# CHEMISTRY MDCAT

UNIT-7 (A + SERIES)

TOPIC:-
- ✓ s AND p BLOCK ELEMENTS
- ✓ TRANSITION ELEMENTS

Q.1 Electrical conductivity of _____ is highest among all elements
- A. Coinage metals
- B. Transition metals
- C. Alkali metals
- D. Rare earth metals

Q.2 Beryllium is as hard as that of _____ and can be used to scratch glass
- A. Ferrum
- B. Cuprum
- C. Argentum
- D. Hydrargyrum

Q.3 Which characteristics of Lithium is not considered as its peculiar behaviour
- A. It reacts with nitrogen
- B. It reacts with carbon
- C. It give complex compounds
- D. It reacts with ethyne

Q.4 d-Block transition metals cannot be classified as
- A. Outer transition metals
- B. Inner transition metals
- C. Typical transition metals
- D. Non-typical transition metals

Q.5 Nitrogen, oxygen and fluorine shows peculiarity in their electron affinities due to
- A. Higher ionization energy
- B. High electronegativity
- C. Restricted octet state
- D. Smaller size

Q.6 Lime water turns milky with CO_2 but becomes clear with excess of CO_2 due to the formation of
- A. $CaCO_3$
- B. $Ca(HCO_3)_2$
- C. $Ca(OH)_2$
- D. $Ca(CO_2)_2$

Q.7 How many non-metals are found in d-block of periodic table
- A. Zero
- B. One
- C. Two
- D. Three

Q.8 Which of the following is the correct decreasing order of basic character of alkali metal oxides
- A. $KO_2 > Na_2O_2 > Li_2O$
- B. $Cl_2O_7 > SO_3 > P_2O_5$
- C. $BeO < MgO < CaO$
- D. All are correct

Q.9 $2M + 2H_2O \longrightarrow 2MOH + H_2$, in the given reaction 'M' may be
- A. Cu
- B. Ba
- C. Mg
- D. Rb

Q.10 The flame colour of lithium metal is
- A. Golden Yellow
- B. Bright Yellow
- C. Crimson red
- D. Brick red

Q.11 Which of the following metal burns in steam to produce its oxide and hydrogen gas
- A. Be
- B. Mg
- C. Na
- D. Ca

Q.12 The electronegativity values decrease from top to bottom in any group of periodic table due to
- A. Decrease in reactivity
- B. Increase in density
- C. Increase in size
- D. Increase in melting pint

Q.13 Which one of the following processes is not an exothermic
- A. $Na_{(g)} \longrightarrow Na_g^+ + 1\bar{e}$
- B. $Mg_{(g)}^{+1} \longrightarrow Mg_g^{+2} + 1\bar{e}$
- C. $O^{-1} + 1\bar{e} \longrightarrow O^{-2}$
- D. All of above

Q.14 Which of the following shows maximum electron affinity?
- A. F
- B. Cl
- C. Br
- D. I

Q.15 Which one of the following species has smallest ionic radius?
- A. Mg^{+2}
- B. Al^{+3}
- C. N^{-3}
- D. O^{-2}

Q.16 Which of the following group shows anomalous trend in ionization energy across short periods in periodic table

A. V-A
B. IV-A
C. VI-A
D. VII-A

Q.17 Which of the following factor explains the abnormal trend of ionization energy within period in the periodic table

A. Nuclear charge
B. Atomic size
C. Shielding effect
D. Nature of orbital

Q.18 The high ionization energy of phosphorous as compared to sulphur is due to

A. Nature of sub-shell
B. Atomic size
C. Valence shell electronic configuration
D. Shielding effect

Q.19 Select the correct increasing order of size of H^-, H and H^+

A. $H^+ > H > H^-$
B. $H > H^+ > H^-$
C. $H^+ < H < H^-$
D. $H^+ = H > H^-$

Q.20 Helium belongs to

A. Noble gases
B. Representative elements
C. s-block elements
D. All of the above

Q.21 An ion M^{+2} having 24 electrons, belongs to

A. Normal elements
B. Outer transition elements
C. Inner transition elements
D. Non-typical transition elements

Q.22 The correct electronic configuration of II-A element from third period is

A. $[He]2s^2$
B. $[Ne]3s^2$
C. $[Ar]4s^2$
D. $[Kr]5s^2$

Q.23
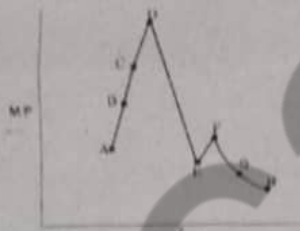
Which element will occupy position F in graph

A. Si
B. P
C. S
D. Cl

Q.24 Second ionization energy of Ca is _____ than that of K, whereas first ionization of Ca is _____ than that of K respectively

A. Lower, higher
B. Higher, Lower
C. Lower, Lower
D. Higher, Higher

Q.25 Beryllium reacts with NaOH to form Na_2BeO_2 and _____ gas

A. O_2
B. H_2O
C. H_2
D. N_2

Q.26 One mole of aluminum reacts with water, produces _____ mole of hydrogen gas.

A. 3
B. 2
C. 3/2
D. 1/2

Q.27 Which of the following oxide will behave as an acid with caustic soda

A. Na_2O
B. MgO
C. BeO
D. KO_2

Q.28 Which of the following reacts with water to give more soluble hydroxide $M(OH)_2$

A. MgO
B. CaO
C. BaO
D. SrO

Q.29 The incorrect order of reactivity is

A. $Na < K$
B. $Li < Na$
C. $K < Rb$
D. $K < Na$

Q.30 Sodium reacts with water more vigorously than lithium because

A. Na is more electropositive than that of Li
B. Density of Na is less than that of Li
C. Melting point of Na is greater than that of Li
D. ionization energy of Na is greater than that of Li

Q.31 Which one the following is a chelate
A. $K_2[Pt(COO)_2]$
B. $K_4[Fe(CN)_6]$
C. $[Pt\ Cl\ NO\ (NH_3)_4]SO_4$
D. $[Fe(CO)_5]$

