CONCEPT APPLICATION LEVEL - III

SECTION–A

MULTIPLE CHOICE QUESTIONS :

Q.1 Which of the following properties is generally not shown by metals?
(A) Ductility (B) Sonorous (C) Dullness (D) Electrical conduction

Q.2 The most abundant element in the universe is:
(A) hydrogen (B) oxygen (C) helium (D) carbon

Q.3 Galvanisation is a method of protecting iron from rusting by coating with a thin layer of
(A) silver (B) gallium (C) zinc (D) aluminium

Q.4 In extraction of copper, the flux used is
(A) FeO (B) SiO_2 (C) CaO (D) $FeSiO_2$

Q.5 Alloys are homogeneous mixtures of a metal with a metal or non-metal. Which among the following alloys contain non-metal as one of its constituents?
(A) Amalgam (B) Brass (C) Bronze (D) Steel

Q.6 Which of the following is purest form of carbon?
(A) Diamond (B) Graphite (C) Fullerenes (D) Charcoal

Q.7 Which among the following alloys contain mercury as one of its constituents?
(A) Alnico (B) Solder (C) Stainless steel (D) Zinc Amalgam

Q.8 Which of the following methods is suitable for preventing an iron frying pan from rusting?
(A) Applying paint (B) Applying grease
(C) Applying a coating of zinc (D) All of these

Q.9 Generally, non-metals are not conductors or electricity, which of the following is a good conductor of electricity?
(A) Fullerenes (B) Graphite (C) Diamond (D) Sulphur

Q.10 Food cans are coated with tin and not with zinc because
(A) zinc is costlier than tin (B) zinc is less reactive than tin
(C) zinc is more reactive than tin (D) zinc has a higher melting point than tin

Q.11 Electrical wires have a coating of an insulating materials. The material, generally used is
(A) sulphur (B) graphite (C) PVC (D) none of these

Q.12 Which of the following non-metal is a liquid?
(A) Sulphur (B) Phosphorus (C) Carbon (D) Bromine

Q.13 The liquid metal at room temperature is:
(A) Mercury (B) Bromine (C) Sodium (D) Gold

Q.14 Non-metals are:
(A) generally liquids (B) generally gases
(C) generally solids and gases (D) generally gases and liquids

Q.15 The metal which is stored in kerosene:
(A) Phosphorus (B) Magnesium (C) Sodium (D) Zinc

Q.16 Materials around us can be classified into:
(A) Elements and compounds (B) Metals and non-metals
(C) Acids and bases (D) None of these

Q.17 All metals are solids except:
(A) Sodium (B) Calcium (C) Mercury (D) Hydrogen

Q.18 Metal oxides are of nature:
(A) Acidic (B) Basic (C) Neutral (D) All of these

Q.19 The metal which can be cut with a knife:
(A) Sodium and potassium (B) Barium and calcium
(C) Sodium and mercury (D) Potassium and calcium

Q.20 When non-metals react with water then:
(A) Hydrogen gas is formed (B) Carbon dioxide gas is formed
(C) Non-metals do not react with water (D) None of these

Q.21 The metal which is liquid at room temperature is
(A) sodium (B) bromine (C) calcium (D) mercury

Q.22 Which one of the following metal is the most ductile?
(A) Aluminium (B) Copper (C) Silver (D) Gold

Q.23 Which one of the following metal is the most reactive and stored in kerosene?
(A) Iron (B) Gold (C) Copper (D) Potassium

Q.24 Name the gas evolved when magnesium reacts with dilute hydrochloric acid.
(A) Chlorine (B) Oxygen (C) Hydrogen (D) Nitrogen

Q.25 The metal which is not corroded by air, water and acid is
(A) copper (B) zinc (C) aluminium (D) gold

Q.26 Metals are
(A) soft and brittle (B) hard and solid (C) liquid (D) generally liquid

Q.27 Materials having qualities of both metals and non-metals are
(A) alloys (B) metalloids (C) noble metals (D) none of these

Q.28 Which metal reacts readily with cold water?
(A) Gold (B) Silver (C) Magnesium (D) Calcium

Q.29 The best electrical conductor is
(A) gold (B) copper (C) silver (D) aluminium

Q.30 Iron is galvanished by coating it with
(A) chromium (B) sodium (C) magnesium (D) zinc

Q.31 Out of these, which one is more reactive with water?
(A) Sodium (B) Magnesium (C) Iron (D) Copper

Q.32 Boron is
(A) metal (B) metalloid (C) non-metal (D) alkali

Q.33 A mineral from which a metal can be extracted on the commercial scale, economically is called
(A) ore (B) metalloid (C) corrosion (D) metal

