Andhra Pradesh State Council of Higher Education

Question Paper Name :	Metallurgy MT 30th Sep 2020 Shift 1
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Metallurgy (MT)

Group Number :	1
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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
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Metallurgy (MT)

Section Id :	29996540
Section Number :	1
Mandatory or Optional :	Mandatory
Number of Questions :	120
Section Marks :	120
Display Number Panel :	Yes
Group All Questions :	Yes
Mark As Answered Required? :	Yes
Sub-Section Number :	1
Sub-Section Id :	29996540
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 2999654681 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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The eigen values of a matrix M are 15, 3, 0 then det(M) = _____.

Options :

1. 20

2. 18

3. 0

4. –10

Question Number : 2 Question Id : 2999654682 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Suppose A is a real 3×3 orthogonal matrix. Then pick the only correct statement.

Options :

1. $det(A) = 2$

2. $det(A) = \pm 1$

3. $det(A) = \pm i$

4. $det(A) = 0$

Question Number : 3 Question Id : 2999654683 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$$\lim_{x \to 0} \frac{\log x}{\cot x} = ?$$

Options :

1. 1

2. $\frac{1}{2}$

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3. 0

4. ∞

Question Number : 4 Question Id : 2999654684 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The value of the surface integral $\iint_S \bar{F}.\hat{n}\ dS$ where $\bar{F} = 7x\,\hat{i} - z\,\hat{k}$ and S is the sphere $x^2 + y^2 + z^2 = 4$ is

Options :

1. 4π

2. 64π

3. 0

4. 6π

Question Number : 5 Question Id : 2999654685 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The particular integral of $\frac{d^3y}{dx^3} + 4\frac{dy}{dx} = \sin 2x$ is

Options :

1. $\frac{x}{4}\sin 2x$

2. $\frac{-x}{8}\sin 2x$

3. $\frac{x}{8}\sin x$

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4. $\frac{-x}{4}\sin 2x$

Question Number : 6 Question Id : 2999654686 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

How many boundary conditions are required to solve the one dimensional heat flow equation?

Options :

1. 0

2. 1

3. 2

4. 3

Question Number : 7 Question Id : 2999654687 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is true for a Normal distribution with parameter μ and σ^2

Options :

1. $0 < \mu < \infty , \sigma^2 > 0$

2. $0 < \mu < \infty , \sigma^2 \geq 0$

3. $-\infty < \mu < \infty , \sigma^2 > 0$

4. $\mu < \infty , \sigma^2 = 0$

Question Number : 8 Question Id : 2999654688 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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Two cards are selected at random from 10 cards numbered 1 to 10. The probability p that the sum is odd if the two cards are drawn one after the other with replacement is

Options :

1. 1/5

2. 1/8

3. 1/4

4. 1/2

Question Number : 9 Question Id : 2999654689 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The solution $y(1.2)$ of the initial value problem $\frac{dy}{dx} = y^2 + x^2, \quad y(1) = 2, \quad h = 0.2$

using the Euler's method.

Options :

1. 3.3

2. 3.0

3. 2.5

4. 4.0

Question Number : 10 Question Id : 2999654690 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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Find the value of $\int_0^4 f(x)\,dx$ by Trapezoidal rule from the given table.

x	0	1	2	3	4
f(x)	1	5	9	13	16

Options :

1. 35.5

2. 36.5

3. 37.5

4. 34.5

Question Number : 11 Question Id : 2999654691 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Free energy change for Vaporisation of pure substance is _____.

Options :

1. Zero

2. Unity

3. Positive

4. Negative

Question Number : 12 Question Id : 2999654692 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Chemical potential of a multicomponent system is equivalent to _____.

Options :

1. Molar free energy

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2. Partial molar free energy

3. Molar free energy change

4. Molar concentration change

Question Number : 13 Question Id : 2999654693 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Increase of point defect concentration in a crystal, its entropy _____.

