velocity of 100 m/s.

Options :

76439044261. ✖ 120 J

76439044262. ✖ 200 J

76439044263. ✓ 250 J

76439044264. ✗ 150 J

Question Number : 67 Question Id : 76439011091 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 particle is executing SHM with an amplitude of 0.2m. At what distance from the mean position the potential energy of the particle will be equal to its kinetic energy

Options :

76439044265. ✗ ± 0.34 meters

76439044266. ✗ ± 0.24 meters

76439044267. ✓ ± 0.1414 meters

76439044268. ✗ ± 0.521 meters

Question Number : 68 Question Id : 76439011092 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 seconds pendulum oscillates with an amplitude of 0.4m. If the mass of the pendulum is 0.2 kg. Then kinetic energy of the pendulum at mean position

Options :

76439044269. ✓ 0.157 J

76439044270. ✗ 2.15 J

76439044271. ✗ 1.5 J

76439044272. ✗ 3 J

Question Number : 69 Question Id : 76439011093 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

Velocity of sound wave in air at 0°C is

Options :

76439044273. ✖ 350 m/s

76439044274. ✔ 330 m/s

76439044275. ✖ 360 m/s

76439044276. ✖ 380 m/s

Question Number : 70 Question Id : 76439011094 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 distance to hear an echo at 0°C is

Options :

76439044277. ✖ 15 meters

76439044278. ✔ 16.5 meters

76439044279. ✖ 17 meters

76439044280. ✖ 14 meters

Question Number : 71 Question Id : 76439011095 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

Read the following statements about the viscosity, then choose the correct option

A: The viscosity of liquids increases as the temperature increases

B: The viscosity of gases increases as the temperature increases

Options :

76439044281. ✖ Only A is correct

76439044282. ✖ Only B is correct

76439044283. ✓ Both A and B are correct

76439044284. ✘ Both A and B are not correct

Question Number : 72 Question Id : 76439011096 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 Copper wire of length 2m is stretched by 2cm then find then the strain on the wire

Options :

76439044285. ✘ 0.02

76439044286. ✘ 0.2

76439044287. ✘ 0.1

76439044288. ✓ 0.01

Question Number : 73 Question Id : 76439011097 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

Choose the correct expression for ohm's law

Options :

76439044289. ✓ $I = \frac{V}{R}$

76439044290. ✘ $I = \frac{R}{V}$

76439044291. ✘ $V = \frac{R}{I}$

76439044292. ✘ $V = \frac{I}{R}$

Question Number : 74 Question Id : 76439011098 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

1A, 2A and 3A currents are flowing a junction then find out how much current will flow out from that junction

Options :

76439044293. ✓ 6A

76439044294. ✗ 3A

76439044295. ✗ 2A

76439044296. ✗ 1A

Question Number : 75 Question Id : 76439011099 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

Read the following statements about magnetism,

A: The two poles of a magnet will have equal pole strength

B: Like poles of magnet will attract each other

C: Magnetic poles can be isolated from each other

D: The magnetism in the middle of a bar magnet is minimum

Choose the correct option from the following:

Options :

76439044297. ✗ A and B are correct

76439044298. ✗ A, B and C are correct

76439044299. ✗ A, B, C and D are correct

76439044300. ✓ A and D are correct

Chemistry

Section Id :

764390217

Section Number :

3

Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	25
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	764390247
Question Shuffling Allowed :	Yes

Question Number : 76 Question Id : 76439011100 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 electronic configuration of Na^+

Options :

76439044301. ✘ $1S^22S^22P^63S^1$

76439044302. ✘ $1S^22S^22P^63S^2$

76439044303. ✔ $1S^22S^22P^63S^0$

76439044304. ✘ $1S^22S^22P^63S^23P^1$

Question Number : 77 Question Id : 76439011101 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

Number of sigma (σ) and Pi (π) bonds present in Nitrogen molecule

Options :

76439044305. ✘ $1\sigma,1\pi$

76439044306. ✘ $2\sigma,1\pi$

76439044307. ✘ $2\sigma,2\pi$

76439044308. ✔ $1\sigma,2\pi$

Question Number : 78 Question Id : 76439011102 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 oxidation numbers of Mn in KMnO_4

Options :

76439044309. ✓ +7

76439044310. ✗ +6

76439044311. ✗ -7

76439044312. ✗ -6

Question Number : 79 Question Id : 76439011103 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

Find the molarity of the solution which contain 20 g of sodium hydroxide (NaOH) in 100 ml solution

Options :

76439044313. ✓ 5 M

76439044314. ✗ 2 M

76439044315. ✗ 1 M

76439044316. ✗ 0.5 M

Question Number : 80 Question Id : 76439011104 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

Equivalent weight of sulphuric acid (H_2SO_4) is

Options :

76439044317. ✗ 98 g

76439044318. ✓ 49 g

76439044319. ✖ 2 g

76439044320. ✖ 100 g

Question Number : 81 Question Id : 76439011105 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 buffer solution?

