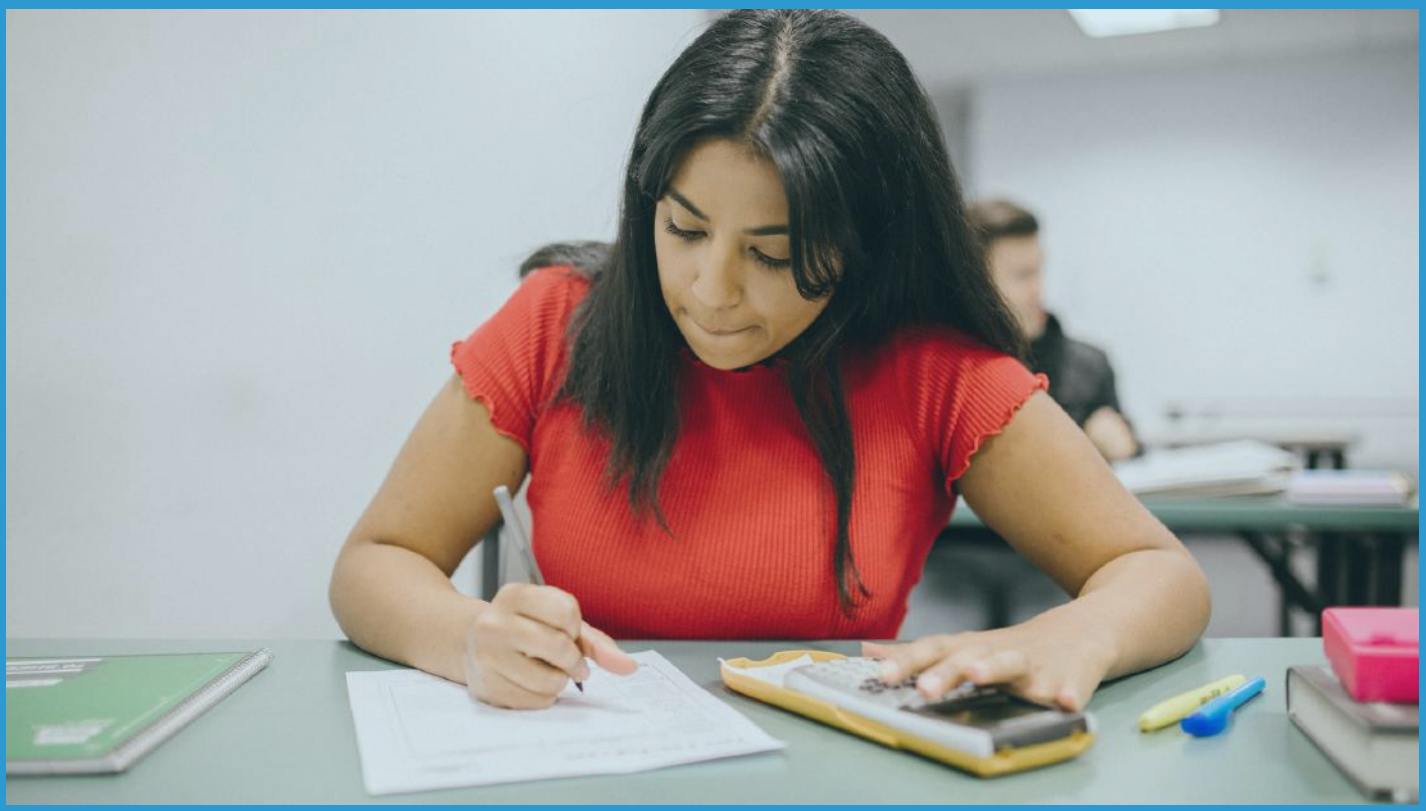
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Notations :

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 May 2023 Shift 2
Subject Name :	Metallurgical Engineering
Creation Date :	2023-05-31 16:35:23
Duration :	120
Total Marks :	120
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No

Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Metallurgical Engineering

Group Number :	1
Group Id :	28393673
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	120
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Mathematics

Section Id :	283936195
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	10
Section Marks :	10
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0

Sub-Section Number : 1

Sub-Section Id : 283936195

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 1 Question Id : 28393610121 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $A=\begin{bmatrix} 2019 & 2020 & 2021 \\ 2020 & 2021 & 2022 \\ 2021 & 2022 & 2023 \end{bmatrix}$ then $|A| =$

Options :

1. ✖ 3

2. ✖ 2

3. ✖ 1

4. ✔ 0

Question Number : 2 Question Id : 28393610122 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Let A be 3×3 matrix with eigenvalues 0, 0, 14, which of the following is true?