Options :

1. decreases

2. increases

3. remains unaffected

4. initially increases and then decreases

Question Number : 14 Question Id : 2999654694 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Concentration of the reactant for a first order chemical reaction decreases _____ with time.

Options :

1. exponentially

2. linearly

3. inversely

4. logarithmically

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Question Number : 15 Question Id : 2999654695 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A metal is electrochemically polarized which is lower than the standard reduction potential of the metal. The overvoltage is _____.

Options :

1. negative

2. zero

3. positive

4. initially positive and then negative

Question Number : 16 Question Id : 2999654696 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Metals positioned at the top of the electromotive series are_____.

Options :

1. least active

2. most active

3. most stable

4. most noble

Question Number : 17 Question Id : 2999654697 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Passivity refers to _____.

Options :

1. cathodic protection of metals

2. corrosion due to dissolution

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3. no change in corrosion current

4. further deterioration of metal

Question Number : 18 Question Id : 2999654698 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Diffusivity is the coefficient relating flux to

Options :

1. Concentration

2. Concentration gradient

3. Temperature

4. Temperature gradient

Question Number : 19 Question Id : 2999654699 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Faster diffusion is possible with

Options :

1. Lower temperature

2. Substitutional atom

3. Interstial atom

4. Higher packing factor

Question Number : 20 Question Id : 2999654700 Question Type : MCQ Display Question Number : Yes

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Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following is not a method to determine corrosion rates?

Options :

1. Tafel extrapolation method

2. Linear polarization

3. Surface potential measurements

4. Immersion testing

Question Number : 21 Question Id : 2999654701 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If a metal undergoes pitting corrosion it becomes

Options :

1. Uniformly thinner

2. Uniformly thicker

3. Perforated

4. Elongated

Question Number : 22 Question Id : 2999654702 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following couples will show the highest rate of corrosion in sea water?

Options :

1. Copper and steel

2. Copper and magnesium

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3. Copper and zinc

4. Copper and brass

Question Number : 23 Question Id : 2999654703 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In the Ellingham diagram of oxides, the reaction that is parallel to the temperature axis is

Options :

1. $2C + O_2 = 2CO$

2. $2Zn + O_2 = 2ZnO$

3. $C + O_2 = CO_2$

4. $2CO + O_2 = 2CO_2$

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Question Number : 24 Question Id : 2999654704 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is necessary for maintaining equilibrium between two phases x and y having components 1 and 2 respectively in each of them in varying proportions?

Options :

1. Chemical potential of both the components in each phase has to be equal to each other.

2. Chemical potential of each component has to be the same in both the phases.

3. Entropy of each component has to be the same in each phase.

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4. Enthalpy of both the components in each phase have to be equal.

Question Number : 25 Question Id : 2999654705 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Miscibility gap occurs when _____.

Options :

1. enthalpy change is negative

2. entropy change is negative

3. enthalpy change is positive

4. entropy change is positive

Question Number : 26 Question Id : 2999654706 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A fluid flowing with a velocity of 15m/s is moving on a surface which is moving at a speed of 5m/s. What is the speed of the fluid at the point of contact of the fluid at the surface?

Options :

1. 10 m/s

2. 15 m/s

3. 5 m/s

4. 20 m/s

Question Number : 27 Question Id : 2999654707 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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In a homogeneous system (with C as the number of components) in equilibrium, the total number of independent intensive thermodynamic variables are _____.

Options :

1. $C-1$

2. $C+1$

3. C

4. $C+2$

Question Number : 28 Question Id : 2999654708 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

_____ explains the equilibrium constant for any chemical reaction.

Options :

1. Henry's law

2. Hess's law

3. Raoult's law

4. Law of mass action

Question Number : 29 Question Id : 2999654709 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For an ideal gas, the activity coefficient is always _____at all pressures.

Options :

1. negative

2. unity

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3. zero

4. unpredictable

Question Number : 30 Question Id : 2999654710 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is true regarding corrosion?