Q.32 In 3d series, the maximum binding energy is shown by
A. Scandium
B. Titanium
C. Vanadium
D. Chromium

Q.33
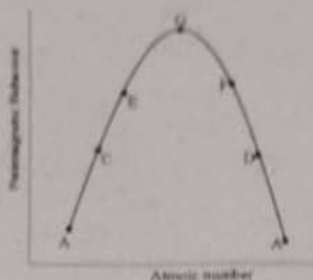
_____ must be placed at point G
A. Mn^{2+}
B. Zn^{+2}
C. Al^{+3}
D. Cu^{+1}

Q.34 Which element shows lowest melting point in 1ᵗ transition series of periodic table
A. Sc   Fluorine das not show
B. Mn
C. Zn   variable O.S
D. V

Q.35 Which one of the following species shows maximum paramagnetic behaviour
A. Zn^{2+}
B. Ni^{2+}
C. Mn^{2+}
D. Fe^{2+}

Q.36 Select the pair of Z values which represents transition metals that show abnormal electronic configuration to attain stability in 3d-series
A. 21 and 30
B. 24 and 29
C. 26 and 29
D. 27 and 29

Q.37 Which of the following cannot form coordinate complex (No ligand) As cannot give e⁻
A. NH_4^+
B. H_3O^+
C. $(CH_3)_3C^+$
D. All of the above

Q.38 The general electronic configuration of outer transition elements is
A. $nd^{1-10}(n-1)s^{1-2}$
B. $(n-1)d^{1-10}ns^{1-2}$
C. $(n-1)d^{1-5}ns^2$
D. $(n-1)d^{10}ns^2$

Q.39 The outer transition element that forms an amphoteric oxide
A. Al
B. Be
C. Zn
D. All of these

Q.40 The lowest oxidation state of Fe is found in
A. $FeSO_4$
B. $[Fe(CO)_5]$
C. $K_3\left[Fe(CN)_6\right]$
D. $K_2\left[Fe(CN)_6\right]$

Q.41 The catalytic activity of transition elements is due to
A. d-d electron transition
B. High binding energy
C. Variable oxidation state
D. Ability to form complex

Q.42 The minimum number of oxidation states is shown by
A. Sc
B. Mn
C. Cu
D. Zn

Q.43 The total number of half-filled orbitals in Cr is
A. 1
B. 5
C. 6   4s¹
D. 9

Q.44 The most stable electronic configuration of an element of first series transition is
A. $[Ar]4s^2 3d^5$
B. $[Ar]4s^1 3d^5$
C. $[Ar]4s^2 3d^{10}$
D. $[Ar]4s^0 3d^{10}$

Q.45 A complex 'X' absorbs yellow light it will look _____ in color
A. Green
B. Red
C. Violet
D. Yellow

Q.46 The complex having coordination number 4, may be _____ in geometry
A. Tetrahedral
B. Square planar → four examples learn
C. Trigonal bipyramidal
D. Both A and B

Q.47 Which of the following is a typical transition metal is 3d-series
A. Sc
B. Co
C. Zn
D. Ag

Q.48 Most of alkaline earth metals form _____ Oxides [Except Ba]
A. Normal
B. Super
C. Acidic
D. Per

Q.49 The geometry of complex ion $[Cu(NH_3)_4]^{+2}$ is
A. Tetrahedral
B. Square planar
C. Hexagonal
D. Octahedral

Q.50 _____ donates electron pair to _____ to form a co-ordination complex
A. Central metal ion, Ligand
B. Nucleophile , Substrate
C. Ligand, Central metal ion) atom
D. Substrate, Electrophile

Q.51 Which of the following has maximum number of electron pairs / full filled orbitals.
A. Cr
B. Fe
C. Cu
D. Zn

Q.52 Give the systematic name for $[Fe(CO)_5]$
A. Pentacarbonyliron(III)
B. Pentacarbonyliron(0)
C. Pentacarbonyliron(II)
D. Pentacarbonylferrate(III)

Q.53 Which of the following has same number of electrons in outer most shell as like $_{19}K$
A. $_{26}Fe$
B. $_{21}Sc$
C. $_{24}Cr$
D. None of above

Q.54 $[Pt(H_2O)_3 (NH_3)_3]$ has structure
A. Linear
B. Tetrahedral
C. Trigonal pyramidal
D. Octahedral

Q.55
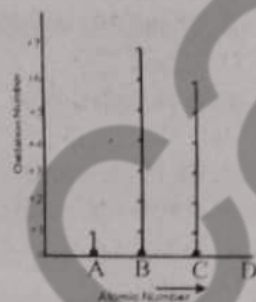
The value of atomic number at point B is
A. 24
B. 25
C. 26
D. 27

Q.56 The relative attraction of the nucleus of an atom for the electrons in a chemical bond is
A. Ionization energy
B. Electron affinity
C. Electronegativity
D. Shielding effect

Q.57 Which one of the following is most basic oxide
A. BeO
B. MgO
C. SrO
D. CaO

Q.58 In alkaline earth metals electrical conductance
A. Increases down the group
B. Decreases down the group
C. Decreases along the period
D. Increases along the period

Q.59 Which of the following metal is more reactive with water.
A. Li
B. Na
C. K
D. Cs

Q.60 When Na is dropped in water, it catches fire as
A. It is a metal
B. It is highly electropositive
C. It has higher atomic mass
D. Its reaction is highly exothermic

BIOLOGY MDCAT
UNIT-7 (A+ Series)

TOPIC:

✓ Life Processes in Animals and Plants (Transport, Immunity)

Q.1 The casparian strips are present at the level of:
A. Cortex
B. Endodermis
C. Pericycle
D. Phloem

Q.2 Cytoplasmic strands through which sucrose enters sieve elements are:
A. Plasmodesmata
B. Gap junctions
C. Plasmalemma
D. Pericycle

Q.3 Root hairs can absorb water only if: *Few able xerophytes due to salty water*
A. Soil is excessive salty → Halophytes
B. Concentration of solutes in cell sap is high
C. Plants are not transpiring
D. Soil is rich in inorganic matter