Options :

76439044321. ✖ $\text{CHCOOH} + \text{CH}_3\text{COONa}$

76439044322. ✖ $\text{NH}_4\text{Cl} + \text{NH}_4\text{OH}$

76439044323. ✔ $\text{NaOH} + \text{NaCl}$

76439044324. ✖ $\text{CH}_3\text{COOH} + \text{CH}_3\text{COOK}$

Question Number : 82 Question Id : 76439011106 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

Statement a: Ionic Product of water is 1×10^{-14}

Statement b: pH value of neutral Solution is 7

Options :

76439044325. ✖ Both the statements are incorrect

76439044326. ✔ Both the statements are correct

76439044327. ✖ Statement 'a' is correct, 'b' is incorrect

76439044328. ✖ Statement 'a' is incorrect, 'b' is correct

Question Number : 83 Question Id : 76439011107 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 pH of 10^{-3} M HCl Solution?

Options :

76439044329. ✓ 3

76439044330. ✗ 10

76439044331. ✗ 10^{-3}

76439044332. ✗ -3

Question Number : 84 Question Id : 76439011108 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

Statement a: flux +slag = gangue

Statement b: flux + gangue = slag

Options :

76439044333. ✗ Both the statements are incorrect

76439044334. ✗ Both the statements are correct

76439044335. ✗ Statement 'a' is correct, 'b' is incorrect

76439044336. ✓ Statement 'a' is incorrect, 'b' is correct

Question Number : 85 Question Id : 76439011109 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

Composition of brass alloy is

Options :

76439044337. ✗ Ni-60%, Al-40%

76439044338. ✗ Cu- 60%, Ni -40%

76439044339. ✓ Cu- 60%, Zn- 40%

76439044340. ✖ Cu- 40%, Zn- 60%

Question Number : 86 Question Id : 76439011110 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 EMF of the following cell $\text{Pt, H}_2(\text{g}) | \text{HCl}(\text{sol}) || \text{AgCl}(\text{s}) | \text{Ag}(\text{s})$ is

(given that $E_{\text{AgCl}/\text{Ag}}^{\circ} = +0.222\text{v}$)

Options :

76439044341. ✔ + 0.222 v

76439044342. ✖ -0.222 v

76439044343. ✖ +0.44 v

76439044344. ✖ -0.44 v

Question Number : 87 Question Id : 76439011111 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

Standard reduction potential of Zn is

Options :

76439044345. ✔ -0.76 v

76439044346. ✖ +0.76 v

76439044347. ✖ +0.44 v

76439044348. ✖ + 0.642 v

Question Number : 88 Question Id : 76439011112 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 a primary factor influencing on rate of corrosion

Options :

76439044349. ✖ pH

76439044350. ✖ Temperature

76439044351. ✖ Polarization of electrode

76439044352. ✔ Nature of the metal

Question Number : 89 Question Id : 76439011113 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

Formation of rust on iron is an example of

Options :

76439044353. ✖ Chemical corrosion

76439044354. ✔ Electrochemical corrosion

76439044355. ✖ Liquid metal corrosion

76439044356. ✖ Galvanic corrosion

Question Number : 90 Question Id : 76439011114 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

Impressed voltage method is an example of

Options :

76439044357. ✔ Cathodic protection

76439044358. ✖ Anodic protection

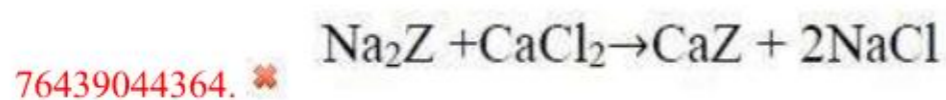
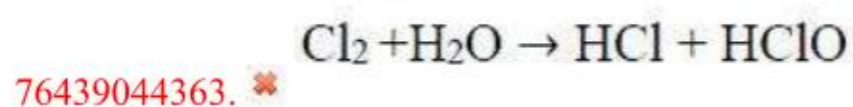
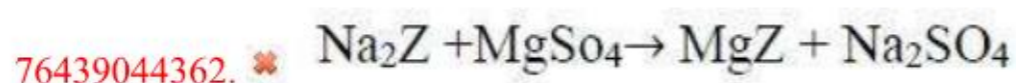
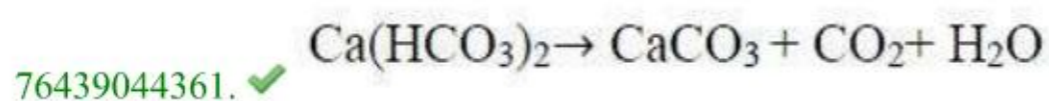
76439044359. ✖ Metal coating

76439044360. ✖ Organic coating

Question Number : 91 Question Id : 76439011115 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

Indicate the right chemical equation for the removal of temporary hardness of water?

Options :



Question Number : 92 Question Id : 76439011116 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

Indicate the hardness of water in degree French and degree Clark when the degree of hardness of water is 250 ppm?