Options :

1. It occurs on a single material by both oxidation and reduction.

2. It needs to come in contact with another metal/alloy necessarily for corrosion to occur.

3. Requires no medium for corrosion to occur.

4. It increases the life of the component.

Question Number : 31 Question Id : 2999654711 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Quick sand is an example of _____.

Options :

1. Bingham plastic

2. dilatant fluid

3. Newtonian fluid

4. pseudoplastic fluid

Question Number : 32 Question Id : 2999654712 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Units of the rate constant for a second order reaction is _____.

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Options :

1. $moles^{1}.sec^{-1}$

2. $moles^{-1}.\ sec^{-1}$

3. $moles^{-1}\ .sec^{1}$

4. $moles^{1}.\ sec^{1}$

Question Number : 33 Question Id : 2999654713 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If two systems P and Q are in thermal equilibrium with a third system M, then P and Q will also be in thermal equilibrium with each other. This statement is due to _____.

Options :

1. First law of thermodynamics

2. Second law of thermodynamics

3. Third law of thermodynamics

4. Zeroth law of thermodynamics

Question Number : 34 Question Id : 2999654714 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Change in enthalpy when one mole of substance is completely burnt in oxygen is called _____.

Options :

1. heat of formation

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2. heat of combustion

3. heat of solution

4. heat of fusion

Question Number : 35 Question Id : 2999654715 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of these metals is predominantly extracted by leaching?

Options :

1. Fe

2. Al

3. Pb

4. Au

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Question Number : 36 Question Id : 2999654716 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In floatation the reagent that modifies the surface properties of mineral is_____.

Options :

1. Frother

2. Activator

3. Collector

4. Depressor

Question Number : 37 Question Id : 2999654717 Question Type : MCQ Display Question Number : Yes

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Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The chemical processes throughout the volume of the blast furnace happens ____.

Options :

1. Top to bottom

2. Bottom to top

3. Firstly, top to bottom and then bottom to top

4. Firstly, bottom and then to top

Question Number : 38 Question Id : 2999654718 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Condition for rimming steel ____.

Options :

1. High Carbon and Low Silicon

2. High Silicon and Low Carbon

3. Low Silicon and Low carbon

4. High Silicon and High Carbon

Question Number : 39 Question Id : 2999654719 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Order of elements for deoxidation of steel____.

Options :

1. Al, Mn, Si

2. Si, Mn, Al

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3. Al, Si, Mn

4. Mn, Si, Al

Question Number : 40 Question Id : 2999654720 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

High top pressure in blast furnace results in increase of____.

Options :

1. Si

2. S

3. Mn

4. P

Question Number : 41 Question Id : 2999654721 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The Midrex iron making process uses____.

Options :

1. both CO and H_2 for reduction

2. Fluidized bed reactor

3. recycling of exit gas partly

4. only H_2 for reduction

Question Number : 42 Question Id : 2999654722 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Density of the matte (mixture of sulphides) is ____.

Options :

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1. less than that of slag

2. more than that of metal

3. equal to that of slag

4. in between that of slag and metal

Question Number : 43 Question Id : 2999654723 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Role of cryolite in the electrolysis of Aluminium is____.

Options :

1. Lowering of fluidity

2. Lowering of melting point

3. Rising of melting point

4. Rising of fluidity

Question Number : 44 Question Id : 2999654724 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Roasted Zinc ore is leached with _____.

Options :

1. dilute H_2SO_4

2. dilute HCl

3. dilute HNO_3

4. concentrated H_2SO_4

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Question Number : 45 Question Id : 2999654725 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Pidgeon process is meant for ____.

Options :

1. Lead

2. Magnesium

3. Zinc

4. Tin

Question Number : 46 Question Id : 2999654726 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Carbonyl process is used for refining ____.

Options :

1. Zinc

2. Tungsten

3. Nickel

4. Magnesium

Question Number : 47 Question Id : 2999654727 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Flotation beneficiation is based on the principle of ____.