Options :

1. ✖ $A^2-14A=$

2. ✖ $A^3+14A=0$

3. ✔ $A^3-14A^2=0$

4. ✖ $A^3-14A=0$

Question Number : 3 Question Id : 28393610123 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $\overline{f}=3xy\,\hat{i}-y^2\,\hat{j}$, then $\int_C \overline{f}\cdot\overline{dr}$ where C is the curve $y=2x^2$ in xy-plane from $(0,0)$ to $(1,2)$ is

Options :

1. ✔ $\frac{-7}{6}$

2. ✖ $\frac{7}{6}$

3. ✖ $\frac{6}{7}$

4. ✖ $\frac{-6}{7}$

Question Number : 4 Question Id : 28393610124 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The series $x+2x^2+3x^3+4x^4+\ldots$ is

Options :

1. ✖ convergent when $x \geq 1$ and divergent when $x < 1$

2. ✔ divergent when $x \geq 1$ and convergent $x < 1$

3. ✖ convergent when $\frac{1}{x} \geq 1$ and divergent $\frac{1}{x} < 1$

4. ✖ divergent when $\frac{2}{x} \leq 1$ and convergent $\frac{2}{x} < 1$

Question Number : 5 Question Id : 28393610125 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Fourier series of an odd function of period $2l$ is

Options :

1. ✔ $f(x)=\sum_{n=1}^{\infty} b_n \sin\frac{n\pi x}{l},\quad b_n=\frac{1}{l}\int_0^{2l} f(x)\sin\frac{n\pi x}{l}$

2. ✖ $f(x)=\sum_{n=1}^{\infty} a_n \cos\frac{n\pi x}{l}+\frac{a_0}{2},\quad a_n=\frac{1}{l}\int_0^{2l} f(x)\cos\frac{n\pi x}{l}dx$

3. ✖ $f(x)=\sum_{n=0}^{\infty} a_n \cos nx+b_n \sin nx,\quad a_n=0, b_n=\frac{1}{l}\int_0^{l} f(x)\sin x\,dx$

4. ✖

$$f(x)=\sum_{n=1}^{\infty} b_n \sin nx, \quad b_n=\frac{1}{l}\int_0^{2l} f(x)\sin nx\,dx$$

Question Number : 6 Question Id : 28393610126 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If from a group of 10 dozens of match boxes, selecting 5 match boxes successively with replacement is a random experiment, then the number of elements in sample space is

Options :

1. ✖ 10^5

2. ✔ 120^5

3. ✖ 12^5

4. ✖ 102^5

Question Number : 7 Question Id : 28393610127 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Let X be a random variable that follows the Binomial distribution with expectation $E(X)=4$ and the variance $V(X)=3$ then the ratio between the probability of success p and its mode is

Options :

1. ✖ $1:4$

2.

✖ $4:1$

3. ✔ $1:16$

4. ✖ $16:1$

Question Number : 8 Question Id : 28393610128 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the differential equation $(x^3D^3+3x^2D^2+xD+8)y=cos(logx)$ where $D^n=\frac{d^n}{dx^n}$ is reduced to a differential equation with constant coefficients, then it's auxiliary equation is

Options :

1. ✔ $m^3+8=0$

2. ✖ $m^3-8=0$

3. ✖ $m^3+3m^2+m+8=0$

4. ✖ $m^3+8m=0$

Question Number : 9 Question Id : 28393610129 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If $L\{f(t)\}=\bar{f}(s)$ then $L\left\{\int_0^t\int_0^t\int_0^t f(u)\,du\,du\,du\right\}=$

Options :

1. ✖ $\frac{1}{s^2}\bar{f}(s)$

2. ✔ $\frac{1}{s^3}\bar{f}(s)$

3. ✖ $\int_s^{\infty}\int_s^{\infty}\int_s^{\infty}\bar{f}(s)\,dsdsds$

4. ✖ $\int_0^{\infty}\bar{f}(s)\,ds$

Question Number : 10 Question Id : 28393610130 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Using the given below values of t and $f(t)$, $\int_1^7 f(t)dt$ is evaluated by the Simpson $\frac{1}{3}^{rd}$ method and its value is $\frac{1369}{3}$ then the value of a is

t	1	2	3	4	5	6	7
$f(t)$	81	75	80	83	a	70	60

Options :

1. ✖ 70

2. ✖ 72

3. ✖ 76

4. ✔ 78

Metallurgical Engineering

Section Id :	283936196
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	110
Number of Questions to be attempted :	110
Section Marks :	110
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	283936196
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 11 Question Id : 28393610131 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following materials are protected by passivation (i.e., formation of a thin adherent film on the surface) from corrosion?