SECTION–B

Q.34 Which of the following element is not found in free state in the nature? **[NTSE-Stage-IIRaj/2007]**
(A) Silver (B) Copper (C) Sodium (D) Gold

Q.35 The concentrated ore if subjected to the following process, is called roasting : **[NTSE-Stage-IIBihar/2007]**
(A) Heated in a furnace alone
(B) Heated in a furnace in sufficient supply of air
(C) Heated in a furnace with insufficient supply of air
(D) Heated with some flux

Q.36 The difference between Pig and Wrought iron is as follows : **[NTSE-Stage-I/Bihar/2007]**
(A) Pig iron is pure and Wrought iron is impure
(B) Both Pig and Wrought iron are highly impure
(C) Both Pig and Wrought iron are pure
(D) Pig iron is impure and wrought iron is pure to a large extent

Q.37 A highly purified non-metal used for making solar cells, microchips and transistors is **[NTSE-Stage-II Delhi/2007]**
(A) Sulphur (B) Selenium (C) Silicon (D) Phosphorus

Q.38 Epsom salt is **[NTSE-Stage-I/Haryana/2007]**
(A) $CuSO_4$ (B) $MgSO_4 \cdot 7H_2O$ (C) NH_2CONH_2 (D) $(NH_4)_2SO_4$

Q.39 An ore gives off SO_2 when heated with O_2 This ore is concentrated by - **[NTSE-Stage-IIUttrakhand/2007]**
(A) gravity separation method (B) magnetic separation method
(C) froth flotation method (D) chemical method

Q.40 Copper is extracted from the ore copper pyrite by smelting in a blast furnace. The flux used and the slag formed are as given below: **[NTSE-Stage-I/Bihar/2007]**

(A) Flux CaO, Slag $CaSiO_3$ (B) Flux SiO_2, Slag $CaSiO_3$
(C) Flux FeO, Slag $FeSiO_3$ (D) Flux SiO_2, Slag $FeSiO_3$

Q.41 Aluminium is not extracted by carbon reduction process. This is due to the following reason : **[NTSE-Stage-I/Bihar/2007]**

(A) At the temperature ofthe furnace, Al is oxidised by CO_2
(B) Melting point at Al is very high
(C) Melting point at Al is very low
(D) Al reacts with carbon

Q.42 When magma cools below the surface of the earth, the granite is formed which is used in buildings. It mainly consists of - **[NTSE-Stage-II112007]**

(A) quartz and haematite (B) quartz and feldspar
(C) bauxite and calcamine (D) feldspar and silver glance

Q.43 Minerals generally have the following characteristics **[NTSE-Stage-II/2007]**

(A) They occur naturally.
(B) They have characteristics chemical composition.
(C) They do not have specific chemical properties.
(D) They do not have a specific chemical composition. Which of the following statements are correct?

(A) Aand B (B) A, C and D (C) C and D (D) Aand D

Q.44 Which of the following non-metal is found in liquid state at room temperature? **[NTSE-Stage-II/Raj 2008]**

(A) Sulphur (B) Carbon (C) Iodine (D) Bromine

Q.45 Bauxite is an ore of **[NTSE-Stage-II/Bihar 2008]**

(A) boron (B) aluminium (C) barium (D) chromium

Q.46 Copper is purified by which method, given below **[NTSE-Stage-II/Bihar 2008]**

(A) Distillation (B) Liquation (C) Carbon-reduction (D) Electrolytic refining

Q.47 Rusting of iron is an example of **[NTSE-Stage-I/Bihar 2008]**

(A) photochemical reaction (B) electrochemical reaction
(C) electrolytic reaction (D) exothermic reaction

Q.48 The metal is stored in kerosene oil? **[NTSE-Stage-II/Delhi 2008]**

(A) Sodium (B) Zinc (C) Iron (D) Magnesium

Q.49 Which of these is used for packing of medicines? **[NTSE-Stage-II/Delhi 2008]**

(A) Fe (B) Al (C) Zn (D) Mg

Q.50 Which of these is the hardest? **[NTSE-Stage-II/Delhi 2008]**

(A) Lead (B) Diamond (C) Gold (D) Iron

Q.51 Which does not liberate hydrogen gas on reaction with dilute HCI ? **[NTSE-Stage-II/Delhi 2008]**

(A) Mg (B) Cu (C) Zn (D) Na

Q.52 Cryolite is a ore of
(A) Chromium (B) Magnesium (C) Iron (D) Aluminium

Q.53 Which metal becomes black in H_2S present in air? **[NTSE-Stage-I/Haryana 2008]**
(A) Fe (B) Mg (C) Ag (D) Al