Options :

1. Mineral surface hydrophobicity

2. Gravity difference

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3. Chemical reactivity

4. Particle size difference

Question Number : 48 Question Id : 2999654728 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following has the highest reducibility in a blast furnace?

Options :

1. Sinters

2. Iron ore

3. Pellets

4. Coke

Question Number : 49 Question Id : 2999654729 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is the main constituent in argentite?

Options :

1. Au

2. Ag

3. Pb

4. Cu

Question Number : 50 Question Id : 2999654730 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following methods is famous for producing stainless steel making?

Options :

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1. Sand casting

2. AOD

3. Powder metallurgy

4. Welding

Question Number : 51 Question Id : 2999654731 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

What is the amount of alumina that can be dissolved in cryolite?

Options :

1. 1-3%

2. 3-7%

3. 8-15%

4. 20-35%

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Question Number : 52 Question Id : 2999654732 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

M_{10} index of coke indicates _____.

Options :

1. compressive strength

2. hardness

3. abrasion resistance

4. impact strength

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Question Number : 53 Question Id : 2999654733 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Steel with minimum deoxidation is called as _____.

Options :

1. oxidised

2. killed

3. rimmed

4. semi-killed

Question Number : 54 Question Id : 2999654734 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Pellets are not as popular burden as sinter in the iron blast furnace because of their _____.

Options :

1. shape

2. poor reducibility

3. swelling tendency

4. low mechanical strength

Question Number : 55 Question Id : 2999654735 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is used to produce feed for primary and secondary crushing?

Options :

1. Inclined Crusher

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2. Grizzles

3. Trommel

4. Screens

Question Number : 56 Question Id : 2999654736 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

An Fe – 1%C alloy is cooled slowly from 1000°C to room temperature. The resultant microstructure will consist of____.

Options :

1. 100% Pearlite

2. 100% Cementite

3. Cementite + Pearlite

4. Ferrite + Pearlite

Question Number : 57 Question Id : 2999654737 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Nitrogen stabilizes _____.

Options :

1. Ferrite

2. Pearlite

3. Cementite

4. Austenite

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Question Number : 58 Question Id : 2999654738 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Element used in modification of Cast Al-Si alloys is____.

Options :

1. Mg

2. Na

3. Cr

4. Cu

Question Number : 59 Question Id : 2999654739 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Stretcher strains are eliminated by the addition of____.

Options :

1. Vanadium

2. Copper

3. Manganese

4. Nitrogen

Question Number : 60 Question Id : 2999654740 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Vulcanization requires the _____ of polymeric molecules

Options :

1. Branching

2. Cross linking

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3. Thermosetting

4. Oxidation

Question Number : 61 Question Id : 2999654741 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Hydrogen bonds are stronger than ____.

Options :

1. Ionic bonds

2. Covalent bonds

3. Metallic bonds

4. Van der waals bonds

Question Number : 62 Question Id : 2999654742 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Grain size determination using X-ray diffraction is based on____.

Options :

1. Debye rings

2. Line broadening

3. Extra lines

4. Lattice parameter

Question Number : 63 Question Id : 2999654743 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

After the recrystallization, grain growth is due to____.

Options :

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1. Grain boundary curvature

2. Internal energy

3. Vacancies

4. Dislocations

Question Number : 64 Question Id : 2999654744 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Strengthening of micro-alloyed steels is mainly due to____.

Options :

1. Grain boundary pinning

2. Work hardening

3. Dispersion hardening

4. Precipitation Hardening

Question Number : 65 Question Id : 2999654745 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A peak in X ray diffraction pattern corresponding to {311} planes of FCC metal is observed at $2\theta = 78°$. IF incident beam has a wavelength of 0.154 nm, the lattice parameter is approximately____.

Options :

1. 0.2 nm

2. 0.3 nm

3. 0.4 nm

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4. 0.6 nm

Question Number : 66 Question Id : 2999654746 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Silicon steel used for electrical equipment contains the following amount of silicon.