Q.4 The one which thoroughly explains ascent of sap is:
A. Capillary force theory
B. Atmospheric pressure theory
C. Pressure flow theory
D. Transpiration pull and cohesion tension theory

Q.5 The root hairs arise from:
A. Pericycle *cell wall membrane.*
B. Cortex
C. Endodermis
D. Epidermis

Q.6 Movement of water through cytoplasmic connections is called:
A. Apoplast pathway
B. Symplast pathway
C. Vacuolar pathway
D. Osmosis

Q.7 Loading of sucrose from bundle sheath cells to companion cell is done by:
A. Diffusion
B. Osmosis
C. Facilitated diffusion
D. Active transport

Q.8 It separates extracellular space in root into two compartments:
A. Cortex
B. Plasmodesmata
C. Pericycle
D. Casparian strips

Q.9 If a plant absorbs 1 liter of water per day, then what will be the amount of water used by the plant for its metabolism?
A. 10 ml
B. 0.1 liter
C. 100 ml
D. 1 liter

Q.10 It is the attraction among water molecules which holds them together within the xylem tube:
A. Tension
B. Adhesion
C. Cohesion
D. Imbibition

Q.11 The hormone which reduces the rate of transpiration is:
A. Auxins
B. Cytokinins → *stomatal opening*
C. Gibberellins
D. Abscisic acid → *stress hormone → closing*

Q.12 Food in plants is transported in the form of:
A. Monosaccharide
B. Polysaccharide
C. Disaccharide
D. Oligosaccharide

Q.13 It is the bond found among water molecules by which water can move up the xylem like an unbroken column:
A. S-S-bonds
B. C-O-C bonds
C. H-bonds
D. OH-bond

Q.14 What is the main function of a companion cell in mature phloem tissue?
A. Providing cytoplasmic contact with the sieve tube element for loading
B. Providing structural support to the sieve tube element
C. Providing the nucleus for cell division in the phloem
D. Getting energy from sieve elements

Q.15 The significance of transpiration lies in:
A. Ascent of sap
B. Translocation of mineral salts
C. Cooling effect
D. All A, B, C

Q.16 Which of the following correctly represents carbohydrates in plants?

	Synthesized	Transported	Stored
A.	Glucose	Glucose	Starch
B.	Glucose	Sucrose	Glycogen
C.	Sucrose	Glucose	Starch
D.	Glucose	Sucrose	Starch

Q.17 Movement of water from cell to cell involving tonoplast is called _____ pathway.
A. Apoplast
B. Vacuolar
C. Symplast
D. Protoplast

Q.18 Uptake of water and increase of cell volume without diluting its contents is:
A. Transpiration pull
B. Root pressure
C. Imbibition — absorb in cell walls/vacuole
D. Cohesion

Q.19 It is the most widely accepted theory of carbohydrate translocation:
A. Root pressure theory
B. TACT theory
C. Mass flow theory
D. Osmotic theory

Q.20 Though heart is an involuntary organ, the fibres are different from smooth muscles due to:
A. Striations
B. Tendons
C. Multiple nuclei
D. Sarcoplasm

Q.21 Which one of the following pairs of terms represent one and the same thing?
A. Plasma – Blood
B. AV node - Pacemaker
C. Granulocytes – Monocytes
D. AV Bundle- Bundle of His

Q.22 Which term does not apply to human heart?
A. Pacemaker
B. Myogenic
C. Neurogenic — invertebrates
D. Four chambered

Q.23 The heart is enclosed in a double membranous sac, called:
A. Pleura
B. Pericardium
C. Epicardium
D. Capsule

Q.24 The layer which consists of branched muscle fibres is:
A. Pericardium
B. Myocardium
C. Epicardium
D. Endocardium

Q.25 The human heart contracts:
A. Voluntarily
B. Irregularly
C. Passively
D. Rhythmically — Actively

Q.26 There are four chambers of the heart:
A. Two upper thick-walled atria
B. Two lower thin walled ventricles
C. Two upper thin walled atria and two lower thick-walled ventricles
D. Two upper thin walled ventricles and two lower thick-walled atria

Q.27 Hepatic vein pour its blood into:
A. Superior vena cava
B. Inferior vena cava
C. Hepatic portal vein
D. Jugular veins

Q.28 Coronary arteries supply the oxygenated blood to the heart and arise from:
A. Arch of aorta
B. Base of aorta
C. Descending aorta
D. Thoracic aorta

Q.29 There are no valves in arteries except:
A. Iliac artery
B. Hepatic artery
C. At the base of aorta
D. Femoral artery

Q.30 Exchange of material occurs at level of:
A. Venules and capillaries
B. Arterioles and capillaries
C. Capillaries only
D. Venules and arterioles

Q.31 QRS complex occurs prior to:
A. Atrial systole
B. Ventricular systole
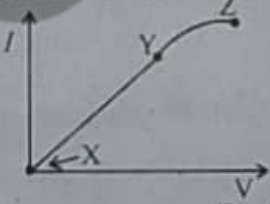C. Atrial diastole
D. Ventricular diastole
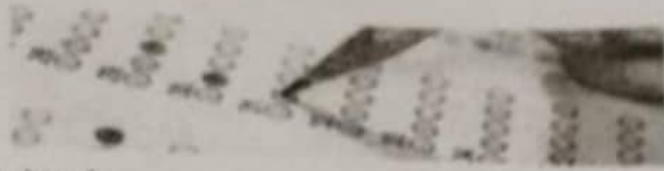
Q.32 One complete heart beat consists of:
A. One systole
B. One diastole
C. One systole and one diastole
D. One systole and two diastoles

Q.33 The phase of cardiac cycle in which all the four chambers are relaxed at the same time is:
A. Diastole
B. Systole
C. Atrial systole
D. Ventricular systole

Q.34 The heart beat is initiated by the:
A. Atrio-ventricular node
B. Bundle of His
C. Purkinje fibers
D. Sino-atrial node

Q.35 Which chamber of the heart shows the greatest pressure changes during one cardiac cycle?
A. Left atrium
B. Left ventricle
C. Right atrium
D. Right ventricle

