IIM Kalpakkam Chapter

1. A variety of HAEMATITE (Fe_2O_3), occurs as rhombohedra crystals. It is black in colour and has attractive metallic lusture. What is its common name?
   SPECULAR IRON
2. Indian weaponry was famous in history. What was the alloy used for this called?
   WOOTZ STEEL
3. Name the element that is named after the Greek Goddess of moon & is today very essential to the process of reprography?
   SELENIUM
4. Name the metal produced at the Zawar Mines in Rajasthan?
   ZINC
5. What is the common name for the chemical, $CaSO_4.2.H_2O$?
   PLASTER OF PARIS
6. Which ionic compound is known as “Lunar caustic”?
   $AgNO_3$, SILVER NITRATE
7. What is the name given to the alloy of elements Gold, Silver, Copper, Tin and Zinc that
   was use in the making of idols in temples.
   PANCHALOHA
8. What is the name given to describe the phenomenon in which there are dimensional changes associated with the magnetisation of a material such as Fe, Ni, Cu etc.
   AGNETOSTRICTION
9. An effect whereby a conductor carrying an electric current perpendicular to an applied magnetic field develops a voltage gradient transverse to both current and magnetic field is called as
   HALL EFFECT
10. What is the name given to the phenomenon when the material exhibits spontaneous electric polarisation that changes with heating
    PYROELECTRICITY

11. When a ferromagnetic material such as Fe is magnetised, while the magnetisation current is increased continuously, the magnetisation does not increase continuously, but as a series of small jumps. What is the name of this phenomenon?
    BARKHAUSEN EFFECT

12. The expulsion of magnetic flux by a superconducting material is referred to as
    MEISSNER EFFECT

13. In certain crystals such as calcite, the light travels at different speeds in different directions. What is this phenomenon called?
    BI-REFRINGENCE

14. A type of deformation behaviour, which although results in a complete recovery after the removal of stress, where a part of the deformation is viscous is called as
    VISCO-ELASTICITY

15. A tree like pattern that is usually formed by the solidification of a metal is called by a specific name. What is it?
    DENDRITE

16. "Nataraja" idols were made by some casting route which is used today to make Turbine blades for jet engines. Name this casting route.
    INVESTMENT CASTING (Also called as FULL MOULD CASTING)

17. What is the name given to the process in which a block of metal is reduced in cross-section by forcing it to flow through a die orifice under high pressure?
    EXTRUSION

18. What is the name given to the process that involves heating the sample in carbonaceous atmosphere to harden steel components?
    CARBURISING

19. What is the name given to the process in which a continuous sheet of the thermoplastic material is fabricated by squeezing the softened material between two horizontal rollers?
    CALENDERING

20. What is the name given to the process of heating natural rubber with sulphur, which results in the increase in cross linking of the polymer and an increase in strength?
    VULCANISATION

21. What is the name given to the process of coating zinc on steel
    GALVANISATION

22. What is the common name for the mineral HgS?
    CINNABAR

23. A silicate of beryllium and aluminium, $3BeO\ Al_2O_3.\ 6SiO_2$, crystallises in hexagonal form. The gem varieties are lustrous and transparent and have emerald

or aquamarine colour. What are these called?
BERYL

24. A sulphide of Zn that crystallises in cubic form. How is it referred to in mineralogy?
BLACK JACK

25. Fool's Gold is of course not gold. What is it?
CHALCOPYRITE

26. What is the common name for the mineral TiO_2?
RUTILE

27. What is the popular name of cubic zirconia?
AMERICAN DIAMONDS

28. What is the common name for the mineral potassium aluminium silicate, $KAl_3Si_3O_6$?
FELDSPAR

29. What is the trade name of the ceramic Silicon Carbide (SiC)?
CARBORUNDUM

30. You may be aware that ceramics are increasingly being used as bio-compatible materials. Which is the ceramic material used as Prosthesis for hip joints?
ALUMINA (Al_2O_3)

31. What is the technical term that characterises the high melting point ceramics?
REFRACTORY

32. What is the important property of ceramics like Ba TiO_3 that is used in the fabrication of ceramic disk capacitors?
HIGH DIELECTRIC CONSTANT

33. A ceramic, $3Al_2O_3$ - $2SiO_2$, is used as a refraccttory material for furnace linings. What is its common name?
MULLITE

34. A naturally occurring oxide of aluminium that forms rhombohedral crystal and nearly as hard as diamond is called as
CORUNDUM

35. A class of materials closely related to magnetite, having superior magnetic properties in view of their lower conductivity are called as|
FERRITES

36. Natural rubber is polymer. Can you tell the name of the monomer out of which this polymer is made?
ISOPRENE

37. We all know that cotton is one the natural fibres that is derived from plants. Can you name another?
JUTE or HEMP

38. What is the Common name for the polymeric material Phenol Formaldehyde?
    BAKELITE

39. Protective helmets, toys and automobile parts are made from this plastic which in short form is referred to as “ABS” What does “ABS” stand for?
    ACRYLIC BUTADIENE STYRENE

40. Now with consciousness for preserving and protecting our environment newer kinds of plastics are being formulated that can be attacked by microbes and broken down to cellulose. What is the name given to such plastics?
    BIO DEGRADABLE PLASTICS