Options :

1. 0.2%-0.5%

2. 3.2%-3.5%

3. 6.2%-6.5%

4. 8%-10%

Question Number : 67 Question Id : 2999654747 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The number of atoms per unit cell of BCC, FCC and HCP metals are____.

Options :

1. 4, 2, 6, respectively

2. 6, 4, 2, respectively

3. 2, 4, 6, respectively

4. 2,4,8, respectively

Question Number : 68 Question Id : 2999654748 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following is a ferrite stabilizer in steel?

Options :

1. Ni

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2. Cu

3. Cr

4. Mn

Question Number : 69 Question Id : 2999654749 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following expands upon solidification?

Options :

1. Low carbon steel

2. High carbon steel

3. White cast iron

4. Grey cast iron

Question Number : 70 Question Id : 2999654750 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Super alloys are _____.

Options :

1. Au based alloys

2. Cu based alloys

3. Ni based alloys

4. Mg based alloys

Question Number : 71 Question Id : 2999654751 Question Type : MCQ Display Question Number : Yes

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Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The number of planes that belongs to the (111) family____.

Options :

1. 6

2. 8

3. 12

4. 10

Question Number : 72 Question Id : 2999654752 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

X-ray diffraction spots of transmission laue's photograph form____.

Options :

1. hyperbola

2. circle

3. ellipse

4. straight line

Question Number : 73 Question Id : 2999654753 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following systems exhibit complete solid solubility?

Options :

1. Fe-Cu

2. Pb-Sn

3. Cu-Ni

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4. Cu-Zn

Question Number : 74 Question Id : 2999654754 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

An annealed plane carbon steel showing fully pearlitic structure has carbon content of____.

Options :

1. 0.01 wt%

2. 0.02 wt%

3. 0.77 wt%

4. 1.2 wt%

Question Number : 75 Question Id : 2999654755 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

German silver is an alloy of _____.

Options :

1. Cu, Ni and Ag

2. Cu, Al and Ag

3. Cu, Ni and Zn

4. Ag, Ni and Zn

Question Number : 76 Question Id : 2999654756 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The most effective way of improving yield strength of mild steel is ____.

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Options :

1. Cold working

2. Precipitation

3. Solid solution

4. Grain refinement

Question Number : 77 Question Id : 2999654757 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Fatigue resistance of the steel decreases by _____.

Options :

1. surface polishing

2. grain refinement

3. decarburization

4. shot peening

Question Number : 78 Question Id : 2999654758 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Difference in Tresca and Von-Mises yield criteria is in ____.

Options :

1. Principal stresses

2. Strain energy

3. Fracture criterion

4. Principal strains

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Question Number : 79 Question Id : 2999654759 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A sharp break in the dislocation moving it out of the slip plane forms____.

Options :

1. Kink

2. Sessile dislocation

3. Jog

4. Partial dislocation

Question Number : 80 Question Id : 2999654760 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Work hardening rate is high in materials with ____.

Options :

1. high stacking fault energy

2. low stacking fault energy

3. high ductility

4. high elasticity

Question Number : 81 Question Id : 2999654761 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Service life of the fabricated components with defect depends on ____.

Options :

1. Fatigue limit

2. Fracture toughness

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3. DBTT

4. Work hardening ability

Question Number : 82 Question Id : 2999654762 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The mechanism of creep that occurs at high stress is ____.

Options :

1. dislocation creep

2. diffusion creep

3. grain boundary sliding

4. dislocation glide

Question Number : 83 Question Id : 2999654763 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Load (Kgs) applied to test soft metals in Brinnel Hardness test is _____.

Options :

1. 1000

2. 500

3. 200

4. 100

Question Number : 84 Question Id : 2999654764 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Basis for radiography testing is____.

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Options :

1. Reflection

2. Absorption

3. Diffraction

4. Scattering

Question Number : 85 Question Id : 2999654765 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If D is the diagonal of projected indentation, Vickers hardness is proportional to____.

