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 $|adj(adjA^2)| =$

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

$\sqrt{3}\csc 20^0 - \sec 20^0 =$

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

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

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. ✔ $\dfrac{1}{xa^x(\log a)^2}$

76439044084. ✖ $\dfrac{1}{xa^x}$

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 $\cos^2 x \dfrac{d^2y}{dx^2} + 2x =$

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

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

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

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

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. ✖ $\left(0,1/e\right)$

76439044094. ✖ $(0,e)$

76439044095. ✖ (e,∞)

76439044096. ✔ $\left(1/e,\infty\right)$

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 $\left[-2,\frac{9}{2}\right]$ 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. ✔ $\frac{1}{3}\log|\sin 3x| - \frac{1}{5}\log|\sin 5x| + C$

76439044108. ✖ $3\log|\sin 3x| - 5\log|\sin 5x| + C$

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 :

76439044109. ✖ $\frac{1}{2}[\sec^2 x - \tan x] + C$

76439044110. ✔ $\frac{1}{2}[x\sec^2 x - \tan x] + C$

76439044111. ✖ $\frac{1}{2}[x\sec^2 x + \tan x] + C$

76439044112. ✖ $\frac{1}{2}[\sec^2 x + \tan x] + C$

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 :

76439044113. ✔ $2\left[\sqrt{e^x - 1} - \tan^{-1}\sqrt{e^x - 1}\right] + C$

76439044114. ✖ $\sqrt{e^x - 1} - \tan^{-1}\sqrt{e^x - 1} + C$

76439044115. ✖ $\sqrt{e^x - 1} + \tan^{-1}\sqrt{e^x - 1} + C$

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

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 :

76439044133. ✖ $\sin^{-1} x + \sin^{-1} y = C$

76439044134. ✖ $\tan^{-1} x - \tan^{-1} y = C$

76439044135. ✔ $\tan^{-1} x + \tan^{-1} y = C$

76439044136. ✖ $\sin^{-1} x - \sin^{-1} y = C$

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 :

76439044137. ✖ $(1+x^2)y + \sin x = C$

76439044138. ✖ $(1+x^2)y = \cos x + C$

76439044139. ✔ $(1+x^2)\,y = \sin x + C$

76439044140. ✖ $(1+x^2)\,y + \cos x = C$

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 :

76439044141. ✔ $\frac{x}{2}\sinh x$

76439044142. ✖ $\frac{x}{2}\cosh x$

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 $\left(D^3+4D\right)y=\sin 2x$ 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. ✖ $$y\frac{d^2y}{dx^2} = \frac{dy}{dx}$$

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

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

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

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. ✖ $y = x^2e^{cx}$

76439044167. ✖ $x = ye^{cy}$

76439044168. ✖ $x = y^2e^{cy}$

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 $\lim_{s\to o} F(s) =$

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 $\lim_{t\to o} f(t) =$

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

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): $\frac{1}{1^2}+\frac{1}{2^2}+\frac{1}{3^2}+\frac{1}{4^2}+\ldots\ldots\ldots=\frac{\pi^2}{12}$

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

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

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 $\frac{d2}{d1} = 243$, then $\frac{P_2}{P_1}$ is ($r=\frac{7}{5}$)

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 2i + 3j + k and 3i + 2j + k.

Options :

76439044225. ✔ i + j – 5k

76439044226. ✖ 2i + 3j + k

76439044227. ✖ i + 2j + k

76439044228. ✖ 2i – j – 5k

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 $\bar{A}$= 2i + j–k and $\bar{B}$ = i–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 $g=10m/s^2$).

Options :

76439044237. ✖ $20i - 20j$

76439044238. ✔ $20i + 20\sqrt{3}\,j$

76439044239. ✖ $20\sqrt{3}\,i + 20j$

76439044240. ✖ $10i + 10\sqrt{3}\,j$

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 x 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 x 10^4 J

76439044258. ✔ 2 x 10^4 J

76439044259. ✖ 4 x 10^4 J

76439044260. ✖ 1 x 10^4 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. ✖ $\pm\, 0.34\ meters$

76439044266. ✖ $\pm\, 0.24\ meters$

76439044267. ✔ $\pm\, 0.1414\ meters$

76439044268. ✖ $\pm\, 0.521\ meters$

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 them 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. ✖ $1S^2 2S^2 2P^6 3S^1$

76439044302. ✖ $1S^2 2S^2 2P^6 3S^2$

76439044303. ✔ $1S^2 2S^2 2P^6 3S^0$

76439044304. ✖ $1S^2 2S^2 2P^6 3S^2 3P^1$

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. ✖ $CHCOOH + CH_3COONa$

76439044322. ✖ $NH_4Cl + NH_4OH$

76439044323. ✔ $NaOH + NaCl$

76439044324. ✖ $CH_3COOH + CH_3COOK$

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 Pt, $H_2(g)$ | Hcl (sol)|| AgCl $_{(s)}$ |$Ag_{(s)}$ is

(given that $E^o_{Agcl/Ag} = +0.222v$)

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 handness of water?

Options :

76439044361. ✔ $Ca(HCO_3)_2 \rightarrow CaCO_3 + CO_2 + H_2O$

76439044362. ✖ $Na_2Z + MgSo_4 \rightarrow MgZ + Na_2SO_4$

76439044363. ✖ $Cl_2 + H_2O \rightarrow HCl + HClO$

76439044364. ✖ $Na_2Z + CaCl_2 \rightarrow CaZ + 2NaCl$

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 $Mg(HCO_3)_2$ per litre

Options :

76439044369. ✖ 30 mg

19 mg

76439044370. ✖

76439044371. ✖ 25 mg

76439044372. ✔ 20 mg

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 :

76439044377. ✖ Benzoyl peroxide

76439044378. ✖ Isobutylene with $TiCl_4$

76439044379. ✔ Acidic /Alkaline

76439044380. ✖ Metal Chloride

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 / Nm^3

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 temparature

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.m^2.°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 :

76439044485. ✖ Initial concentration of the reactant

76439044486. ✖ Pressure

76439044487. ✔ Temperature

76439044488. ✖ Volume

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 :

76439044489. ✔ Zero order

76439044490. ✖ Third order

76439044491. ✖ Consecutive order

76439044492. ✖ First order

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 :

76439044493. ✖ Feasibility

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 $\propto -Fe\ (or) Alpha\ Iron$ in Fe -Fe_3C 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. ✖ CO_2 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

$MgCl_2$ 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 $TiCl_4$ using

Options :

76439044649. ✖ Na

76439044650. ✔ Mg

76439044651. ✖ C

76439044652. ✖ H_2

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 indentor 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 strengthing

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

Match plate

76439044739. ✔

Loose

76439044740. ✖

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 :

Investment casting

76439044741. ✔

Core sand moulding

76439044742. ✖

Floor and pit moulding

76439044743. ✖

Green sand moulding

76439044744. ✖

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 :

Gravity die casting

76439044745. ✖

Centrifugal casting

76439044746. ✖

Low pressure die casting

76439044747. ✔

Investment casting

76439044748. ✖

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 rhombodity 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

76439044772. ✖ Thermit welding

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 lamped 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