Options :

1. ✖ Aluminium alloys and mild steel

2. ✖ Mild steel and stainless steel

3. ✖ Stainless steel and silver

4. ✔ Aluminium alloys and stainless steel

Question Number : 12 Question Id : 28393610132 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is NOT an intensive property?

Options :

1. ✖ Temperature

2. ✖ Pressure

3. ✖ Volume

4. ✔ Refractive index

Question Number : 13 Question Id : 28393610133 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In the Helmholtz free energy equation TS basically represents

Options :

1.

✔ Bound energy

2. ✖ Free energy

3. ✖ Surface energy

4. ✖ Activation energy

Question Number : 14 Question Id : 28393610134 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The effect of temperature and pressure on chemical equilibrium can be predicted by

Options :

1. ✖ Van't Hoff equation

2. ✖ Le Chatelier's principle

3. ✖ Law of mass action

4. ✔ Clausius Clapeyron equation

Question Number : 15 Question Id : 28393610135 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Activation energy of a chemical reaction, homogeneous or heterogeneous, is graphically estimated from a plot between

[where, k is the rate constant and T is the absolute temperature]

Options :

1. ✖ k versus T

2. ✖ 1/k versus T

3. ✖ 1/k versus ln T

4. ✔ ln k versus 1/T

Question Number : 16 Question Id : 28393610136 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Joule is a measure of

Options :

1. ✖ Specific heat

2. ✔ Heat energy

3. ✖ Thermal capacity

4. ✖ Entropy

Question Number : 17 Question Id : 28393610137 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$\left(\frac{\delta H}{\delta T}\right)_P$ is the mathematical expression for

Options :

1. ✔ Specific heat at constant pressure

2. ✖ Entropy change

3. ✖ Gibbs free energy

4. ✖ Helmholtz free energy

Question Number : 18 Question Id : 28393610138 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When the rate of reaction is constant, the reaction is said to be

Options :

1. ✔ Zero order

2. ✖ First order

3. ✖ Second order

4. ✖ Third order

Question Number : 19 Question Id : 28393610139 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The migration of atoms in a pure material is known as

Options :

1. ✖ Substitutional diffusion

2. ✖ Interstitial diffusion

3. ✔ Self diffusion

4. ✖ Diffusivity

Question Number : 20 Question Id : 28393610140 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Diffusion is more rapid

Options :

1. ✖ Along the coarse grain boundaries

2. ✖ In the coarse grains

3. ✖ In the fine grains

4. ✔ Along the fine grain boundaries

Question Number : 21 Question Id : 28393610141 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Doping of silicon wafers for integrated electronic circuits involves

Options :

1. ✔ Solid state diffusion

2. ✖ Solid state reduction

3. ✖ Solid state strengthening

4. ✖ Segregation control

Question Number : 22 Question Id : 28393610142 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The cathode in an electrochemical cell always carries

Options :

1. ✖ Negative charge

2. ✔ Positive charge

3. ✖ Zero charge

4. ✖ Varies with electrolyte

Question Number : 23 Question Id : 28393610143 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The activation energy of a chemical reaction is

Options :

1. ✔ Increases with temperature

2. ✖ Decreases with temperature

3. ✖ Negative

4. ✖ Positive

Question Number : 24 Question Id : 28393610144 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Nernst equation is given by the following relation

Options :

1. ✔ $\Delta G = -nFE$

2. ✖ $\Delta G = -nF$

3. ✖ $\Delta G = -nF/E$

4. ✖ $\Delta G = nFE$

Question Number : 25 Question Id : 28393610145 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Partial molal quantities are important in the study of

Options :

1. ✖ Ideal gases

2. ✖ Ideal solutions

3. ✔ Non-ideal mixtures

4. ✖ A pure compound

Question Number : 26 Question Id : 28393610146 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Thermal diffusivity is minimum for

Options :

1. ✖ Aluminium

2. ✔ Rubber

3. ✖ Iron

4. ✖ Lead

Question Number : 27 Question Id : 28393610147 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The dimensionless number relevant in transient heat conduction is

Options :

1. ✖ Grashof number

2. ✖ Reynolds number

3. ✔ Fourier number

4. ✖ Prandtl number

Question Number : 28 Question Id : 28393610148 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The temperature gradient in a fluid flowing over a heated plate will be

Options :

1. ✖ Zero at the plate surface

2. ✖ Positive at the surface

3. ✖ Very steep at the surface

4. ✔ Zero at the top of the thermal boundary layer.