Options :

1. D

2. D^2

3. $1/D$

4. $1/D^2$

Question Number : 86 Question Id : 2999654766 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Number of slip systems of fcc is ____.

Options :

1. 3

2. 6

3. 8

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4. 12

Question Number : 87 Question Id : 2999654767 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In screw dislocation, the direction of movement is____.

Options :

1. Parallel to the stress direction

2. Perpendicular to the stress direction

3. At 120° to the stress direction

4. At 60° to the stress direction

Question Number : 88 Question Id : 2999654768 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For metals with low stacking fault energy, the activation energy for softening in hot working is____.

Options :

1. Lower

2. Higher

3. Has no effect

4. Remains constant

Question Number : 89 Question Id : 2999654769 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Tungsten filament used in electric bulb is processed by _____.

Options :

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1. extrusion

2. wire drawing

3. cast

4. powder metallurgy

Question Number : 90 Question Id : 2999654770 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The engineering stress strain curve for a ceramic material is____.

Options :

1. Parabolic

2. Exponential

3. Logarithmic

4. Linear

Question Number : 91 Question Id : 2999654771 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Identify the antisymmetric tensor from the following.

Options :

1. Stress tensor

2. Strain tensor

3. Rotational tensor

4. Volumetric strain tensor

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Question Number : 92 Question Id : 2999654772 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following statements are true?

A. Volume is constant during elastic deformation
B. Volume is constant during plastic deformation
C. Possibility of twinning is more at high strain rates
D. Stacking fault width is inversely related to strain hardening rate

Options :

1. A and C

2. A and D

3. B and C

4. B and D

Question Number : 93 Question Id : 2999654773 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A test specimen of length 12 mm is strained to 25% tensile engineering strain. What is the true strain value?

Options :

1. 0.4

2. 0.22

3. 0.52

4. 0.63

Question Number : 94 Question Id : 2999654774 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Loading in mode I fracture refers to _____.

Options :

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1. Opening mode

2. Sliding mode

3. Tearing mode

4. Twisting mode

Question Number : 95 Question Id : 2999654775 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The generation of strain-free grains in a deformed metal upon thermal treatment at elevated temperature is called _____.

Options :

1. Recovery

2. Recrystallization

3. Strain hardening

4. Strain softening

Question Number : 96 Question Id : 2999654776 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Spring back effect is related to _____.

Options :

1. Sheet bend radius

2. Elasticity

3. Sheet thickness

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4. Bend degree

Question Number : 97 Question Id : 2999654777 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The ideal shape of a riser is _____.

Options :

1. Conical

2. Cubic

3. Spherical

4. Cylindrical

Question Number : 98 Question Id : 2999654778 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Casting defect Hot tears are caused by ____.

Options :

1. Sand shearing from the cope surface

2. Two streams of metals that are too cold to figure properly

3. Discontinuity in metal casting resulting from hindered contraction

4. Excessive gaseous substances not able to escape

Question Number : 99 Question Id : 2999654779 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Magnetic particle inspection is not a reliable method for detecting _____.

Options :

1. Laps

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2. Deep seated cavities

3. Surface cracks

4. Seams

Question Number : 100 Question Id : 2999654780 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is an exclusively cold working process?

Options :

1. rolling

2. extrusion

3. deep drawing

4. spinning

Question Number : 101 Question Id : 2999654781 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Liquid phase sintering is used in sintering of _____.

Options :

1. carbide powders

2. aluminium powders

3. TD-nickel powders

4. ferrites

Question Number : 102 Question Id : 2999654782 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

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Microporsity of castings is due to _____.

Options :

1. Eutectic freezing

2. Short range freezing

3. Long range freezing

4. Peritectic freezing

Question Number : 103 Question Id : 2999654783 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Weld decay may occur in Austenitic stainless steel when heated to____.

