University of Health Sciences, Lahore

Total MCQs: 220 **Max. Marks: 1100**

ENTRANCE TEST – 2015

For F.Sc. and Non-F.Sc. Students

Time Allowed: 150 minutes

Instructions:

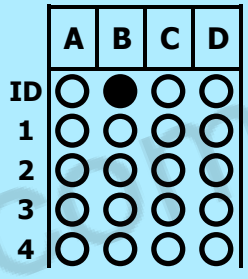
i. Read the instructions on the MCQs Response Form carefully.
ii. Choose the **Single Best Answer** for each question.
iii. Candidates are strictly prohibited from giving any identification mark except Roll No. & Signature in the specified columns only.

COMPULSORY QUESTION FOR IDENTIFICATION

Q-ID. What is the color of your Question Paper?

A) White. C) Pink.
B) Blue. D) Green.

Ans: Colour of your Question Paper is Blue. Fill the Circle Corresponding to Letter 'B' against 'ID' in your MCQ response form (Exactly as shown in the diagram).



PHYSICS

Q.1 **One method of creating an inverted population is known as _____ and consist of illuminating the laser material with light.**

A) Optical Pumping C) Bremsstrahlung
C) Excitation D) Holography

Q.2 **In population inversion (Ruby Laser) atoms can reside in the excited state for:**

A) 10^{-11} C) 10^{-3}
C) 10^{-8} D) 10^{+3}

Q.3 **If electrons of charge 'e' moving with velocity 'v' are accelerated through a potential difference 'V' and strike a metal target, then velocity of electrons is:**

A) $\frac{Ve}{m}$ C) $\sqrt{\frac{Ve}{2m}}$
B) $\sqrt{\frac{Ve}{m}}$ D) $\sqrt{\frac{2Ve}{m}}$

Q.4 **In X-ray tube, electrons after being accelerated through velocity 'v' strike the target, then the wavelength of emitted X-rays is:**

A) Not greater than $\frac{hc}{eV}$ C) Equal to the $\frac{h}{mV}$
B) Not less than $\frac{hc}{eV}$ D) Equal to $\frac{hc}{eV}$

Q.5 **In the reaction, $^{234}_{92}Th \longrightarrow {}^{234}_{91}Y + {}^{0}_{-1}e$ the electron $^{0}_{-1}e$ emits from the**

A) 1st Orbit
B) 2nd Orbit
C) Nucleus
D) Valence Shell

Q.6 **According to the equation $^{A}_{Z}X \longrightarrow Y + 3\alpha$ particles, what are the atomic and mass numbers of 'Y'?**

A) Z – 6, A – 12
B) Z – 2, A – 4
C) Z + 1, A
D) Z + 3, A

Q.7 **A certain radioactive nuclide of mass number 'x' decays by β-emission and α-emission to a second nuclide of mass number 't'. Which of following correctly relates 'x' and 't'?**

A) x = t + 4
B) x = t – 4
C) x – 3 = t
D) x – 1 = t

Q.8 **During the decay of radioactive isotopes $^{232}_{90}X$ to a stable isotope, six α-particles and four β-particles are emitted, what is the atomic number 'Z' and mass number 'A' of the stable isotopes.**

A) Z = 70, A = 220
B) Z = 78, A = 212
C) Z = 82, A = 212
D) Z = 82, A = 208

Q.9 **Cobalt 60 is used in medicine and is an intense source of:**

A) α-particles
B) β-particles
C) γ-rays
D) Neutrons

Q.10 **In fluid flow, for the equation of continuity $A_1v_1 = A_2v_2$. If velocity of the fluid at one end is doubled, then what will be the cross-sectional area at this end?**

A) Double
B) Half
C) $(Half)^2$
D) $(Double)^2$

Q.11 **The value of least distance vision for normal eye is**

A) 20 cm
B) 30 cm
C) 25 cm
D) 40 cm

Q.12 **The distance between two dark adjacent fringes is mathematically written as:**

A) $\Delta Y = \frac{\lambda L}{d}$
B) $\Delta Y = \frac{\lambda}{dL}$
C) $\Delta Y = \frac{\lambda d}{L}$
D) $\Delta Y = \frac{d}{\lambda L}$

Q.13 **In Young's Double Slit Experiment, slit separation x = 0.05 cm, distance between screen and slit D = 200 cm, fringes separation x = 0.13 cm, then the wavelength 'λ' of light is:**