Question Number : 29 Question Id : 28393610149 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The intensity of solar radiation on the earth is

Options :

1. ✖ $10\ W/m^2$

2. ✖ $110\ W/m^2$

3. ✔ $450\ W/m^2$

4. ✖ $1\ W/m^2$

Question Number : 30 Question Id : 28393610150 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Entropy decreases during

Options :

1. ✖ Rusting of iron

2. ✔ Crystallization of sucrose from solution

3. ✖ Melting of ice

4. ✖ Vaporization of camphor

Question Number : 31 Question Id : 28393610151 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Floatability of any mineral is its tendency to attach to

Options :

1. ✖ Water

2. ✔ Air bubbles

3. ✖ Agitator

4. ✖ Reagents

Question Number : 32 Question Id : 28393610152 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Galena is the sulphide of

Options :

1. ✖ Zinc

2. ✖ Copper

3. ✔ Lead

4.

✖ Zirconium

Question Number : 33 Question Id : 28393610153 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Stefan-Boltzmann law applies to

Options :

1. ✔ Black body

2. ✖ White body

3. ✖ Red body

4. ✖ Green body

Question Number : 34 Question Id : 28393610154 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The important factors for producing low silicon pig iron in a blast furnace are

Options :

1. ✖ Higher temperature and higher basicity

2. ✖ Lower temperature and lower basicity

3. ✔ Lower temperature and higher basicity

4. ✖ Higher temperature and lower basicity.

Question Number : 35 Question Id : 28393610155 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The process using gaseous reductant for production of DRI is

Options :

1. ✖ SL / RN

2. ✖ KRUPP – RENN

3. ✖ Mini Blast furnace

4. ✔ HYL

Question Number : 36 Question Id : 28393610156 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In which crusher the “angle of nip” term is used

Options :

1. ✖ Jaw

2. ✔ Roll

3.

✖ Cone

4. ✖ Gyratory

Question Number : 37 Question Id : 28393610157 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Matte is produced during smelting of _____ ores.

Options :

1. ✖ Magnesium

2. ✔ Nickel

3. ✖ Uranium

4. ✖ Titanium

Question Number : 38 Question Id : 28393610158 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Yellow cake consists of _____

Options :

1. ✔ UO_2

2. ✖ TiO_2

3. ✖ WO_2

4. ✖ MgO

Question Number : 39 Question Id : 28393610159 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Killed steels have the following defect mostly _____

Options :

1. ✖ Blow holes

2. ✔ Pipe

3. ✖ Segregation

4. ✖ Longitudinal cracks

Question Number : 40 Question Id : 28393610160 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

AOD process is suitable for production of _____ steels.

Options :

1. ✖ Tool

2.

✔ Stainless

3. ✖ Ausforming

4. ✖ Maraging

Question Number : 41 Question Id : 28393610161 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Hairline cracks in steel ingots are caused by

Options :

1. ✔ Hydrogen

2. ✖ Sulphur

3. ✖ Carbon

4. ✖ Silicon

Question Number : 42 Question Id : 28393610162 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Pidgeon process is the pyrometallurgical process used in the extraction of

Options :

1. ✖ Ti

2. ✖ Cu

3. ✔ Mg

4. ✖ In

Question Number : 43 Question Id : 28393610163 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

High refractoriness of refractory bricks means, that it has a

Options :

1. ✔ High spalling resistance

2. ✖ Low spalling resistance

3. ✖ High resistance to fusion

4. ✖ Low porosity

Question Number : 44 Question Id : 28393610164 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The panel test in refractories is to investigate the following property of it

Options :

1.

✖ Compression

2. ✖ Corrosion

3. ✔ Spalling resistance

4. ✖ Thermal conductivity

Question Number : 45 Question Id : 28393610165 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following process is also called Thomas – Gilchrist process?

Options :

1. ✖ Crucible

2. ✖ Acid Bessemer

3. ✔ Basic Bessemer

4. ✖ Basic open hearth

Question Number : 46 Question Id : 28393610166 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following furnace works on the principle of a transformer?