Q.54 Alnico is a mixture of - **[NTSE-Stage-II/Haryana /2008]**
(A) Fe,Al, Ni, Co (B) Fe, Cr, Ni, Co (C) Al, Ni, Co, Mn (D) Al, Cu, Mn, Mg

Q.55 The colour of sulphur, Chlorine gas and iodine are respectively. **[NTSE-Stage-I/Haryana 2008]**
(A) yellow, yellowish green, blue (B) red, white, violet
(C) yellow, yellowish green, violet (D) yellow, white, violet

Q.56 What it the total number of non -metallic elements? **[NTSE-Stage-II/Gujratl 2007,2008]**
(A) 10 (B) 11 (C) infinite (D) 22

Q.57 Which are the constituents of alloy bronze ? **[NTSE-Stage-II/Gujratl 2008]**
(A) Cu, Zn (B) Cu, Ni (C) Cu, Sn (D) Cu, Sn, Ni

Q.58 The most reactive metal is - **[NTSE-Stage-I/Himachal 2008]**
(A) potassium (B) gold (C) zinc (D) copper

Q.59 The first alloy to be discovered was **[NTSE-Stage-I/Himachal 2008]**
(A) brass (B) duralumin (C) solder (D) bronze

Q.60 The red colour of red soil is due to presence of **[NTSE-Stage-II/Chhatisgarh 2008]**
(A) Zinc oxide (B) Magnesium oxide (C) Sulphur dioxide (D) Iron oxide

Q.61 The percentage of gold present in 20 carat gold is
(A) 83.33 (B) 100 (C) 50 (D) 73.3

Q.62 Match the following

(a)	CH_4	(i)	Neither combustible nor supports combustion
(b)	CO_2	(ii)	Combustible
(c)	N_2	(iii)	Supports combustion
(d)	O_2	(iv)	Extinguishes fire

Which of the following indicates the correct matching? **[NTSE-Stage-II/2008]**
(A) a,(i) ; b, (ii) ; c (iii) ; d, (iv) (B) a,(ii) ; b, (iv) ; c (i) ; d, (iii)
(C) a,(ii) ; b, (iii) ; c (i) ; d, (iv) (D) a,(iii) ; b, (iv) ; c (ii) ; d, (i)

Q.63 Which of the following displacement reactions is possible ? **[NTSE-Stage-II/2008]**
(A) Copper + Sodium chloride $\longrightarrow$ Copper chloride + Sodium
(B) Lead + Potassium nitrate $\longrightarrow$ Lead nitrate +Potassium
(C) Iron + Lead nitrate $\longrightarrow$ Iron nitrate + Lead
(D) Silver + Copper nitrate $\longrightarrow$ Silver nitrate + Copper

Q.64 In which of the following seasons, rusting of iron is the fastest ? **[NTSE-Stage-II/Raj./2009]**
(A) Rainy season (B) Spring (C) Summer (D) Winter

Q.65 Consider the following five beakers and the substances in it. **[NTSE-Stage-II/Raj.l2009]**
Beaker A : Copper sulphate solution + Iron nails
Beaker B : Zinc sulphate solution + Copper turnings
Beaker C : Magnesium sulphate solution + Zinc granules
Beaker D : Zinc sulphate solution + Iron nails
Beaker E : Magnesium nitrate solution + Iron nails·
According to the changes that take place in the above beakers select the arrangement of metals copper, iron, zinc and magnesium in increasing order of reactivity from.the alternative given.
(A) Iron, Copper, Zinc, Magnesium (B) Magnesium, Zinc, Iron, Copper
(C) Copper, Iron, Zinc, Magnesium (D) Copper, Zinc, Iron, Magnesium

Q.66 Baryte is the ore of - **[NTSE-Stage-I/Shiiong/2009]**
(A) Calcium (B) Iron (C) Barium (D) Uranium

Q.67 A non-metal not found in the free state is **[NTSE-Stage-I/Shilong/2009]**
(A) oxygen (B) silicon (C) nitrogen (D) carbon

Q.68 Rusting of iron occurs due to the presence of **[NTSE-Stage-II/West Benga1/2011]**
(A) nitrogen and dry air (B) oxygen and dry air
(C) nitrogen and moist air (D) oxygen and moist air

Q.69 Which are the constituents of alloy nichrome? **[NTSE-Stage-I/Guratl 2011]**
(A) Fe, Ni (B) Cu, Ni (C) Fe, Ni, Cr, Mn (D) Ni, Cr, Fe