Options :

76439044365. ✗ 250° Fr & 19.5° Clark

76439044366. ✗ 20.5° Fr & 14.7° Clark

76439044367. ✓ 25° Fr & 17.5° Clark

76439044368. ✗ 20.5° Fr & 17.5° Clark

Question Number : 93 Question Id : 76439011117 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 hardness of a sample of water in ppm (in equivalents of CaCO_3) which contains 29.2 mg of $\text{Mg}(\text{HCO}_3)_2$ per litre

Options :

76439044369. ✗ 30 mg

19 mg
76439044370. ✖

25 mg
76439044371. ✖

20 mg
76439044372. ✔

Question Number : 94 Question Id : 76439011118 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 statements is false?

Options :

76439044373. ✖

In addition polymerisation, polymer molecular weight rises steadily through the reaction

Addition polymerisation requires the presence of double bond in monomer
76439044374. ✖

In addition polymerisation, growth of chain is at one active centre
76439044375. ✔

No by-product is formed in addition polymerisation
76439044376. ✖

Question Number : 95 Question Id : 76439011119 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 catalyst is used in the preparation of Bakelite

Options :

Benzoyl peroxide
76439044377. ✖

Isobutylene with TiCl_4
76439044378. ✖

Acidic /Alkaline
76439044379. ✔

Metal Chloride
76439044380. ✖

Question Number : 96 Question Id : 76439011120 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 rubber is used for preparing gloves and aprons?

Options :

76439044381. ✘ Buna-S rubber

76439044382. ✔ Neoprene rubber

76439044383. ✘ Butyl rubber

76439044384. ✘ Silicone rubber

Question Number : 97 Question Id : 76439011121 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 character of a good fuel?

Options :

76439044385. ✘ The fuel must burn with a moderate velocity

76439044386. ✔ It should possess low ignition temperature

76439044387. ✘ It should have the highest pyrometric effect

76439044388. ✘ It should possess high calorific value

Question Number : 98 Question Id : 76439011122 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 and choose the right answer

- | | |
|----------------|---|
| 1. Atmosphere | A. It covers sea, rivers, oceans, lakes |
| 2. Hydrosphere | B. It contains life saving oxygen |
| 3. Lithosphere | C. The domain of living organism |
| 4. Biosphere | D. The solid component of the earth |

Choose the correct option from the following:

Options :

76439044389. ✘ 1-B, 2-D, 3-A, 4-C

76439044390. ✔ 1-B, 2-A, 3-D, 4-C

76439044391. ✘ 1-D, 2-A, 3-B, 4-C

76439044392. ✘ 1-B, 2-C, 3-D, 4-A

Question Number : 99 Question Id : 76439011123 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 permissible level of a poisonous pollutant in atmosphere is known as

Options :

76439044393. ✘ Gaseous Pollutant

76439044394. ✘ Aerosol pollutant

76439044395. ✔ Threshold limit value

76439044396. ✘ Biological contaminant

Question Number : 100 Question Id : 76439011124 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 pollutants form smog that limits the visibility of roads?

Options :

76439044397. ✘ Carbon monoxide and hydrocarbons

76439044398. ✘ Sulphur oxides and hydrocarbons

76439044399. ✘ Peroxy acetyl nitrates

76439044400. ✔ Nitrogen oxides and hydrocarbons

Metallurgical Engineering

Section Id :	764390218
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	764390248
Question Shuffling Allowed :	Yes

Question Number : 101 Question Id : 76439011125 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 coarse reduction of hard solids _____ is used

Options :

76439044401. ✖ Impact

76439044402. ✖ Bonding

76439044403. ✔ Compression

76439044404. ✖ Cutting

Question Number : 102 Question Id : 76439011126 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 the hardest material for sampling

Options :

76439044405. ✖ Calcite

76439044406. ✖ Quartz

76439044407. ✔ Corundum

76439044408. ✖ Gypsum

Question Number : 103 Question Id : 76439011127 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 Ball mill, the reduction of feed size is done mainly by

Options :

76439044409. ✘ Cutting

76439044410. ✘ Slow compression

76439044411. ✘ Adhesion

76439044412. ✔ Impact

Question Number : 104 Question Id : 76439011128 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

Size measurement of ultrafine particle can be best expressed in terms of

Options :

76439044413. ✘ Centimetre

76439044414. ✘ Screen size

76439044415. ✘ Micron

76439044416. ✔ Surface area per unit mass

Question Number : 105 Question Id : 76439011129 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

Operating speed of trommels is about _____ times the critical speed.

Options :

76439044417. ✘ 0.1

76439044418. ✔ 0.45

76439044419. ✖ 1.5

76439044420. ✖ 0.9

Question Number : 106 Question Id : 76439011130 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 metallic ores are subjected to physical methods to remove gangue particles before smelting in order to

Options :

76439044421. ✖ Get high impurity metals

76439044422. ✖ Reduce the cost of metal extraction

76439044423. ✖ Get metals with good workability

76439044424. ✔ Get high quality metals

Question Number : 107 Question Id : 76439011131 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

Leaching of ore is done in ____ method of metal extraction

Options :

76439044425. ✖ Pyrometallurgical

76439044426. ✔ Hydrometallurgical

76439044427. ✖ Distillation

76439044428. ✖ Electrometallurgical

Question Number : 108 Question Id : 76439011132 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 commercially used mineral for extraction of copper

Options :