A) $\lambda = 1.23 \times 10^{-2}$ m
B) $\lambda = 3.25 \times 10^{-7}$ m
C) $\lambda = 4.55 \times 10^{-5}$ m
D) $\lambda = 5.1 \times 10^{-7}$ m

Q.14 **In normal adjustment of compound microscope, the eye piece is positioned so that the final image is formed at:**

A) Optical Center
B) Infinity
C) Principle Focus
D) Near Point

Q.15 **Mathematical formula of maximum velocity (v_o) for a body executing simple harmonic motion is:**

A) $v_o = \omega x_o$
B) $v_o = \frac{k}{m}\sqrt{x_o^2 - x^2}$
C) $v_o = v\sqrt{1 - \frac{x^2}{x_o^2}}$
D) $v_o = m\sqrt{x_o^2 - x^2}$

Q. 16 **A body is having weight 20 N, when the elevator is descended with a = 0.1 ms^{-2}, then the value of tension 'T' is:**

A) 196 N
C) 19.8 N
C) 1.98 N
D) 2 N

Q.17 **Sodium 24 has half-life of 15 hour and it is used in medicine to estimate:**

A) Kidney Function
B) Plasma Blood Volume
C) Iron in Plasma
D) Thyroid Function

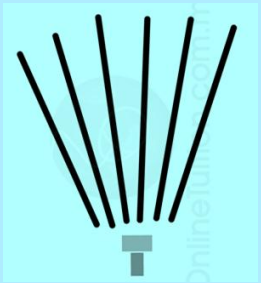
Q.18 **The unit of temperature in base unit is:**

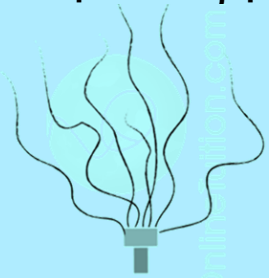
A) Celsius
B) Degree
C) Kelvin
D) Fahrenheit

Q.19 **The dimensions of pressure is:**

A) $[M^{-1}L^{2}T^{-2}]$
B) $[ML^{-1}T]$
C) $[M^{-1}L^{-2}T^{-2}]$
D) $[ML^{-1}T^{-2}]$

Q.20 **In Wilson Cloud Chamber which of the following tracks represented β-particles?**

A) 

C) 

B) 

D) 

Q.21 **Mass flow per second of the fluid is given by:**

A) ρAv
B) Av
C) ρv
D) $\frac{Av}{\rho}$

Q.22 **The dimension of coefficient of viscosity is:**

A) $[M^{-2}L^{-1}T^{-1}]$
B) $[ML^{-2}T^{-1}]$
C) $[ML^{-2}T^{1}]$
D) $[ML^{-1}T^{-1}]$

Q.23 **What should be the length of simple pendulum whose period is 6.28 second at a place where g = 10 ms^{-2}.**

A) 0.28 m
B) 10.8 m
C) 6.28 m
D) 10 m

Q.24 **What should be the ration of kinetic energy to total energy for simple harmonic oscillator?**

A) $1 - \frac{x^2}{x_o^2}$
B) 1
C) $(x_o^2 - x^2)$
D) $\frac{1}{2}x^2$

Q.25 **An observer moves with velocity 'v_o' toward a stationary source, then the number of waves received in one second is:**

A) $f' = f\left(\frac{v}{v + v_o}\right)$
B) $f' = f\left(\frac{v}{v - v_o}\right)$
C) $f' = f\left(\frac{v + v_o}{v}\right)$
D) $f' = f\left(\frac{v - v_o}{v}\right)$

Q.26 **Strain energy in a deformed energy is stored in the form of:**

A) Elastic Energy
B) Potential Energy
C) Plastic Energy
D) Kinetic Energy

Q.27 **A wire of area of cross section 'A' and original length 'l' is subjected to a load 'L'. A second wire of same material with an area is '2A' and length '2l' is subjected to the same load 'L'. If the extension in first wire is 'X' and second wire is 'Y', find the ratio 'X/Y'.**

A) $\frac{1}{4}$
B) $\frac{1}{2}$
C) $\frac{1}{1}$
D) $\frac{2}{1}$

Q.28 **Two sample of gases '1' and '2' are taken at same temperature and pressure but the ratio of number of their volume is $V_1:V_2 = 2:3$. What is the ration of number of moles of the gas sample?**