Q.36 Which blood vessels change their resistance to blood flow to regulate distribution of blood to organs?
A. Vena cava
B. Arterioles
C. Capillaries
D. Veins

Q.37 Which of the following are found in both arteries and capillaries?
A. Collagen fibers
B. Elastic fibers
C. Endothelial cells
D. Smooth muscle cells

Q.38 Renal arteries arise from:
A. Ascending aorta
B. Thoracic aorta
C. Arch of aorta
D. Abdominal aorta

Q.39 What amount of blood is ejected from the left ventricle into systemic aorta per stroke?
A. 70mL
B. 100mL
C. 150mL
D. 175mL

Q.40 Blood pressure is lowest in:
A. Capillaries
B. Venules
C. Arteries
D. Vena cava

Q.41 During diastole, the status of cardiac valves is:
A. AV valves open, SL valves closed
B. AV valves closed, SL valves closed
C. AV valves open, SL valves open
D. Is variable in different body postures

Q.42 Thoracic lymph duct of the lymphatic system opens into:
A. Superior vena cava
B. Right sub-clavian vein
C. Left sub-clavian vein
D. Hepatic portal vein

Q.43 Which of these structures returns blood to the right atrium?
A. Coronary sinus
B. Inferior vena cava
C. Superior vena cava
D. All A, B, C

Q.44 In which of these blood vessels are elastic fibers present in the greatest amount?
A. Iliac artery
B. Hepatic portal vein
C. Femoral vein
D. Aorta

Q.45 All of the following represent non-specific mechanisms of body defense except:
A. Antibodies
B. Fever
C. $NaHCO_3$
D. Phagocytes

Q.46 Lymphatic system is present in:
A. CNS
B. Cornea
C. Bones
D. Digestive system

Q.47 Which of the following is/are related to lymphatic system in humans?
A. Absorption of fats
B. Fluid homeostasis
C. Defense against pathogens
D. All A, B, C

Q.48 Which of the following cells guard against over activity of cytotoxic T-cells?
A. Memory T-cells
B. Helper T-cells
C. Suppressor T-cells
D. Plasma clone cells

Q.49 Active immunity can be produced by the injection of:
A. Antibiotics
B. Blood plasma
C. Antibodies → Passive
D. Antigen

Q.50 Which of the following is the component of second line defense?
A. Skin only
B. Blood clot → 1st
C. Mucous membrane
D. Phagocytes

Q.51 In human beings, 'B' and T-lymphocytes are matured in _____ and _____, respectively.
A. Bone marrow, thymus gland
B. Bursa of fabricius, thymus
C. Spleen, thymus gland
D. Adenoids, Bursa of fabricius

Q.52 An antibody molecule consists of two heavy and two light chains. These chains are held together by disulphide bridges. The number of disulphide bridges present between two light chains is/are:
A. 0
B. 2
C. 3
D. 4

Q.53 A typical antibody molecule is _____ and _____ in nature.
A. X-shaped, globular protein
B. J-shaped, fibrous protein
C. Y-shaped, globular protein
D. Y-shaped, fibrous protein

Q.54 Which one of the following are called cytotoxic cells?
A. B-lymphocytes
B. Monocytes
C. T- lymphocytes
D. Neutrophils

Q.55 What is the function of the plasma cells during an immune response?
A. To secrete antibodies
B. To engulf bacteria
C. To kill cells infected with viruses
D. To change into memory cells

Q.56 There is no known cure of:
A. Snake bite
B. Rabies
C. Infectious hepatitis
D. AIDS

Q.57 Antibodies transfer from mother to child during breast feeding is an example of:
A. Active immunity
B. Natural passive immunity
C. Artificial passive Immunity
D. Artificial active immunity

Q.58 The system that comprises lymph capillaries, lymph vessels, lymphoid masses lymph nodes and lymph is called:
A. Transport system
B. Blood vascular system
C. Lymphatic system
D. Immune system

Q.59 Lymph is a fluid in transit between interstitial fluids and:
A. Lymph
B. Blood
C. Tissue fluid
D. Body fluid

Q.60 When some solute is added in a solution, the solute potential of that solution:
A. Increases
B. Decreases
C. Remains constant
D. Becomes zero

✓ **Current Electricity**

Q. 1 There are three bulbs of 60W 100W and 200W which bulb has thickest filament?
A. 100W
B. 200W
C. 60W
D. All

Q. 2 A current of 3 A passes through an electric circuit for 5 minutes and does a work of 900J. What is the emf of the source?
A. 3V
B. 1V
C. 5V
D. 10V

Q. 3 The specific resistance of a rod of copper as compared to that of thin wire of copper is:
A. Less
B. More
C. Same
D. Depends upon the length and area of cross-section of the wire

Q. 4 Which of following is not same as watt?
A. $\dfrac{A}{V}$
B. AV
C. $\dfrac{J}{s}$
D. $A^2\Omega$

Q. 5 The 'emf' is always _____ even when no current is drawn through the battery of cell.
A. Zero
B. Absent
C. Present
D. Maximum

Q. 6 A 60-watt light bulb carries a current of 0.5 A. The total charge passing through it in one hour is:
A. 120 C
B. 1800 C
C. 3600 C
D. 2400 C

Q. 7 In Ohm's law, which factor remains constant:
A. Volume
B. Length
C. Pressure
D. Temperature

Q. 8 The SI unit of electromotive force (emf) is:
A. Newton
B. Ampere
C. Volt
D. Joule

Q. 9 Which of the following has a negative temperature coefficient?
A. C
B. Mn
C. Fe
D. Ag

Q. 10 Which of the following causes production of heat when current is set up in the wire?
A. Inter atomic collisions
B. Collision of conduction electrons with atoms
C. Inter electron collisions
D. Jumping of electrons from higher orbits to lower orbits

Q. 11 The diagram shows the current I /voltage V graph for a length of resistance wire. Where can Ohm's law be applied to the wire?