Options :

1. ✖ Blast furnace

2. ✖ Cupola

3. ✔ Induction furnace

4. ✖ Salt bath furnace

Question Number : 47 Question Id : 28393610167 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Minimum waste gases are produced in the following furnace

Options :

1. ✖ Blast furnace

2. ✖ Open hearth furnace

3. ✔ Electric arc furnace

4. ✖ Kiln

Question Number : 48 Question Id : 28393610168 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

‘Take care of the slag it will take care of the metal’ is applicable in

Options :

1. ✖ Iron making

2. ✔ Steel making

3. ✖ Annealing

4. ✖ Flame hardening

Question Number : 49 Question Id : 28393610169 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The strongest deoxidiser is

Options :

1. ✖ Silicon

2. ✖ Manganese

3. ✔ Calcium

4. ✖ Aluminium

Question Number : 50 Question Id : 28393610170 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Puddling process is for converting

Options :

1. ✖ Pig iron into steels

2. ✖ Mild steel into alloy steel

3. ✔ Pig iron into wrought iron

4. ✖ Lead ore into lead metal

Question Number : 51 Question Id : 28393610171 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For a combination of strength, ductility and weldability which of the following materials are chosen?

Options :

1. ✔ Maraging steels

2. ✖ Case hardened steels

3. ✖ Ceramics

4. ✖ Plastics

Question Number : 52 Question Id : 28393610172 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Grinding wheels use ceramic materials because of their

Options :

1. ✔ High hardness and strength

2. ✖ Machinability and ductility

3. ✖ Ductility and toughness

4. ✖ Toughness and wear resistance

Question Number : 53 Question Id : 28393610173 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If the concentration of point defects increases in a crystal, then its configurational entropy

Options :

1. ✖ Does not change

2. ✖ Decreases

3. ✖ Increases

4. ✔ Initially increases and then decreases

Question Number : 54 Question Id : 28393610174 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is the softest?

Options :

1. ✖ Austenite

2. ✔ Ferrite

3. ✖ pearlite

4. ✖ cementite

Question Number : 55 Question Id : 28393610175 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

At equilibrium, the maximum number of phases in a three-component system at constant pressure is

Options :

1. ✖ 1

2. ✖ 2

3. ✖ 3

4. ✔ 4

Question Number : 56 Question Id : 28393610176 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

For an ideal hexagonal-closed packed structure, the c/a ratio and packing efficiency respectively are

Options :

1. ✖ 1.633 and 52%

2. ✔ 1.633 and 74%

3. ✖ 1.733 and 68%

4. ✖ 1.733 and 74%

Question Number : 57 Question Id : 28393610177 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following elements alloyed with iron is a ferrite stabilizer?

Options :

1. ✖ Nickel

2. ✖ Manganese

3. ✖ Carbon

4. ✔ Silicon

Question Number : 58 Question Id : 28393610178 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is the correct decreasing sequence of Quenching Power for quenchants used in heat treatment of steels?

Options :

1. ✖ Oil > Water > Brine > Air

2. ✖ Brine > Oil > Water > Air

3. ✔ Brine > Water > Oil > Air

4. ✖ Water > Brine > Oil > Air

Question Number : 59 Question Id : 28393610179 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

How many effective number of atoms are present per unit cell in a BCC lattice structure

Options :

1. ✖ 1

2. ✔ 2

3. ✖ 3

4. ✖ 4

Question Number : 60 Question Id : 28393610180 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Increasing electron beam energy in a transmission electron microscope will

Options :

1. ✖ Increase magnification

2. ✖ Decrease contrast

3. ✖ Decrease resolution

4. ✔ Increase X-ray emission from the sample

Question Number : 61 Question Id : 28393610181 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

X-rays are

Options :

1. ✖ deflected by an electric field but not by a magnetic field

2. ✖ deflected by a magnetic field but not by an electric field

3. ✔ deflected both by magnetic field and an electric field

4. ✖ not deflected by an electric field or by a magnetic field

Question Number : 62 Question Id : 28393610182 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The strength to density ratio is called as

Options :

1. ✖ Specific gravity

2. ✔ Specific strength

3. ✖ Specific stiffness

4. ✖ Specific modulus

Question Number : 63 Question Id : 28393610183 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Martensite has a crystal lattice structure

Options :

1. ✔ Body centered tetragonal

2. ✖ Body centered cubic

3. ✖ Face centered cubic

4. ✖ Close packed hexagonal

Question Number : 64 Question Id : 28393610184 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Cyaniding is a process of

Options :

1. ✖ Tempering

2. ✔ Case hardening

3. ✖ Normalizing

4. ✖ spherodizing

Question Number : 65 Question Id : 28393610185 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The name of the test used to evaluate the hardenability of steel is

Options :