A) 3:2
B) $\sqrt{2}:\sqrt{3}$
C) 4:9
D) 2:3

Q.29 **Root mean square velocity of a gas having pressure 'P' and density 'ρ' is given by:**

A) $\sqrt{\frac{3P}{\rho}}$
B) $\frac{3P}{\rho}$
C) $\sqrt{\frac{3\rho}{P}}$
D) $\frac{3\rho}{P}$

Q.30 **When the rate of gas changes without change in temperature, the gas is said to undergo:**

A) Isothermal Process
B) Adiabatic Process
C) Isochoric Process
D) Isobaric Process

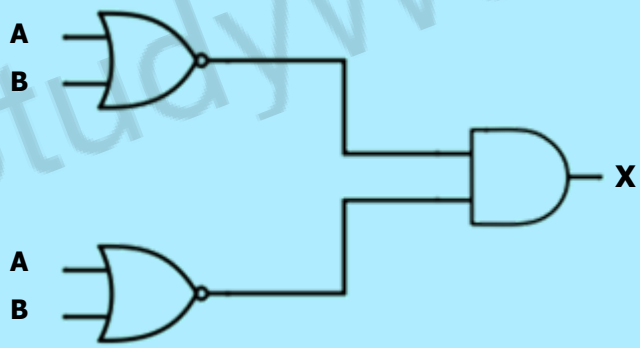
Q.31 **What is the 273 k on the Celsius scale of temperature?**

A) 0.15 °C
B) 273.15 °C
C) -0.15 °C
D) -273.15 °C

Q.32 **If heat 'Q_1' is absorbed at temperature 'T' and heat 'Q_2' is absorbed at temperature of triple point of water, then unknown temperature of system (in K) is:**

A) 273.16
B) 273.16 Q_2/Q_1
C) 273.16 Q
D) 273.16 Q_1/Q_2

Q.33 **If the fundamental logic gates are connected as:**



What are the mathematical notation for this logic gate?

A) $(\overline{A + B}).(A + B)$
B) $(\overline{A + B}).(\overline{A + B})$
C) $(\overline{A + B})(\overline{A} + \overline{B})$
D) $\overline{AB} + \overline{AB}$

Q.34 **Which combinations of seven identical resistors each of 2 Ω gives rise to the resultant of 10/11 Ω?**

A) 5 Parallel, 2 Series
B) 4 Parallel, 3 Series
C) 3 Parallel, 4 Series
D) 2 Parallel, 5 Series

Q.35 **If a resistor having resistance 'R' is cut into three equal parts, then the equivalent of parallel combination is:**

A) $\frac{6}{R}$
B) $\frac{3}{R}$
C) $\frac{R}{9}$
D) $\frac{R}{3}$

Q.36 Which of the following is the truth table for the logic gate;

A)

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

C)

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	1

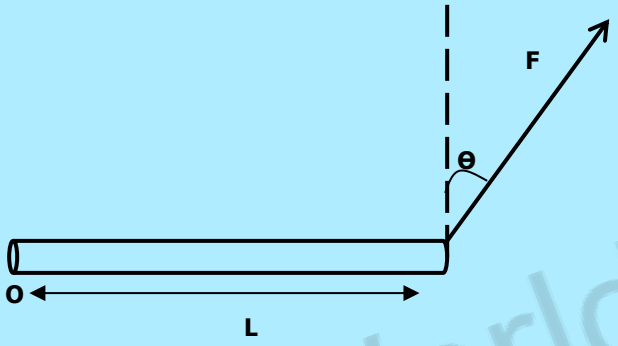
B)

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

D)

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

Q.37 A bar of length 'L' pivoted at 'O' is acted by a force 'F' at an angle 'Θ' with vertical line as shown in figure;



What is the moment of force?

A) L sinΘ
B) L cosΘ
C) LF cosΘ
D) LF sinΘ

Q.38 The resistance of a piece of wire is 12 Ω. It is bent to form an equilateral triangle. What is the equivalent resistance between any two corners of the triangles?

A) 1.3 Ω
B) 2.0 Ω
C) 4.0 Ω
D) 2.7 Ω

Q.39 Magnetic field strength is measure in:

A) Wbm^{-1}
B) Wbm^{-2}
C) Wbm^{2}
D) Wb

Q.40 Force on current carrying conductor per unit length is given by:

A) IL sinΘ
B) ILB
B) IL
D) IB sinΘ

Q.41 In the case when the electrons lose all their kinetic energy (K.E.) in the first collision, the X-ray photon emitted has which of the following set of frequency and wavelength?

