

University of Mumbai
Examination 2020 under cluster- PCOE

Program: Chemical Engineering

Curriculum Scheme: Rev 2012

Examination: Second Year Semester IV

Course Code: CHC404 and Course Name: Material Science and Engineering

Time: 1 hour

Max. Marks: 50

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For the students:- All the Questions are compulsory and carry equal marks .

Q1.	What is meant by malleability?
Option A:	Metals undergo plastic deformation under compressive stresses
Option B:	Metals can be drawn into wires
Option C:	Metals become brittle and crack
Option D:	Metals become radioactive
Q2.	Why are internal stresses not produced in hot working process?
Option A:	Microstructures undergo distortion
Option B:	Recrystallization does not occur during hot working process
Option C:	Recrystallization occurs during hot working process
Option D:	Metals undergo brittle fracture
Q3.	Foreign species is present in which of the following defects?
Option A:	Interstitial defect
Option B:	Vacancy
Option C:	Substitutional defect
Option D:	Edge dislocation
Q4.	Schottky and Frenkel defects are
Option A:	Both interstitial defects
Option B:	Both vacancy defects
Option C:	Interstitial and vacancy defects respectively
Option D:	Vacancy and interstitial defects respectively
Q5.	Which of the following is associated with minimum plastic deformation?

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Option A:	Ductile fracture
Option B:	Brittle fracture
Option C:	Fatigue
Option D:	Creep
Q6.	Below which point does fatigue occur?
Option A:	Ultimate strength
Option B:	Fracture point
Option C:	Elastic limit
Option D:	Yield point
Q7.	Which of the following is not a characteristic of glass-fiber reinforced composites?
Option A:	Low density
Option B:	Low impact resistance
Option C:	High tensile strength
Option D:	Excellent chemical and corrosion resistance
Q8.	Which of the following is a type of particle-reinforced composite?
Option A:	Continuous
Option B:	Laminates
Option C:	Dispersion-strengthened
Option D:	Sandwich panels
Q9.	In which of the following applications is silicon carbide used?
Option A:	Making cement and glass
Option B:	Disinfecting water of ponds
Option C:	Cutting very hard substances
Option D:	Making casts for statues
Q10.	Among the various allotropes of carbon

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Option A:	Coke is the hardest, graphite is the softest
Option B:	Diamond is the hardest, coke is the softest
Option C:	Diamond is the hardest, graphite is the softest
Option D:	Diamond is the hardest, lamp black is the softest
Q11.	Protons attract electrons. Then why do electrons not fall on the nucleus?
Option A:	Neutrons repel the electrons
Option B:	Electrons in ground state cannot radiate energy
Option C:	At very small distances, protons repel electrons
Option D:	Inner electrons repel those in outer orbitals
Q12.	Young's Double Slit Experiment was conducted in _____
Option A:	1802
Option B:	1889
Option C:	1925
Option D:	1930
Q13.	Which of the following is not a characteristic of wave function?
Option A:	Continuous
Option B:	Single valued
Option C:	Differentiable
Option D:	Physically Significant
Q14.	Which of the Bohr's postulates was incorrect?
Option A:	Energy of electrons is quantized
Option B:	Momentum of electrons is quantized
Option C:	Electrons release energy when shifting from excited state to ground state
Option D:	Electrons revolve around the nucleus in fixed circular orbits
Q15.	Which if the following is not an SI unit?
Option A:	Kilogram
Option B:	Mole
Option C:	Atomic Mass Unit
Option D:	Coulomb
Q16.	In which of the following magnetic moment is zero?
Option A:	Diamagnetic material
Option B:	Paramagnetic material
Option C:	Ferromagnetic material
Option D:	Ferrimagnetic material
Q17.	At high temperature a Ferro magnet becomes _____
Option A:	Diamagnetic
Option B:	Paramagnetic
Option C:	Hard Ferro magnet

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Option D:	Soft Ferro Magnet
Q18.	Flow of electrons is affected by the following
Option A:	Thermal vibrations only
Option B:	Impurity atoms only
Option C:	Crystal defects only
Option D:	Thermal vibrations, impurity atoms and crystal defects
Q19.	Nylon threads are made of
Option A:	polyester polymer
Option B:	polyamide polymer
Option C:	polyethylene polymer
Option D:	polyvinyl polymer
Q20.	Which of the following factors play a vital role in the corrosion process?
Option A:	Temperature
Option B:	Solute concentration
Option C:	Both temperature and solute concentration
Option D:	Neither temperature nor solute concentration
Q21.	Which of the following influence deterioration of polymers?
Option A:	Weather only
Option B:	Radiation only
Option C:	Temperature only
Option D:	Weather, Radiation and Temperature
Q22.	Passivity is not reason for inertness of which of the following?
Option A:	Au
Option B:	Al
Option C:	Ti
Option D:	Ni
Q23.	Which of the following salts will give an aqueous solution having pH of almost 7?
Option A:	Sodium Carbonate
Option B:	Ammonium Nitrate
Option C:	Sodium Chloride
Option D:	Calcium Chloride
Q24.	Leakage of which of the following gases caused the Bhopal gas tragedy?
Option A:	Carbon monoxide
Option B:	Methyl isocyanate
Option C:	Hydrogen sulphide
Option D:	Nitrous oxide
Q25.	Which one among the following substances evolves heat when dissolved in water?
Option A:	Potassium nitrate

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Option B:	Calcium oxide
Option C:	Glucose
Option D:	Sodium chloride