1. ✔ Jominy end quench test

2. ✖ Fatigue test

3. ✖ Creep test

4. ✖ Tensile test

Question Number : 66 Question Id : 28393610186 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Frank-Reed source

Options :

1. ✔ Generates dislocations

2. ✖ Hinders the movement of dislocations

3. ✖ is responsible for polygonization in edge dislocation

4. ✖ is responsible for dislocation climb

Question Number : 67 Question Id : 28393610187 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Hume-Rothery's rule predicts the existence of solid solubility in which the following factor is not included

Options :

1. ✖ Crystal structure

2. ✔ Atomic weight

3. ✖ Atomic size

4. ✖ Electronegativity

Question Number : 68 Question Id : 28393610188 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When the wavelength of the incident X-ray increases, then the angle of diffraction is

Options :

1. ✖ decreases

2. ✔ increases

3. ✖ remains constant

4. ✖ shows no systematic variation

Question Number : 69 Question Id : 28393610189 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Alnico alloy is a

Options :

1. ✖ soft magnetic alloy

2.

✔ Permanent magnetic alloy

3. ✖ Semi-magnetic alloy

4. ✖ Nanomagnetic alloy

Question Number : 70 Question Id : 28393610190 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Quartz is a

Options :

1. ✖ Super plastic material

2. ✔ Piezoelectric material

3. ✖ Ferroelectric material

4. ✖ Creep resistant material

Question Number : 71 Question Id : 28393610191 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Diamond can be classified as a good

Options :

1. ✖ Electrical conductor

2. ✖ Superconductor

3. ✖ Semiconductor

4. ✔ Electrical insulator

Question Number : 72 Question Id : 28393610192 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The curie temperature of Nickel is

Options :

1. ✖ 770°C

2. ✖ 910°C

3. ✖ 1123°C

4. ✔ 358°C

Question Number : 73 Question Id : 28393610193 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

$SmCo_5$ is an example of

Options :

1.

✖ Ceramic material

2. ✖ Refractory material

3. ✔ Magnetic material

4. ✖ Insulator

Question Number : 74 Question Id : 28393610194 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following material is easily broken by the hammer?

Options :

1. ✖ Copper

2. ✖ Steel

3. ✔ Cast iron

4. ✖ Rubber

Question Number : 75 Question Id : 28393610195 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Rockwell hardness tester on C scale uses

Options :

1. ✔ 120° diamond cone indenter

2. ✖ Square base diamond pyramid

3. ✖ 10 mm diameter steel ball

4. ✖ 3 mm diameter steel ball

Question Number : 76 Question Id : 28393610196 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Nanomaterials have a large ratio between

Options :

1. ✖ Volume to surface area

2. ✔ Surface area to volume

3. ✖ length to surface area

4. ✖ Surface area to length

Question Number : 77 Question Id : 28393610197 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Devices used to operate at high temperature requires

Options :

1. ✖ High abrasion resistance

2. ✖ Good thermal conductivity

3. ✔ High creep resistance

4. ✖ High ductility and machinability

Question Number : 78 Question Id : 28393610198 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following materials exhibit high specific strength and fracture toughness?

Options :

1. ✖ Ceramics

2. ✖ Plastics

3. ✖ Composites

4. ✔ Metals

Question Number : 79 Question Id : 28393610199 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Dispersion hardening techniques is done mainly by _____ process

Options :

1. ✖ Casting

2. ✖ Welding

3. ✔ Powder metallurgy

4. ✖ Rolling

Question Number : 80 Question Id : 28393610200 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The most common carbide powders used in cemented carbides are

Options :

1. ✔ WC and TiC

2. ✖ SiC and CaC

3. ✖ B_4C and V_3C

4. ✖ MoC and B_4C

Question Number : 81 Question Id : 28393610201 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Stiffness is the property of the material by virtue of which it resists

Options :

1. ✔ Elastic deformation

2. ✖ Dendritic growth

3. ✖ Decay

4. ✖ Doping

Question Number : 82 Question Id : 28393610202 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The respective units for dislocation density and stress intensity factor are

Options :

1. ✖ m^2 and MPa.m

2. ✖ m^2 and $MPa.m^{1/2}$

3. ✔ m^{-2} and $MPa.m^{1/2}$

4. ✖ m^{-2} and MPa.m

Question Number : 83 Question Id : 28393610203 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

How Burger's vector is related to the edge dislocation line?