76439044429. ✖ Cuprite

76439044430. ✖ Azurite

76439044431. ✔ Chalcopyrite

76439044432. ✖ Malacite

Question Number : 109 Question Id : 76439011133 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 having high _____ content would ignite most easily

Options :

76439044433. ✖ Fixed carbon

76439044434. ✔ Volatile matter

76439044435. ✖ Ash

76439044436. ✖ Oxygen

Question Number : 110 Question Id : 76439011134 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

Calorific value of coke oven gas is about ___ K.cal / Nm³

Options :

76439044437. ✖ 900

76439044438. ✔ 4200

76439044439. ✖ 1900

76439044440. ✖ 7500

Question Number : 111 Question Id : 76439011135 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

_____ is a measure of the deformation behavior of refractory bricks subjected to constant load and increasing temperature

Options :

76439044441. ✘ Tensile test

76439044442. ✘ Permeability

76439044443. ✔ Refractoriness under load

76439044444. ✘ Hardness

Question Number : 112 Question Id : 76439011136 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 has the least percentage of ash

Options :

76439044445. ✔ Petroleum coke

76439044446. ✘ Beehive coke

76439044447. ✘ Foundry coke

76439044448. ✘ Metallurgical coke

Question Number : 113 Question Id : 76439011137 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 constituent of coal is the most important in the production of coke

Options :

76439044449. ✘ Moisture

76439044450. ✖ Ash

76439044451. ✖ Volatiles

76439044452. ✔ Carbon

Question Number : 114 Question Id : 76439011138 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

Permeability of refractory bricks is a measure of the

Options :

76439044453. ✖ Refractoriness

76439044454. ✖ Melting point

76439044455. ✔ Rate at which a fluid will pass through the pores

76439044456. ✖ Expansion during heating

Question Number : 115 Question Id : 76439011139 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

Pyrometers are used to measure _____

Options :

76439044457. ✖ Resistance

76439044458. ✔ Temperature

76439044459. ✖ Swelling index

76439044460. ✖ Refractive index

Question Number : 116 Question Id : 76439011140 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 unit of heat transfer co-efficient is

Options :

76439044461. ✓ Kcal/hr.m².°C

76439044462. ✘ Kcal/hr.m.°C

76439044463. ✘ Kcal/hr.°C

76439044464. ✘ Kcal/hr

Question Number : 117 Question Id : 76439011141 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 a thermodynamic property of a system

Options :

76439044465. ✘ Concentration

76439044466. ✘ Mass

76439044467. ✘ Temperature

76439044468. ✓ Entropy

Question Number : 118 Question Id : 76439011142 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

First law of thermodynamics deals with

Options :

76439044469. ✓ Direction of energy transfer

76439044470. ✘ Reversible process only

76439044471. ✘ Irreversible process only

76439044472. ✘ Direction of heat transfer

Question Number : 119 Question Id : 76439011143 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

Second law of thermodynamics is concerned with

Options :

76439044473. ✘ Amount of energy transferred

76439044474. ✔ Direction of energy transferred

76439044475. ✘ Irreversible process only

76439044476. ✘ Non-Cyclic processes only

Question Number : 120 Question Id : 76439011144 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

Entropy is a measure of _____ of a system

Options :

76439044477. ✔ Disorder behaviour

76439044478. ✘ Orderly behaviour

76439044479. ✘ Only temperature changes

76439044480. ✘ Only pressure changes

Question Number : 121 Question Id : 76439011145 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

Fugacity and Pressure are numerically equal when the gas is

Options :

76439044481. ✘ In standard state

76439044482. ✘ At high pressure

76439044483. ✘ At low temperature

76439044484. ✓ In ideal state

Question Number : 122 Question Id : 76439011146 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

Equilibrium constant of a reaction varies with

Options :

Initial concentration of the reactant

76439044485. ✗

Pressure

76439044486. ✗

Temperature

76439044487. ✓

Volume

76439044488. ✗

Question Number : 123 Question Id : 76439011147 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

Rate of chemical reaction is independent of the concentration of reactants for _____
reaction

Options :

Zero order

76439044489. ✓

Third order

76439044490. ✗

Consecutive order

76439044491. ✗

First order

76439044492. ✗

Question Number : 124 Question Id : 76439011148 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

Chemical kinetic can predict the _____ of the reaction

Options :

Feasibility

76439044493. ✗

76439044494. ✓ Rate

76439044495. ✗ Possibility

76439044496. ✗ Molecularity

Question Number : 125 Question Id : 76439011149 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 a structural constituent of an alloy

Options :

76439044497. ✓ Eutectic

76439044498. ✗ Pearlitic

76439044499. ✗ Martensite

76439044500. ✗ Sorbite

Question Number : 126 Question Id : 76439011150 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 one involves a solid -solid transformation

Options :

76439044501. ✗ Eutectic

76439044502. ✗ Peritectic

76439044503. ✓ Eutectoid

76439044504. ✗ Peritectoid

Question Number : 127 Question Id : 76439011151 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 the equilibrium diagram of a binary alloy system, liquidus is that line

Options :

76439044505. ✖ Where solidification is not completed
76439044506. ✔ Where solidification starts
76439044507. ✖ Above which the alloy is in solid state
76439044508. ✖ Where equilibrium occurs

Question Number : 128 Question Id : 76439011152 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 percentage of carbon in $\alpha - Fe$ (or) *Alpha Iron* in Fe -Fe₃C diagram.