41. An important class of polymers are polyamides. What is their common name?
    NYLON

42. What is the polymer in the packing material thermocole?
    POLYSTYRENE

43. A very widely used polymer is Polymethyl methacrylate. How is it otherwise called?
    PERSPEX

44. Which thermosetting material is used for making tableware?
    MELAMINE FORMALDEHYDE

45. What is the name of the plastic fibre of which bullet proof vests are made?
    KEVLAR

46. What is the common name for the construction material that is a combination of calcite and clay?
    PORTLAND CEMENT

47. Name the mineral in the gem JADE.
    SODIUM ALUMINIUM SILICATE, $NaAlSi_2O_6$

48. What is the common name for the mineral $CaSO_4$ 2 H_2O?
    GYPSUM

49. Name the process by which metals heated to higher temperature are cooled rapidly in water, air, molten or fused salts for the purpose of hardening.
    QUENCHING

50. What is gun metal?
    BRONZE (88% Cu, 10% Sn and 2% Zn)

51. Name the metal widely used in Aerospace industry and named after a Greek mythology hero?
    TITANIUM

52. Which state in India has the largest coal reserves?
    BIHAR (37%), WEST BENGAL (18%)

53. India is self sufficient in this particular mineral reserves which is mostly found in Bihar besides some places in Andhrapradesh, Tamil Nadu and Gujarat? What is this mineral?
    BAUXITE

54. Identify the place where the most recent and major oil find was made?
    GULF OF KHAMBHAT (OFF GUJARAT)

55. Where is the oldest oil well in India located?
    DIGBOI (ASSAM)

56. Where in India Uranium deposits are found?
    JADUGUDA in BIHAR

57. An American rolling mill company first produced commercially very pure iron. What is the name given to this pure iron?
    ARMCO IRON

58. The names LINZ and DONAVITZ are associated with the production of which material?
    STEEL

59. One of the figurines excavated near mohenjo-dara is the "DANCING-GIRL". What is it
    made of?
    BRONZE

60. This metal was formerly known as Glucinum, meaning sweet owing to the sweet taste of its' salts but its present name was derived from one of its minerals. What is this metal?
    BERYLLIUM

61. This mineral was originally found in the Isle of Mull and is often employed as a refractory material for furnace linings. Identify this mineral?
    MULLITE ($3Al_2O_3 + 2SiO_2$)

62. Francium is named after France. Name one more element which derives its name from France?
    GALLIUM

63. What are SIALONS?
    CERAMIC

64. What makes stainless steel stainless?
    ADDITION OF CHROMIUM

65. What is RAYON?
    A GENERAL NAME FOR ARTIFICIAL SILK

66. What is ALNICO and What is its application?
    It is a permanent magnetic material, composed of aluminium, nickel and cobalt.

67. Why Dolomite is added along with the charge in blast furnace?
    TO FLUX SILICEOUS IMPURITIES AS SLAG

68. We know about normal process cooling. What is Super cooling?
    COOLING OF LIQUID BELOW ITS NORMAL FREEZING POINT.

69. We know normal electrical conductivity as the ability of the material to carry current. What is super conductivity?
    REFERS TO ZERO RESISTANCE FOR CONDUCTING ELECTRICITY.

70. Name the element which finds extensive application in photo copying?
    SELENIUM

71. Alloy refers to a phase with more than one element. What is a super alloy?
    AN ALLOY WITH SUPERIOR MECHANICAL PROPERTIES AT HIGH TEMPERATURES.

72. Crystal structure refers to arrangement of atoms in a lattice. What is a Super lattice?
    WHEN MORE THAN ONE TYPE OF ATOMS ARE PRESENT, AND WHEN DISTINCT ATOMS OCCUPY DISTINCT POSITIONS, THE RESULTING LATTICE IS CALLED SUPER LATTICE.

73. Plasticity refers to permanent deformation under applied load. What is Superplasticity?
    SUPERPLASTICITY REFERS TO THE ABILITY OF THE MATERIAL TO SUSTAIN EXTREMELY LARGE TENSILE DEFORMATION AT A TEMPERATURE AROUND HALF THE MELTING POINT.

74. Name the manufacturing the process by which hypodermic needles are manufactured?
    COLD SWAGING.

75. What is hard facing?
    DEPOSITION OF A HARD WEAR RESISTANT ALLOY ON A METAL SURFACE.

76. What is pickling in the context of Materials Processing?
    CHEMICAL REMOVAL OF SURFACE OXIDES AND OTHER SCALES AND CONTAMINANTS BY IMMERSION IN AN AQUEOUS ACID SOLUTION.

77. Many metal forming operations leave a thin ridge or roughness left on forgings or sheet metal blanks. What is the common name given to these defects?
    BURR

78. What is the process of producing raised or sunken design in sheet materials by means of dies called?
    EMBOSSING

79. Certain materials are added to plastic compounds either to improve the flow during processing or to improve properties like flexibility? What are these

materials called?
PLASTICIZERS

80. A great Indian crystallographer and molecular bio-physicist is well-known for the determination of the Structure of collagens (BONE-FIBRE)
G.N. RAMACHANDRAN

81. Who built the first electron microscope in 1932 and was awarded the Nobel Prize in 1986?
E.O. RUSKA

82. This famous scientist played a crucial role in the development of transistors and in providing an explanation for superconductivity. Who is this Scientist?
JOHN BARDEEN

83. An Indian Physicist and the founder of the nuclear energy programme in India had catalysed the growth of nuclear metallurgy in India. Who was this Scientist?
HOMI JEHANGIR BHABHA

84. Name the Scientist who developed the theory of Chemical bond and elucidated the crystal structures of many compounds?
LINUS PAULING

85. Who first produced the Metallic-Glass?
POL DUWEZ

86. Who invented the fuel cell?
SIR WILLIAM GROVE IN 1839 (ENGLAND)

87. Who introduced the use of coke for iron making for the first time?
ABRAHAM DARBY IN ENGLAND

88. This naturally occurring mineral, associated with calcite, is one of the most common allotropic forms of Sulphur. What is this allotropic form?
RHOMBIC SULPHUR