Options :

1. ✔ Perpendicular

2. ✖ Inclined

3. ✖ Parallel

4. ✖ Can either be parallel or perpendicular

Question Number : 84 Question Id : 28393610204 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

With respect to the matrix of Al-Cu alloys, G-P zones are

Options :

1. ✔ Coherent

2. ✖ Incoherent

3. ✖ Semi-coherent

4. ✖ Chemically indistinguishable

Question Number : 85 Question Id : 28393610205 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

As compared to the engineering stress-engineering strain curve, the true stress-true strain curve for a given material is

Options :

1. ✔ Lies above and to the left

2. ✖ Lies below and to the right

3. ✖ Crosses the engineering stress-engineering strain curve

4. ✖ Identical

Question Number : 86 Question Id : 28393610206 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A plastically deformed metal crystal at low temperature exhibits wavy slip line pattern due to

Options :

1. ✖ Dislocation pile-up

2. ✔ Large number of slip systems

3. ✖ Low stacking fault energy

4. ✖ Dislocation climb

Question Number : 87 Question Id : 28393610207 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fatigue crack mostly initiates at the

Options :

1. ✔ Surface

2. ✖ inclusion

3. ✖ Pore

4. ✖ soft spots

Question Number : 88 Question Id : 28393610208 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is FALSE for creep deformation?

Options :

1. ✔ The minimum creep rate is obtained in the primary stage (stage I).

2. ✖ Creep resistance decreases with decrease in grain size.

3. ✖ Coble creep occurs via grain boundary diffusion.

4. ✖ Nabarro-Herring creep occurs via lattice diffusion.

Question Number : 89 Question Id : 28393610209 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fibrous fracture occurs in

Options :

1. ✔ Ductile materials

2. ✖ Hard materials

3. ✖ Brittle materials

4. ✖ Viscous materials

Question Number : 90 Question Id : 28393610210 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Critical resolved shear stress in single crystal is calculated by applying

Options :

1. ✖ Bragg's law

2. ✖ Hooke's law

3. ✖ Coulomb's law

4. ✔ Schmid's law

Question Number : 91 Question Id : 28393610211 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Deformation twins are formed in metals when deformed at

Options :

1. ✔ high strain rate and low temperature

2. ✖ high strain rate and high temperature

3. ✖ low strain rate and low temperature

4. ✖ low strain and high temperature

Question Number : 92 Question Id : 28393610212 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Patenting process is a

Options :

1. ✖ wire drawing process

2. ✔ Heat treatment process for drawn wires

3. ✖ Coating process for wires

4. ✖ Deep drawing process

Question Number : 93 Question Id : 28393610213 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Coble creep is related to

Options :

1. ✖ Lattice diffusion

2. ✖ Pipe diffusion

3. ✔ Grain boundary diffusion

4. ✖ Dislocation climb

Question Number : 94 Question Id : 28393610214 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The plane strain fracture toughness parameter, K_{IC} has the units

Options :

1. ✔ $MPa\sqrt{m}$

2. ✖ MPa.m

3.

✖ $MPa.m^2$

4. ✖ $\sqrt{MPa.m}$

Question Number : 95 Question Id : 28393610215 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Fatigue failure may occur commonly in

Options :

1. ✖ aeroplanes

2. ✔ rail bridge

3. ✖ ships

4. ✖ Tool bit

Question Number : 96 Question Id : 28393610216 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Notch may be the main cause of fatigue failure is

Options :

1. ✖ Orowan theory

2. ✖ Griffth theory

3. ✔ Wood's concept

4. ✖ Jungham principle

Question Number : 97 Question Id : 28393610217 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A jet engine turbine block is normally manufactured by

Options :

1. ✖ Forging

2. ✖ Shell moulding

3. ✔ Investment casting

4. ✖ Rolling

Question Number : 98 Question Id : 28393610218 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Ductile to brittle transition for steels depends on

Options :

1. ✖ Tensile strength

2. ✖ Shear modulus

3. ✔ Strain rate

4. ✖ Damping capacity

Question Number : 99 Question Id : 28393610219 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Widest application of laser welding is in

Options :

1. ✔ Electronic industry

2. ✖ Heavy industry

3. ✖ Process industry

4. ✖ Structural work

Question Number : 100 Question Id : 28393610220 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Riser is not required for the casting of

Options :

1. ✔ Grey cast iron

2. ✖ White cast iron

3. ✖ At 4% Cu

4. ✖ Al-12% Si

Question Number : 101 Question Id : 28393610221 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Draft allowance given to pattern is for

Options :

1. ✖ Compensating the liquid state shrinkage

2. ✔ Easy removal of pattern from the mould cavity

3. ✖ Providing support for the core placement

4. ✖ Compensating the solidification shrinkage

Question Number : 102 Question Id : 28393610222 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In which process wax pattern is used

Options :

1.