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

76439044509. 0.10%
76439044510. 0.25%
76439044511. 0.3 %
76439044512. 0.35 %

Question Number : 129 Question Id : 76439011153 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

During cooling of steel containing 0.8wt% carbon from 1000°C , Pearlite occurs at _____ °C.

Options :

76439044513. ✖ 480
76439044514. ✔ 723
76439044515. ✖ 768

76439044516. ✖ 910

Question Number : 130 Question Id : 76439011154 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

Allotropic forms of metals have same

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

76439044517. Physical properties

76439044518. Crystal structure

76439044519. Mechanical properties

76439044520. Thermal properties

Question Number : 131 Question Id : 76439011155 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 crystal structure of iron at room temperature is _____

Options :

76439044521. ✔ B.C.C

76439044522. ✖ F.C.C

76439044523. ✖ H.C.P

76439044524. ✖ B.C.T

Question Number : 132 Question Id : 76439011156 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 carbon present in malleable cast Iron is in the form of _____

Options :

76439044525. ✔ Tempered carbon

76439044526. ✖ Graphite Nodules

76439044527. ✖ Graphite flakes

76439044528. ✖ Cementite

Question Number : 133 Question Id : 76439011157 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

Microstructure of 0.8 wt % carbon steel

Options :

76439044529. ✖ 50% pearlite and 50% cementite

76439044530. ✖ 80% pearlite and 20% cementite

76439044531. ✖ 20% pearlite and 80% cementite

76439044532. ✔ 100% pearlite

Question Number : 134 Question Id : 76439011158 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 softest material found in high carbon steels with good machinability is

Options :

76439044533. ✖ Ferrite

76439044534. ✖ Pearlite

76439044535. ✔ Spheroidite

76439044536. ✖ Bainite

Question Number : 135 Question Id : 76439011159 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 are the surface heat treatment techniques except

Options :

76439044537. ✓ Nitriding

76439044538. ✗ Carburising

76439044539. ✗ Normalising

76439044540. ✗ Flame hardening

Question Number : 136 Question Id : 76439011160 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

Hardenability of steels in general _____ with increasing grain size of austenite.

Options :

76439044541. ✗ Decreases

76439044542. ✓ Increases

76439044543. ✗ Increases only for ultra low carbon steels

76439044544. ✗ Remains unchanged

Question Number : 137 Question Id : 76439011161 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

Steels that are vacuum heat treated can be quenched at the fastest cooling rate by spraying with a jet of

Options :

76439044545. ✗ Argon

76439044546. ✓ Helium

76439044547. ✗ Dry air

76439044548. ✗ Nitrogen

Question Number : 138 Question Id : 76439011162 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 precipitate formed during age hardening of duralumin alloy is

Options :

76439044549. ✘ Cu_2Al_3

76439044550. ✘ Cu_3Al_3

76439044551. ✔ CuAl_2

76439044552. ✘ CuAl_7

Question Number : 139 Question Id : 76439011163 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

Addition of tungsten and molybdenum to hot die tool steels improves its _____ at

high temperatures

Options :

76439044553. ✘ Tensile strength

76439044554. ✔ Red hardness

76439044555. ✘ Ductility

76439044556. ✘ Creep strength

Question Number : 140 Question Id : 76439011164 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 energizers used in solid carburizing in addition to granular coal are

Options :

76439044557. ✘ Sodium cyanide

76439044558. ✔ Barium carbonate

76439044559. ✔ Calcium carbonate

76439044560. ✖ Barium chloride

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Question Number : 141 Question Id : 76439011165 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

Austempering of steels leads to the formation of _____.

Options :

76439044561. ✖ Pearlite

76439044562. ✖ Troostite

76439044563. ✔ Bainite

76439044564. ✖ Tempered martensite

Question Number : 142 Question Id : 76439011166 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 full hardness in steels subject to sub-zero treatment is achieved due to

Options :

76439044565. ✖ Grain refinement

76439044566. ✖ Strain hardening of material at low temperatures

76439044567. ✔ Transformation of residual austenite to martensite

76439044568. ✖ Formation of alloy carbides at low temperatures

Question Number : 143 Question Id : 76439011167 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

Solutionizing of Aluminum- 4wt% Copper age hardening alloys is best carried out by heating

Options :

76439044569. ✖ Above the eutectic temperature

76439044570. ✖ Below the solvus temperature

76439044571. ✓ Above the solvus temperature but below eutectic temperature

76439044572. ✗ Above the aging temperature but below the solvus temperature

Question Number : 144 Question Id : 76439011168 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

Decarburization of steels during heat treatment results due to prolonged heating in

Options :

76439044573. ✗ A reducing atmosphere

76439044574. ✗ Molten salt baths

76439044575. ✓ Oxidizing atmosphere

76439044576. ✗ In argon

Question Number : 145 Question Id : 76439011169 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

Warping or deformation of components during quenching is due to

Options :

