

# Telangana State Council Higher Education

## Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

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

<b>Change Background Color :</b>	No
<b>Change Theme :</b>	No
<b>Help Button :</b>	No
<b>Show Reports :</b>	No
<b>Show Progress Bar :</b>	No

## **Metallurgical Engineering**

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

## **Mathematics**

<b>Section Id :</b>	283936195
<b>Section Number :</b>	1
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	10

Number of Questions to be attempted : 10  
Section Marks : 10  
Enable Mark as Answered Mark for Review and Response : Yes Clear  
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  $3 \times 3$  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  $\vec{f} = 3xy\vec{i} - y^2\vec{j}$ , then  $\int_C \vec{f} \cdot d\vec{r}$  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  $x + 2x^2 + 3x^3 + 4x^4 + \dots$  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  $(x^3 D^3 + 3x^2 D^2 + xD + 8)y = \cos(\log x)$  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. ✘  $\int \int \int_{s s s}^{\infty \infty \infty} \bar{f}(s) ds ds ds$

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  $\frac{1}{3}$ <sup>rd</sup>

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. ✗
4. ✗

3. ✘  $\Delta G = -nF/E$

✘  $\Delta G = nFE$

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

4.

2. ✓ Rubber

3. ✗ Iron

✗ 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 :

4.

1. ✘ Zero at the plate surface

2. ✘ Positive at the surface

3. ✘ Very steep at the surface

✔ Zero at the top of the thermal boundary layer.

4.

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. ✘  $10 \text{ W/m}^2$

2. ✘  $110 \text{ W/m}^2$

3. ✔  $450 \text{ W/m}^2$

4. ✘  $1 \text{ W/m}^2$

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. ✘ Gyrary

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<sub>2</sub>

2.  TiO<sub>2</sub>

3.  WO<sub>2</sub>

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<sub>5</sub> 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  $MPa \cdot m^{1/2}$

3. ✔  $m^{-2}$  and  $MPa \cdot m^{1/2}$

4. ✘  $m^{-2}$  and  $MPa \cdot m$

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. ✔  $\text{MPa}\sqrt{\text{m}}$
2. ✘  $\text{MPa}\cdot\text{m}$
3. ✘  $\text{MPa}\cdot\text{m}^2$
4. ✘  $\sqrt{\text{MPa}}\cdot\text{m}$

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. ✘ Griffith 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