✖ Shell moulding

2. ✖ Die casting

3. ✔ Investment casting

4. ✖ Sand casting

Question Number : 103 Question Id : 28393610223 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following shape of powder particles would tend to have the lowest interparticle friction?

Options :

1. ✔ Spherical

2. ✖ Flakes

3. ✖ Cubic

4. ✖ Triangular

Question Number : 104 Question Id : 28393610224 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following technique involves melting of the materials?

Options :

1. ✖ Thermal decomposition

2. ✖ Precipitation

3. ✖ Attrition

4. ✔ General atomization

Question Number : 105 Question Id : 28393610225 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The riser is designed such that the melt in the riser solidifies

Options :

1. ✖ Before casting solidifies

2. ✖ At the same time as casting solidifies

3. ✔ After casting solidifies

4. ✖ Irrespective of the solidification of the casting

Question Number : 106 Question Id : 28393610226 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Among the welding processes

[1] Laser Beam Welding

[2] Submerged Arc Welding

[3] Metal Inert Gas Welding

the width of the heat-affected zone in decreasing order is

Options :

1. ✖ $1 > 2 > 3$

2. ✔ $2 > 3 > 1$

3. ✖ $3 > 1 > 2$

4. ✖ $1 > 3 > 2$

Question Number : 107 Question Id : 28393610227 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Core prints are used to

Options :

1. ✖ Produce cores

2. ✖ Help removal of core

3. ✔ Support the core

4. ✖ Supply heat.

Question Number : 108 Question Id : 28393610228 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Zipper cracks occur

Options :

1. ✔ In the central portion of the strip

2. ✖ At the edges of the strip

3. ✖ Anywhere on the strip

4. ✖ On the surface of the rolls used in rolling operation.

Question Number : 109 Question Id : 28393610229 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Typical products made by impact extrusion are

Options :

1. ✖ Strips and sheets

2. ✖ Wires and rods

3. ✔ Tubular components

4. ✖ Circular rings

Question Number : 110 Question Id : 28393610230 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Springback in a sheet metal bending operation is due to

Options :

1. ✖ Overstraining

2. ✔ Elastic recovery of the metal

3. ✖ Overbending

4. ✖ Thick component

Question Number : 111 Question Id : 28393610231 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is difficult to solder?

Options :

1. ✖ Copper

2. ✔ Stainless steel

3. ✖ Silver

4. ✖ Brass

Question Number : 112 Question Id : 28393610232 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The common flux used in brazing is

Options :

1. ✖ Sodium nitrate

2. ✖ Silver nitrate

3. ✖ Barium

4. ✔ Borax

Question Number : 113 Question Id : 28393610233 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Alligatoring is a defect commonly observed in

Options :

1. ✔ Rolling

2. ✖ Extrusion

3.

✖ Forging

4. ✖ Drawing

Question Number : 114 Question Id : 28393610234 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Segregation is decreased by

Options :

1. ✖ Riser

2. ✖ Chaplets

3. ✖ Sulphur

4. ✔ Soaking of the ingot

Question Number : 115 Question Id : 28393610235 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Solidification is slower when the casting has

Options :

1. ✔ High volume to surface area ratio

2. ✖ Low volume to surface area ratio

3. ✖ Volume to surface area ratio is one

4. ✖ Surface area to volume is high

Question Number : 116 Question Id : 28393610236 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Swaging is an operation of

Options :

1. ✖ Hot Rolling

2. ✔ Forging

3. ✖ Extrusion

4. ✖ Piercing

Question Number : 117 Question Id : 28393610237 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Directional properties can be obtained in

Options :

1. ✖ Hot working

2.

✖ Warm working

3. ✔ Cold working

4. ✖ Quenching

Question Number : 118 Question Id : 28393610238 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A foil is a

Options :

1. ✔ Thin sheet

2. ✖ Thin slab

3. ✖ Thin plate

4. ✖ Thin billet

Question Number : 119 Question Id : 28393610239 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Hemming is an operation in

Options :

1. ✖ Rolling

2. ✖ Forging

3. ✔ Sheet metal forming

4. ✖ Impact extrusion

Question Number : 120 Question Id : 28393610240 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Flashless precision forging occurs in

Options :

1. ✖ Swaging

2. ✖ Punching

3. ✔ Coining

4. ✖ Upsetting