Options :

1. 200-300°C

2. 300-400°C

3. 500-800°C

4. 400-500°C

Question Number : 104 Question Id : 2999654784 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The process with highest heat intensity is _____.

Options :

1. EBW

2. SMAW

3. GMAW

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4. PAW

Question Number : 105 Question Id : 2999654785 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Material easy to weld with resistance welding is _____.

Options :

1. Low carbon steel

2. Brass

3. Aluminium

4. Stainless steel

Question Number : 106 Question Id : 2999654786 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The most common soldering material of tinmans solder ____.

Options :

1. is an eutectic mixture of 38% Sn and 62% Pb

2. has a melting point of 232°C

3. is an eutectic mixture of 62% Sn and 38% Pb

4. is a mixture of 35% Sn and 65% Pb

Question Number : 107 Question Id : 2999654787 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Pick out the correct statement pertaining to rolling.

Options :

1. if back tension is applied, the neutral point moves toward the roll entrance

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2. if front tension is applied, the neutral point will move toward the roll exit

3. presence of tension in the plane of the sheet increases the rolling load

4. presence of tension in the plane of the sheet decreases the rolling load

Question Number : 108 Question Id : 2999654788 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The process of heating a mass of fine particles to the stage of incipient fusion is____.

Options :

1. Sintering

2. Palletization

3. Nodulizing

4. Blending

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Question Number : 109 Question Id : 2999654789 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The purpose of using flux in soldering is to____.

Options :

1. Prevent oxide formation

2. Increase fluidity of solder metal

3. Lower the melting temperature of the solder

4. Fill up gaps lefts in a bad joint

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Question Number : 110 Question Id : 2999654790 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following is frequently used to avoid sensitization and weld decay of austenitic stainless steels?

Options :

1. Reducing carbon content

2. Increasing carbon content

3. Eliminating strong carbide formers

4. Reducing chromium content

Question Number : 111 Question Id : 2999654791 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following are compensated by riser and shrinkage allowances respectively?

Options :

1. Volumetric shrinkage and solid shrinkage.

2. Both are used only to compensate volumetric shrinkage.

3. Both are used only to compensate solid shrinkage.

4. Runner is used to compensate volumetric shrinkage and riser for solid shrinkage.

Question Number : 112 Question Id : 2999654792 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Maximum densification occurs in _____ stage of sintering.

Options :

1. first stage

2. second stage

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3. third stage

4. fourth stage

Question Number : 113 Question Id : 2999654793 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The extrusion ratios which can be obtained for non-ferrous metals can be as high as _____.

Options :

1. 20:1

2. 60:1

3. 100:1

4. 400:1

Question Number : 114 Question Id : 2999654794 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In the absence of strain and redundant work, the maximum possible reduction in area is given by____.

Options :

1. 0.53

2. 0.63

3. 0.73

4. 0.83

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Question Number : 115 Question Id : 2999654795 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A mixture of 50% sand and 50% clay is called _____ sand.

Options :

1. loam

2. dry

3. green

4. bentonite

Question Number : 116 Question Id : 2999654796 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Riser is not required for the castings of _____.

Options :

1. grey cast iron

2. white cast iron

3. Al-4% Cu alloy

4. Al-12% Si alloy

Question Number : 117 Question Id : 2999654797 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Patenting process is a _____.

Options :

1. wire drawing process

2. heat treatment for drawn wires

3. coating process for wires

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4. deep drawing process

Question Number : 118 Question Id : 2999654798 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Production of castings in large quantity use _____ pattern.

Options :

1. polystyrene

2. metal

3. thermocol

4. wax

Question Number : 119 Question Id : 2999654799 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

_____gas is passed in sodium silicate moulding process.

Options :

1. Nitrogen

2. Argon

3. Carbon dioxide

4. Hydrogen

Question Number : 120 Question Id : 2999654800 Question Type : MCQ Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which one of the following carbon equivalent in steel is considered good for weldability?

Options :

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1.0

1.

0.8

2.

0.6

3.

0.4

4.

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