A. At Y only
B. At Z only
C. From X to Y
D. From X to Z

Q. 12 Electric power is inversely proportional to
A. Resistance
B. Voltage
C. Current
D. Temperature

Q. 13 A certain piece of silver of given mass is to be made like a wire. Which of the following combination of length (L) and the area of cross-section will lead to the smallest resistance?
A. L and A
B. 2L and A/2
C. L/2 and 2 A
D. Any of the above, because volume of silver remains same

Q. 14 Two electric bulbs whose resistances are in the ratio of 1 : 2 are connected in parallel to a constant voltage source. The powers dissipated in them have the ratio
A. 1 : 2
B. 1 : 1
C. 2 : 1
D. 1 : 4

Q. 15 The brightness of a bulb will be reduced, if a resistance is connected in
A. Series with it
B. Parallel with it
C. Series or parallel with-it
D. Brightness of the bulb cannot be reduced

Q. 16 Volts / Ampere = ___ :
A. Ohm
B. Pascal
C. Ohm meter
D. None of them

Q. 17 In an electrical circuit two resistors of 2 Ω and 4 Ω respectively are connected in series to a 6 V battery. The heat dissipated by the 4 Ω resistor in 5 s will be
A. 5 J
B. 10 J
C. 20 J
D. 30 J

Q. 18 The resistance temperature coefficient is defined as
A. Increase in resistance per degree centigrade
B. Decrease in resistance per degree centigrade
C. The ratio of increase in resistance per degree centigrade to the resistance at $0°C$
D. The ratio of increases in resistance per degree centigrade to the rate of rise of resistance at $0°C$

Q. 19 The product of resistance and conductance of a resister is equal to
A. 1
B. Conductivity
C. Resistivity
D. Zero

Q. 20 The resistance of a wire is 20 ohms. It is so stretched that the length becomes three times, then the new resistance of the wire will be
A. 6.67 ohms
B. 60.0 ohms
C. 120 ohms
D. 180.0 ohms

Q. 21 If there are two bulbs connected in series and one blows out, what happens to the other bulb?
A. The other bulb continues to glow with the same brightness
B. The other bulb stops glowing
C. The other bulb glows with increased brightness
D. The other bulb also burns out

Q. 22 In an open circuit, the current flowing through the circuit is:
A. Infinite
B. Finite
C. Zero
D. Maximum

Q. 23 Terminal potential difference of a cell:
A. Increases with increase in its internal resistance
B. Decrease with increase in internal resistance
C. Is independent of it internal resistance
D. None of these

Q. 24 What is power of Watt if it is operated at 220V and the current in the circuit at 1.5 Amp.
A. 330 Watt
B. 430 Watt
C. 530 Watt
D. 500 Watt

Q. 25 During the verification of Ohm's law:
A. Ammeter and voltmeter should be connected in series
B. Ammeter should be connected in series and voltmeter in parallel
C. Ammeter should be connected in parallel and voltmeter in series
D. Ammeter and voltmeter should be connected in parallel

Q. 26 Resistivity at a given temperature depends upon:
A. Area of cross-section
B. Length
C. Nature of material of conductor
D. Both length and area

Q. 27 An electrical motor has power 2000 W and the resistance is 2 Ω. Find potential difference?
A. 6V
B. 63.25V
C. 0.5V
D. 0.09V

Q. 28 The resistance of a conductor at absolute zero is
A. Zero
B. Negative
C. Positive
D. None of the above

Q. 29 The resistivity of a material of resistance R, cross sectional area A, and length L is given by
A. $\rho = \dfrac{AL}{R}$
B. $\rho = RAL$
C. $\rho = \dfrac{RA}{L}$
D. $\rho = \dfrac{L}{RA}$

Q. 30 Wheat stone bridge is an arrangement consisting of
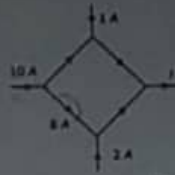A. 2 resistances
B. 3 resistances
C. 4 resistances
D. 5 resistances

Q. 31 The temperature coefficient of resistance of a material is expressed as

A. $\alpha = \dfrac{R_o - R_t}{R_o t}$ B. $\alpha = \dfrac{R_o + R_t}{R_o t}$ C. $\alpha = \dfrac{R_t - R_o}{R_o t}$ D. $\alpha = \dfrac{\rho_t - \rho_o}{R_o t}$

Q. 32 Reciprocal of resistivity is called _____:
A. Resistance   B. Inductance
C. Conductivity   D. Flexibility

Q. 33 The figure shows a network of currents. The magnitude of currents is shown here. The current I will be

A. 3 A   B. 9 A
C. 13 A   D. 19 A

Q. 34 Heater of 400 watts kept on for 5 hours will consume electrical power of
A. 2KWh   B. 20KWh3   C. 6KWh   D. 12KWh

Q. 35 When 2Ω, 4Ω and 6Ω resistor are connected in parallel their resultant equivalent resistance will be
A. 12Ω B. $11/12\Omega$ C. $12/11\Omega$ D. Data is insufficient

Q. 36 Kirchoff's law of junctions is also called the law of conservation of:
A. Energy   B. Chage
C. Momentum   D. Angula momentum

Q. 37 In series combination of resistances:
A. p.d. is same across each resistance   B. Total resistance is reduced
C. Current is same in each resistance   D. All above are true

Q. 38 The electrical device which is being used to compare the e.m.f. of two cells is known as
A. Rheostat   B. Wheatstone Bridge
C. Potentiometer   D. Galvanometer

Q. 39 A student carries out an experiment and plots the V-I graph of three samples of nichrome wire with resistances R_1 R_2 and R_3 respectively. Which of the following is true?
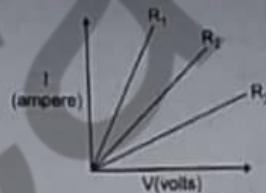
A. $R_1 = R_2 = R_3$ B. $R_1 > R_2 > R_3$
C. $R_3 > R_2 > R_1$ D. $R_2 > R_3 > R_1$

Q. 40 The direction of the flow of electron in closed circuit is
A. Along the electric field   B. Perpendicular to electric field
C. Opposite to electric field   D. Not a particular direction

Q. 41 By increasing the temperature _____ increases
A. Thermal agitation of atoms   B. Resistance
C. Conduction   D. Both 'A' and 'B'

Q. 42 kWh is the unit of
A. Energy   B. Emf
C. Power   D. Potential difference

Q. 43 If a wire conductor of 0.2-ohm resistance is doubled in length, its resistance becomes
A. 0.4 ohm   B. 0.6 ohm   C. 0.8 ohm   D. 1.0 ohm

Q. 44 Least current will flow through different resistors having same potential difference
A. 25-ohm resistor   B. 18-ohm resistor
C. 10-ohm resistor   D. 5-ohm resistor.