76439044577. ✗ Low hardness of the steel used

76439044578. ✓ Internal stresses in the component before heat treatment

76439044579. ✗ Poor hardenability of the steel used

76439044580. ✗ Poor quality of the quenching medium

Question Number : 146 Question Id : 76439011170 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

High amount of magnetite in iron ore makes the colour of the iron ore as

Options :

76439044581. ✗ Pink

76439044582. ✖ Brown

76439044583. ✔ Black

76439044584. ✖ Red

Question Number : 147 Question Id : 76439011171 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 permeability of burden in an iron making blast furnace can be improved by using

Options :

76439044585. ✖ Fine charge

76439044586. ✔ Agglomerated charge

76439044587. ✖ Oxygen enriched air blast

76439044588. ✖ Pulverized coal injection through tuyeres

Question Number : 148 Question Id : 76439011172 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

High top pressure in the blast furnace operation

Options :

76439044589. ✖ Favours the solution loss reaction

76439044590. ✔ Suppresses the solution loss reaction

76439044591. ✖ Decreases gas – solid contact time

76439044592. ✖ Increases coke rate

Question Number : 149 Question Id : 76439011173 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 tendency to scaffold formation in a blast furnace can be minimized by

Options :

76439044593. ✓ Low alkali content in burden

76439044594. ✘ High basicity

76439044595. ✘ High blast temperature

76439044596. ✘ Low blast pressure

Question Number : 150 Question Id : 76439011174 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 technique is used to improve the thermal and reduction efficiency of low shaft furnace

Options :

76439044597. ✘ High blast velocity

76439044598. ✘ High limestone content

76439044599. ✓ Oxygen enriched blast

76439044600. ✘ Low ash coke

Question Number : 151 Question Id : 76439011175 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 the smelting reduction alternative iron production process

Options :

76439044601. ✘ HyL process

76439044602. ✘ Midrex process

76439044603. ✘ Rotary kiln process

76439044604. ✓ COREX process

Question Number : 152 Question Id : 76439011176 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

Refining slag in LD converter steelmaking process is _____ in nature

Options :

76439044605. ✖ Acidic

76439044606. ✖ Neutral

76439044607. ✔ Basic

76439044608. ✖ Reducing

Question Number : 153 Question Id : 76439011177 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

Aluminium is added in liquid steel as _____

Options :

76439044609. ✖ Alloying element

76439044610. ✔ Deoxidizer

76439044611. ✖ Oxidizing agent

76439044612. ✖ Fuel

Question Number : 154 Question Id : 76439011178 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

Vacuum treatment in secondary steelmaking is carried out to remove _____ from

liquid steel

Options :

76439044613. ✔ Oxygen

76439044614. ✖ Argon

76439044615. ✖ Carbon

76439044616. ✖ Slag

Question Number : 155 Question Id : 76439011179 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 steels show high tendency for pipe formation during casting

Options :

76439044617. ✘ Rimmed steel

76439044618. ✔ Killed steel

76439044619. ✘ Alloy steel

76439044620. ✘ Capped steel

Question Number : 156 Question Id : 76439011180 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

Matte smelting does not involve the following

Options :

76439044621. ✔ External reducing agent

76439044622. ✘ Flux

76439044623. ✘ Oxygen

76439044624. ✘ Air

Question Number : 157 Question Id : 76439011181 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

Matte smelting is normally carried out in

Options :

76439044625. ✘ Blast furnace

76439044626. ✘ Cupola furnace

76439044627. ✔ Reverberatory furnace

76439044628. ✘ Retort furnace

Question Number : 158 Question Id : 76439011182 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

Alumina percentage in bauxite is about

Options :

76439044629. ✖ 10

76439044630. ✖ 25

76439044631. ✔ 60

76439044632. ✖ 90

Question Number : 159 Question Id : 76439011183 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

Electrolytic extraction of Al from aqueous solution is rendered difficult by

Options :

76439044633. ✖ Oxygen evolution

76439044634. ✔ Hydrogen evolution

76439044635. ✖ CO evolution

76439044636. ✖ CO₂ evolution

Question Number : 160 Question Id : 76439011184 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 metal among the following is produced via Imperial smelting process

Options :

76439044637. ✔ Zn

76439044638. ✖ Cu

76439044639. ✖ Fe

76439044640. ✖ Al

Question Number : 161 Question Id : 76439011185 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

MgCl₂ can be reduced to Mg by

Options :

76439044641. ✓ Na

76439044642. ✗ Cu

76439044643. ✗ Fe

76439044644. ✗ Ni

Question Number : 162 Question Id : 76439011186 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 process is used to extract magnesium from seawater

Options :

76439044645. ✗ Bayer's process

76439044646. ✓ DOW process

76439044647. ✗ Kroll's process

76439044648. ✗ Sorel process

Question Number : 163 Question Id : 76439011187 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 sponge Ti is produced by reducing TiCl₄ using

Options :

76439044649. ✗ Na

76439044650. ✓ Mg

76439044651. ✗ C

76439044652. ✗ H₂

Question Number : 164 Question Id : 76439011188 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