Q.70 Which element from the following does prevent the corrosion of iron ? **[NTSE-Stage-I/Gujratl2011]**
(A) Cu (B) Zn (C) Ag (D) O

Q.71 Which of the following metals is found in liquid form ? **[NTSE-Stage-I/Raj./2011]**
(A) Iron (B) Sodium (C) Mercury (D) Lead

Q.72 Water which contains soluble salt of calcium and magnesium is known as : **[NTSE-Stage-I/Raj./2011]**
(A) Soft water (B) Heavy water (C) Hard water (D) Mineral water

Q.73 Which among the following matter has the highest electrical conductivity? **[NTSE-Stage-I/Raj.l2011]**
(A) Diamond (B) Silver (C) Wood (D) Graphite

Q.74 What is the proportion of gold in 18 carat gold? **[NTSE-Stage-I/Gujratl2011]**
(A) 70 (B) 91.7 (C) 83.33 (D) None of these

Q.75 The properties of elements with 4, 5, 6 or 7 valence electrons are- **[NTSE-Stage-I/Kamatka2011]**
(A) metallic (B) non-metallic (C) acidic (D) alkaline

Q.76 A copper doll kept in a showcase looses its shine with time because of the formation of **[NTSE-Stage-I/Karnatka2011]**
(A) oxides (B) hydroxides (C) chlorides (D) sulphates

Q.77 Fill the blank in the equation.
$Mg(HCO_3)_2 \xrightarrow{Heat}$ ---------$H_2O + CO_2$ **[NTSE-Stage-II/Andhra pradesh2011]**
(A) $MgCO_3$ (B) Mg_2CO_3 (C) Mg (D) $Mg(OH)_2$

Q.78 China clay is ..... in colour. **[NTSE-Stage-II/Maharastra 2011]**
(A) white (B) red (C) green (D) black

Q.79 Calcium oxide when dissolved in water forms **[NTSE-Stage-II/Maharashtra 2011]**
(A) calcium hydroxide (B) calcium nitrate
(C) calcium (D) calcium carbonate

Q.80 Pure gold is of..... carat. **[NTSE-Stage-I/Maharashtra 2011]**
(A) 18 (B) 26 (C) 24 (D) 22

Q.81 The process of depositing a layer of zinc on iron is called - **[NTSE-Stage-I/Punjab 2011]**
(A) galvanisation (B) crystallisation (C) ionisation (D) hydration

Q.82 When a copper vessel is exposed to moist air for long it acquires a dull green coating. The green material is a mixture of :
[NTSE-Stage-II/Punjab 2011]
(A) $CuSO_4$ and $CuCO_3$ (B) $Cu(OH)_2$ and $CuCO_3$
(C) $CuSO_4$ and $Cu(OH)_2$ (D) $FeCO_3$ and $CuSO_4$

Q.83 In which of the following displacement reaction occurs ? **[NTSE-Stage-I/Punjab 2011]**
(1) Copper sulphate ($CuSO_4$) + zinc granules (Zn)
(2) Copper sulphate ($CuSO_4$) + Iron Nail (Fe)
(3) Zinc sulphate ($ZnSO_4$ + copper turning (Cu)
(4) Iron sulphate ($FeSO_4$) + Copper turning (Cu)
(A) both in (1) and (2) (B) both in (3) and (4)
(C) both in (2) and (3) (D) both in (1) and (4)

Q.84 Oxides of non-metals are : **[NTSE-Stage-I/Delhi 2011]**
(A) basic (B) acidic (C) neutral (D) all of these

Q.85 Galvanization is a process in which deposition is done of: **[NTSE-Stage-II/Delhi 2011]**
(A) iron on copper articles (B) zinc on copper articles
(C) zinc on iron articles (D) none of these

Q.86 The property of malleability is not shown by : **[NTSE-Stage-II/Delhi 2011]**
(A) Iron (B) Graphite (C)Aluminium (D) Silver

Q.87 Which metal liberates hydrogen on reaction with an alkali ? **[NTSE-Stage-ll/Delhi 2011]**
(A) Cu (B) Mg (C) Al (D) Fe

Q.88 In bronze exists **[NTSE-Stage-II/Bihar 2011]**
(A) Cu and Sn (B) Cu and Zn (C) Zn and Pb (D) Sn and Pb

Q.89 When Ca reacts with Cl_2 then form **[NTSE-Stage-II/Bihar 2011]**
(A) Ca(OCl)Cl (B) $CaCl_2$ (C) Ca_3N_2 (D) None of these

Q.90 In which ore oxygen is not contained? **[NTSE-Stage-I/Bihar 2011]**
(A) Iron pyrite (B) Haematite (C) Lime stone (D) Bauxite