Q. 45 The brightness of a bulb will be reduced, if a resistance is connected in
A. Series with it   B. Parallel with it
C. Series or parallel with-it   D. Brightness of the bulb cannot be reduced

Q. 46 A carbon resistor connected to a battery of 50V and 2A current passing it. If voltag is increased to 75V the current will be
A. 1.5 A   B. 3 A
C. 6 A   D. 4.5 A

Q. 47 When bulbs are connected in series then generally to find power, we give priority to the relation

A. $P = IV$ B. $P = \dfrac{V^2}{R}$ C. $P = I^2R$ D. All

Q. 48 A wire of resistance R is cut into n equal parts. These parts are then connected in parallel. The equivalent resistance of the combination is

A. Nr   B. $\dfrac{R}{n}$ C. $\dfrac{n}{R}$ D. $\dfrac{R}{n^2}$

Q. 49 Three 2-ohm resistors are connected to form a triangle. The resistance between any two corners is

A. $6\,\Omega$ B. $(\dfrac{3}{4})\,\Omega$ C. $2\,\Omega$ D. $(\dfrac{4}{3})\,\Omega$

Q. 50 The condition for Wheatstone bridge to be balanced is given by

A. $\dfrac{R_1}{R_2} = \dfrac{R_4}{R_3}$ B. $\dfrac{R_1}{R_2} = \dfrac{R_3}{R_4}$ C. $\dfrac{R_2}{R_1} = \dfrac{R_3}{R_4}$ D. $\dfrac{R_3}{R_4} = \dfrac{R_1}{R_2}$

Q. 51 Three resistors R_1, R_2, and R_3 are connected in series. If $R_1 > R_2 > R_3$, the equivalent resistance will be:

A. Lesser than R_1 B. Equal to R_1
C. Lesser than R_3 D. Greater than R_1

Q. 52 When the potential difference is applied across the conductor its drift velocity _____ with increasing temperature

A. Increases   B. Decreases
C. Constant   D. First increase then decrease

Q. 53 What is the current in the arm OD
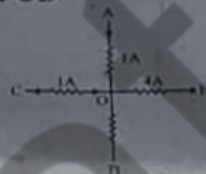
A. 3A from O to D   B. 2A from D to O
C. 2A from O to D   D. 4A from O to D

Q. 54 Three resistors connected in series have individual voltages labeled V1, V2, and V3, respectively. Which of the following expresses the value of the total voltage V_t taken over the three resistors together?

A. $V_T = V_1 + V_2 + V_3$ B. $V_T = (1/V_1 + 1/V_2 + 1/V_3)$
C. $V_T = V_1 = V_2 = V_3$ D. $V_T = (1/V_1 + 1/V_2 + 1/V_3)^{-1}$

Q. 55 The smallest resistance obtained by connecting 50 resistance of $\dfrac{1}{4}$ each is:

A. 200 ohms   B. 1/200 ohms
C. 50/4 ohms   D. 4/50 ohms

Q. 56 Length of two wires of same material have ratio 2:3 and their radii have the ratio 1:2 Then the ratio of their resistances is

A. $1:3$ B. $4:3$ C. $1:6$ D. $8:3$

Q. 57 Semiconductor is an example of

A. Ohmic conductor   B. Non Ohmic conductor
C. Insulator   D. Super conductor

Q. 58 An electric iron is marked 20 volts 500 W. The units consumed by it in using it for 24 hours will be _____ :

A. 12   B. 24
C. 5   D. 1100

Q. 59 The resistance of a coil is 4.2 ohm at 100 °C and the temperature coefficient of resistance of its material is 0.004/ °C. Its resistance at 0 °C

A. 6.5 ohm   B. 5 ohm   C. 3-ohm   D. 4 ohm

Q. 60 A battery is used to light a 24 W electric lamp. The battery provides a charge of 120 C in 60s.
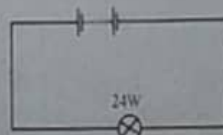
What is the potential difference across the bulb?

A. 5 V   B. 12 V
C. 24 V   D. 120 V

LOGICAL REASONING MDCAT

UNIT– 4 (A+SERIES)

✓ **COURSE OF ACTION**

Q.1 Statement:

A lot of unscrupulous and non affiliated colleges have started to lure unsuspecting students by giving attractive advertisements

Courses of Action

I. Students should make appropriate enquiries while enrolling in any course.

II. The government should initiate strict action against such college authorities.

A. If only I is most appropriate   B. If only II is most appropriate

C. If either I or II is most appropriate   D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.2 Statement:

The colony has suffered major thefts and break-ins due to lax security systems

Courses of Action

I. Security should be strengthened in the colony.

II. Residents and regular visitors and their vehicles should be provided with identity cards and stickers for better control of who is coming and going into the colony.

A. If only I is most appropriate   B. If only II is most appropriate

C. If either I or II is most appropriate   D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.3 Statement:

The LESCO has been unable to provide 24 hours electricity leading to tremendous economic loss.

Courses of Action

I. The Government must provide for increasing electricity consumption

II. The government should check the electricity theft cases.

A. If only I is most appropriate   B. If only II is most appropriate

C. If either I or II is most appropriate   D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.4 Statement:

A sting operation conducted by a TV news channel proved to be a total failure as the reporter who carried out the sting was found to have created a fake sting in order to gain publicity and money.