Iodide process involves formation and decomposition of

Options :

76439044653. ✓ Metal halide

76439044654. ✗ Metal oxide

76439044655. ✗ Metal sulphide

76439044656. ✗ Metal hydroxide

Question Number : 165 Question Id : 76439011189 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 naturally occurring zirconium mineral contains the following compound

Options :

76439044657. ✗ ZrO_2

76439044658. ✗ $ZrCl_4$

76439044659. ✓ $ZrSiO_4$

76439044660. ✗ ZrC

Question Number : 166 Question Id : 76439011190 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 tensile load -elongation curve of a metal does not describe

Options :

76439044661. ✗ Work hardening

76439044662. ✗ Yield stress

76439044663. ✓ Anisotropy index

76439044664. ✖ Necking strain

Question Number : 167 Question Id : 76439011191 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 indenter used in Rockwell hardness test (B scale) of softer materials is

Options :

76439044665. ✖ Diamond cone

76439044666. ✔ 1.6 mm diameter steel ball

76439044667. ✖ 3.2 mm diameter steel ball

76439044668. ✖ Diamond square pyramid

Question Number : 168 Question Id : 76439011192 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

Units for measuring impact test value are

Options :

76439044669. ✖ MPa

76439044670. ✖ mm

76439044671. ✔ Joules

76439044672. ✖ Kilo watts

Question Number : 169 Question Id : 76439011193 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

Ductile to brittle transition temperature of steel can be lowered by

Options :

76439044673. ✔ Lowering carbon content

76439044674. ✖ Increasing carbon content

76439044675. ✖ Hot working

76439044676. ✖ Cold working

Question Number : 170 Question Id : 76439011194 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

Short peening improves fatigue resistance because of

Options :

76439044677. ✔ Compressive stress

76439044678. ✖ Tensile stress

76439044679. ✖ Shear stress

76439044680. ✖ Bending Stress

Question Number : 171 Question Id : 76439011195 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

Paris equation for fatigue crack growth is given by

Options :

76439044681. ✔ $\frac{da}{dn} = C \Delta k^m$

76439044682. ✖ $\frac{da}{dn} = \frac{c}{\Delta k}$

76439044683. ✖ $\Delta k = C \left(\frac{da}{dn}\right)^m$

76439044684. ✖ $\frac{da}{dn} = c \Delta k$

Question Number : 172 Question Id : 76439011196 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

Nabarro - Herring creep is prominent in

Options :

76439044685. ✘ Coarse grained materials at low temperatures

76439044686. ✘ Coarse grained materials at high temperatures

76439044687. ✔ Fine grained materials at high temperatures

76439044688. ✘ Fine grained materials at low temperatures

Question Number : 173 Question Id : 76439011197 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

X-Rays

Options :

76439044689. ✔ Are a form of electromagnetic radiation

76439044690. ✘ Have wavelength longer than visible light

76439044691. ✘ Can be easily focussed

76439044692. ✘ Travel faster than light

Question Number : 174 Question Id : 76439011198 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

Ultrasonic waves are generated using

Options :

76439044693. ✘ Thomson effect

76439044694. ✘ See Beck effect

76439044695. ✘ Peltier effect

76439044696. ✓ Piezo electric effect

Question Number : 175 Question Id : 76439011199 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 edge dislocation can move into a different slip plane by

Options :

76439044697. ✗ Glide

76439044698. ✓ Climb

76439044699. ✗ Cross slip

76439044700. ✗ Both cross slip and climb

Question Number : 176 Question Id : 76439011200 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

Cold working is done below

Options :

76439044701. ✓ Re-crystallization temperature

76439044702. ✗ DBTT

76439044703. ✗ Sub-zero temperature

76439044704. ✗ Equicohesive temperature

Question Number : 177 Question Id : 76439011201 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 'b' is burger's vector, the energy of dislocation is

Options :

76439044705. ✗ Proportional to b

76439044706. ✓ Proportional to b^2

76439044707. ✖ Proportional to $1/b$

76439044708. ✖ Independent of b

Question Number : 178 Question Id : 76439011202 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

Strengthening of micro -alloyed steel is mainly due to

Options :

76439044709. ✔ Grain boundary pinning

76439044710. ✖ Work hardening

76439044711. ✖ Dispersion hardening

76439044712. ✖ Precipitation hardening

Question Number : 179 Question Id : 76439011203 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

Work hardening rate is high in materials with

Options :

76439044713. ✖ High stacking fault energy

76439044714. ✔ Low stacking fault energy

76439044715. ✖ High ductility

76439044716. ✖ High elastic modulus

Question Number : 180 Question Id : 76439011204 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

Coherency relation is important and mandatory for

Options :

- 76439044717. ✘ Work hardening
- 76439044718. ✔ Precipitate hardening
- 76439044719. ✘ Grain boundary hardening
- 76439044720. ✘ Fiber strengthening

Question Number : 181 Question Id : 76439011205 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 rolling when back tension is applied, material moves

Options :

- 76439044721. ✘ Towards entry
- 76439044722. ✔ Towards exit
- 76439044723. ✘ Vertically up
- 76439044724. ✘ Vertically down

Question Number : 182 Question Id : 76439011206 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 hot forging, flash gutter is provided because

Options :

- 76439044725. ✘ Flash crack can be avoided
- 76439044726. ✔ Effective die filling can be ensured
- 76439044727. ✘ Load requirement is reduced
- 76439044728. ✘ Excessive scaling can be avoided

Question Number : 183 Question Id : 76439011207 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

Flange wrinkling is the defect found in

Options :

76439044729. ✘ Rolling

76439044730. ✔ Deep drawing

76439044731. ✘ Extrusion

76439044732. ✘ Forging

Question Number : 184 Question Id : 76439011208 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

Binder used in green sand moulding is

Options :

76439044733. ✘ Quartz

76439044734. ✘ Calcite

76439044735. ✘ Spherlite

76439044736. ✔ Bentonite

Question Number : 185 Question Id : 76439011209 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 pattern used for large quantity production of small casting is

Options :

76439044737. ✘ Gated

76439044738. ✘ Cope and drag

76439044739. ✓ Match plate

76439044740. ✘ Loose

Question Number : 186 Question Id : 76439011210 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

Artistic casting are made by

Options :

76439044741. ✓ Investment casting

76439044742. ✘ Core sand moulding

76439044743. ✘ Floor and pit moulding

76439044744. ✘ Green sand moulding

Question Number : 187 Question Id : 76439011211 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

Automobile wheels are made by

Options :

76439044745. ✘ Gravity die casting

76439044746. ✘ Centrifugal casting

76439044747. ✓ Low pressure die casting

76439044748. ✘ Investment casting

Question Number : 188 Question Id : 76439011212 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

Following part of the casting acts as reservoir of molten metal

Options :

76439044749. ✖ Runner

76439044750. ✔ Riser

76439044751. ✖ Sprue

76439044752. ✖ Gate

Question Number : 189 Question Id : 76439011213 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 is pressurized gating system

Options :

76439044753. ✖ 1:3:3

76439044754. ✖ 1:1:1

76439044755. ✔ 1:2:1

76439044756. ✖ 3:2:2

Question Number : 190 Question Id : 76439011214 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

Coke bed height in cupola is defined as height of coke above

Options :

76439044757. ✖ Tapping spout

76439044758. ✔ Tuyeres

76439044759. ✖ Slag spout

76439044760. ✖ Metal charge

Question Number : 191 Question Id : 76439011215 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

Mould oscillation in continuous casting of steels is used

Options :

76439044761. ✘ To heal cracks formed on casting surface

76439044762. ✘ To obtain good mixing of liquid metals

76439044763. ✔ To float out the inclusions

76439044764. ✘ To avoid rhomboidity of the casting

Question Number : 192 Question Id : 76439011216 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

Microporosity defect in castings is due to

Options :

76439044765. ✔ Long range freezing

76439044766. ✘ Short range freezing

76439044767. ✘ Eutectic freezing

76439044768. ✘ Peritectic freezing

Question Number : 193 Question Id : 76439011217 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

Preferable welding process for aluminium alloys is

Options :

76439044769. ✘ DC-TIG

76439044770. ✔ AC-TIG

76439044771. ✘ Submerged Arc welding

Thermit welding

76439044772. ✖

Question Number : 194 Question Id : 76439011218 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 MIG welding of steels the gas used is

Options :

76439044773. ✔ Carbon dioxide

76439044774. ✖ Hydrogen

76439044775. ✖ Oxygen

76439044776. ✖ Nitrogen

Question Number : 195 Question Id : 76439011219 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 process will result in key hole welding

Options :

76439044777. ✖ Submerged

76439044778. ✖ Gas welding

76439044779. ✔ Electron beam

76439044780. ✖ Thermit

Question Number : 196 Question Id : 76439011220 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

Welding process used for broken rails

Options :

76439044781. ✖ Plasma Arc

76439044782. ✖ Resistance

76439044783. ✔ Thermit

76439044784. ✖ Laser

Question Number : 197 Question Id : 76439011221 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 melting point of the filler metal is less than 450°C and base metal does not melt, the process is called

Options :

76439044785. ✖ Brazing

76439044786. ✖ Braze welding

76439044787. ✔ Soldering

76439044788. ✖ Welding

Question Number : 198 Question Id : 76439011222 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 statements about brazing is not true.

Options :

76439044789. ✖ The filter metal used is usually non-ferrous

76439044790. ✖ Brazed joint is stronger than soldered joint

76439044791. ✖ The smaller the brazing filler metal thickness the stronger the joint

76439044792. ✔

When brazing a lap joint the two surfaces should be tightly lapped without any gap

Question Number : 199 Question Id : 76439011223 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

Cold cracking of steel weldments is due to

Options :

76439044793. ✘ Oxygen

76439044794. ✔ Hydrogen

76439044795. ✘ Nitrogen

76439044796. ✘ Chlorine

Question Number : 200 Question Id : 76439011224 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

Weld spatter is a welding defect resulting from the use of

Options :

76439044797. ✘ Too low welding current

76439044798. ✘ Low voltage

76439044799. ✔ Too high welding current

76439044800. ✘ High voltage