Courses of Action

I. Disciplinary action must be initiated immediately against the reporter.

II. The TV channel should be penalized and taken off air for a short period of time.

A. If only I is most appropriate   B. If only II is most appropriate

C. If either I or II is most appropriate   D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.5 Statement:

There is a shortage of power in Pakistan.

Courses of Action

I. There should be more power projects initiated by the government.

II. The government should encourage private investment in power projects.

A. If only I is most appropriate

B. If only II is most appropriate

C. If either I or II is most appropriate

D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.6 Statement:

The reduction of the tax rates has led to an increase in the tax collection as there has been higher compliance

Courses of Action

I. It should be made compulsory every Pakistani to pay tax.

II. Tax rates should be further reduced and a further increase in tax collections can be expected on doing so.

A. If only I is most appropriate

B. If only II is most appropriate

C. If either I or II is most appropriate

D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.7 Statement:

An unacceptable number of children die during the first year of their lives. The high incidence of infant deaths is a major cause for concern for the health ministry

Courses of Action

I. All government hospitals should be privatized to improve health care facilities.

II. Governments should commit higher levels of their budget to health services

A. If only I is most appropriate

B. If only II is most appropriate

C. If either I or II is most appropriate

D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.8 Statement:

The cream of Pakistan's cricket team is likely to retire in the next three years leaving a vacuum which the Pakistan cricket team is going to struggle to overcome.

Courses of Action

I. The PCB should start to induct youngsters into the team and start to give them exposure to pressure situations.

II. There should be a rotation policy adopted for senior players in order to prolong their careers and keep them injury free.

A. If only I is most appropriate

B. If only II is most appropriate

C. If either I or II is most appropriate

D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.9 **Statement:**

Studies of global warming show that the earth could be hotter by at least 6 degree C in the next 100 years, thanks to huge greenhouse gas emission.

Courses of Action

I. Since greenhouse gases are responsible for global warming, steps should be taken to control their emission immediately.

II. All new industries should be immediately stopped from starting to control environmental damage.

A. If only I is most appropriate

B. If only II is most appropriate

C. If either I or II is most appropriate

D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.10 **Statement:**

"New students of our college get frightened by ragging. The ragging prevalent in our college is also creating a bad name for our college"

Courses of Action

I. The college authorities take stringent action against those who are involved.

II. A strict anti ragging law should be passed to control ragging in our college

A. If only I is most appropriate

B. If only II is most appropriate

C. If either I or II is most appropriate

D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.11 **Statement**

The presence of Mafiosi in the education system of Sindh has increased drastically.

Courses of Action

I. There should be a special taskforce constituted to clean the system of its ills.

II. The Sindh government should resign immediately.

A. If only I is most appropriate

B. If only II is most appropriate

C. If either I or II is most appropriate

D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.12 **Statement:**

The Mobilink is playing dirty tricks with its competitor Telenor.

Courses of Action

I. Telenor should also do the same

II. Telenor should decrease the tariff rate of phone calls.

A. If only I is most appropriate

B. If only II is most appropriate

C. If either I or II is most appropriate

D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.13 **Statement:**

There is a proposal for the Sindh government to clear the slum areas in Karachi for beautification and economic development.

Courses of Action

I. The Sindh Government should compensate the affected persons with reasonable amount.

II. The Sindh Government should stop beautification and economic development work immediately.

A. If only I is most appropriate

B. If only II is most appropriate

C. If either I or II is most appropriate

D. If neither I nor II is most appropriate

E. If both I and II are most appropriate

Q.14 Rice : Cook :: Fish : ?

A. Bake

B. Fry

C. Sizzle

D. Roast

Q.15 If in a certain language GRASP is coded as BMVNK, which word would be coded as CRANE?

A. FUDQH

B. HWFSJ

C. GVERI

D. XMVIZ

Q.16 Statements:

Tom puts on his socks before he puts on his shoes.

He puts on his shirt before he puts on his jacket.

Tom puts on his shoes before he puts on his shirt.

If the first two statements are true, the third statement is

A. True

B. False

C. Uncertain

D. None of these

Q.17 Statements:

Some sacks are backs.

All backs are bones.

No bone is muscle.

Conclusions:

I.   Some sacks are not muscles.

II.   Some sacks are not bones.

III.   All sacks are bones.

IV.   No sack is muscle.

A. Only I follows

B. None follows

C. Only IV follows

D. None of these

Q.18 2, 0, 5, 3, ?, 8, 17

A. 9

B. 10

C. 6

D. 8

Q.19 What should come next in the series 12 234 3456?

A. 45678

B. 6789

C. 34567

D. None of these

Q.20 Find the one which does not belong to that group

A. Spider

B. Housefly

C. Mosquito

D. Bee

ENGLISH MDCAT

TEST-7 (A+ SERIES)

TOPICS:

VOICE AND VOCABULARY (76-100)

Directions:

Choose the Correct Voice

Q.1 After driving Professor Jones to the museum, she dropped him at his hotel.
A. After being driven to the museum, Professor Jones was dropped at his hotel.
B. Professor Jones was being driven dropped at his hotel.
C. After she had driven Professor Jones to the museum, she had dropped him at his hotel.
D. After she was driven Professor Jones to the museum, she had dropped him at his hotel.

Q.2 I remember my sister taking me to the museum.
A. I remember I was taken to the museum by my sister.
B. I remember being taken to the museum by my sister.
C. I remember myself being taken to the museum by my sister.
D. I remember taken to the museum by my sister.

Q.3 Who is creating this mess?
A. Who has been created this mess?
B. By whom has this mess been created?
C. By whom this mess is being created?
D. By whom is this mess being created?

Q.4 They greet me cheerfully every morning.
A. Every morning I was greeted cheerfully.
B. I am greeted cheerfully by them every morning.
C. I am being greeted cheerfully by them every morning.
D. Cheerful greeting is done by them every morning to me.

Q.5 Darjeeling grows tea.
A. Tea is being grown in Darjeeling.
B. Let the tea be grown in Darjeeling.
C. Tea is grown in Darjeeling.
D. Tea grows in Darjeeling.

Q.6 They have built a perfect dam across the river.
A. Across the river a perfect dam was built.
B. A perfect dam has been built by them across the river.
C. A perfect dam should have been built by them.
D. Across the river was a perfect dam.

Q.7 Do you imitate others?
A. Are others being imitated by you?
B. Are others imitated by you?
C. Have others being imitated by you?
D. Were others being imitated by you?

Q.8 You need to clean your shoes properly.
A. Your shoes are needed to clean properly.
B. You are needed to clean your shoes properly.
C. Your shoes need to be cleaned properly.
D. Your shoes are needed by you to clean properly.

Q.9 Did she do her duty?
A. Was her duty be done by her?
B. Was her duty done by her?
C. Her duty was being done by her.
D. Was the duty being done by her?

Q.10 The invigilator was reading out the instructions.
A. The instructions were read by the invigilator.
B. The instructions were being read out by the invigilator.
C. The instructions had been read out by the invigilator.
D. The instructions had been read by the invigilator.

Q.11 You can play with these kittens quite safely.
A. These kittens can played with quite safely.
B. These kittens can play with you quite safely.
C. These kittens can be played with you quite safely.
D. These kittens can be played with quite safely.

Q.12 A child could not have done this mischief.
A. This mischief could not be done by a child.
B. This mischief could not been done by a child.
C. This mischief could not have been done by a child.
D. This mischief a child could not have been done.

Q.13 James Watt discovered the energy of steam.
A. The energy of steam has been discovered James Watt.
B. The energy of steam was discovered by James Watt.
C. James Watt was discovered by the energy of steam.
D. James Watt had discovered energy by the steam.

Q.14 She makes cakes every Sunday.
A. Every Sunday cakes made by her.
B. Cakes make her every Sunday.
C. Cakes are made by her every Sunday.
D. Cakes were made by her every Sunday.

Q.15 Work hard.
A. Let the work be hard.
B. Work be hard.
C. Let you work be hard.
D. You are advised to work hard.

Q.16 She spoke to the official on duty.
A. The official on duty was spoken to by her.
B. The official was spoken to by her on duty.
C. She was spoken to by the official on duty.
D. She was the official to be spoken to on duty.

Q.17 The doctor advised the patient not to eat rice.
A. The patient was advised by the doctor not to eat rice.
B. The patient was advised by the doctor that he should not eat rice.
C. The patient was being advised by the doctor that he should not rice by the doctor.
D. The patient has been advised not to eat rice by the doctor.

Q.18 I cannot accept your offer.
A. Your offer cannot be accepted by me.   B. I cannot be accepted by your offer.
C. The offer cannot be accepted by me.   D. Your offer cannot been accepted.

Q.19 You should open the wine about three hours before you use it.
A. Wine should be opened about three hours before use.
B. Wine should be opened by you three hours before use.
C. Wine should be opened about three hours before you use it.
D. Wine should be opened about three hours before it is used.

Q.20 They will inform the police.
A. The police will be informed by them.   B. The police will inform them.
C. The police are informed by them.   D. Informe will be the police by them.

Q.21 Do not beat the dog.
A. Let the dog be not beaten.   B. Let the dog be beaten not.
C. Let not the dog been beaten.   D. Let the dog not be beaten.

Q.22 Harry ate six shrimp at dinner.
A. At dinner, six shrimp were eaten by Harry.   B. At dinner, six shrimp had been eaten by Harry.
C. At dinner, six shrimp was eaten by Harry.   D. At dinner, six shrimp had eaten by Harry.

Q.23 I think that someone built the house in 1814.
A. I think that the house was built in 1814 by him.   B. I think that the house was built in 1814.
C. I think that the house built in 1814.   D. I think that the house had been built in 1814.

Q.24 We are going to watch a movie tonight.
A. A movie is going to be watched by us tonight.   B. A movie has been gone to be watched by us tonight.
C. A movie is being watched tonight by us.   D. A movie tonight is being watched by us.

Q.25 I ran the obstacle course in record time.
A. The obstacle course was run by me in record time.
B. The obstacle course had run by me in record time.
C. The obstacle course was being run by me in record time.
D. The obstacle course had been run by me in record time.

Directions:
Choose the correct SYNONYM.

Q.26 INTENDED
A. Envisioned   B. Inadvertent   C. Spontaneous   D. Impulsive

Q.27 IN VAIN
A. facile   B. futile   C. fertile   D. frivolous

Q.28 ILLUMINATION
A. oblivion   B. obscurity   C. anonymity   D. clarification

Q.29 INVARIABLY
A. sporadically   B. intermittently   C. perpetually   D. sequentially

Q.30 IRRITABLE
A. contentious   B. pretentious   C. forbearing   D. intriguing

Q.31 INSINUATED
A. proclaimed   B. convinced   C. alluded   D. impelled

Q.32 INTENTLY
A. vividly   B. keenly   C. distractedly   D. deliberately

Q.33 INDUSTRY
A. assiduity   B. slackness   C. ambiguity   D. drabness

Q.34 INTOLERABLE
A. domineering   B. admissible   C. moldable   D. overwhelming

Q.35 JUDGMENT
A. absurdity   B. discernment   C. bossiness   D. officiousness

Directions:
Choose the correct ANTONYMS.

Q.36 JUBILANT
A. betrayed   B. excited   C. overjoyed   D. dismayed

Direction:
Choose the correct WORD with respect to the given context.

Q.37 The levels of violence have become_____; therefore, drastic measures are needed
A. intolerable   B. disconsolate   C. ludicrous   D. abrupt

Q.38 Despite the miserable conditions I am living in, I can focus _____on things that fascinate me.
A. haphazardly   B. irritably   C. intently   D. appallingly

Q.39 When faced with challenge, it is better to _____in the way than run out of the way.
A. limp   B. beckon   C. fringe   D. flick

Directions:
Choose the CORRECT spelling.

Q.40
A. imperceptibly   B. imparceptibly   C. imperceptibily   D. impercaptibly

ENGLISH MDCAT TEST-7 (A+ SERIES)