A) f_{max}, λ_{min}
B) f_{max}, λ_{max}
C) f_{min}, λ_{max}
D) f_{min}, λ_{min}

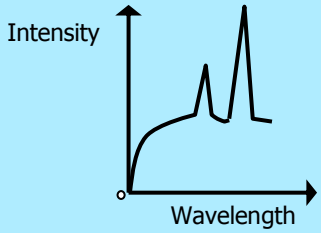
Q.42 If 'A' is fundamental dimension of ampere then the dimension of magnetic field strength is:

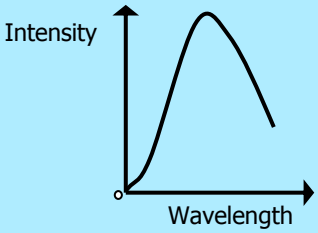
A) $[MT^2A^{-2}]$
B) $[MT^2A^{-1}]$
C) $[MT^2L^2A^{-1}]$
D) $[MT^2L^{-2}A^{-2}]$

Q.43 The potential difference between target and cathode of an X-rays tube is 20 kV and current is 20 mA. What is the λ_{min} of the emitted X-ray?

A) 6.19×10^{-4} m
B) 6.19×10^{-14} m
C) 6.19×10^{-11} m
D) 6.19×10^{-19} m

Q.44 Which of the following spectra is most typical of the output of an X-ray tube?

A)


C)


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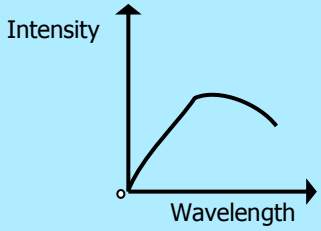
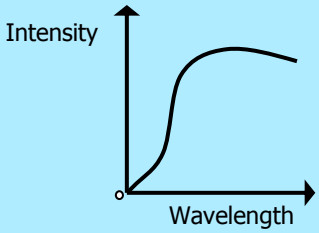


D)


CHEMISTRY

Q.45 'K_a' values of few organic acids are given:

Acid	K_a Value
CH_3COOH	1.85×10^{-5}
CCl_3COOH	2.3×10^{-2}
$CHCl_2COOH$	5.0×10^{-3}
$CH_2ClCOOH$	1.3×10^{-3}

The order of acid strength is:

A) $CCl_3COOH > CHCl_2COOH > CH_2ClCOOH > CH_3COOH$
B) $CH_3COOH > CHCl_2COOH > CCl_3COOH > CH_2ClCOOH$
C) $CHCl_2COOH > CH_3COOH > CCl_3COOH > CH_2ClCOOH$
D) $CCl_3COOH > CH_3COOH > CHCl_2COOH > CH_2ClCOOH$

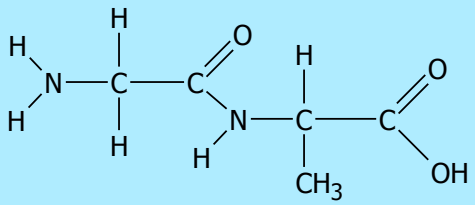
Q.46 An organic acid 'z' reacts separately with sodium bicarbonate, sodium hydroxide and sodium carbonate. Which one of the following represent the structure of 'z'?

A) $HCOOC_2H_5$
B) $CH_3—CH=CH_2$
C) CH_3CH_2OH
D) $H_3C—CH_2—COOH$

Q.47 Carboxylic acids are rather hard to reduce, which powerful reducing agent can be used to convert them to the corresponding primary alcohol:

A) $H_2SO_4/HgSO_4$
B) V_2O_5
C) $LiAlH_4$
D) $K_2Cr_2O_7/H_2SO_4$

Q.48



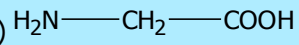
This structure is

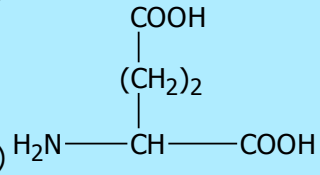
A) Gly-Ala (dipeptide)
B) Asp-Gly (dipeptide)
C) Gly-Val (dipeptide)
D) Asp-Val (dipeptide)

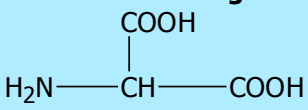
Q.49 Which one of the following amino acids is basic in nature?

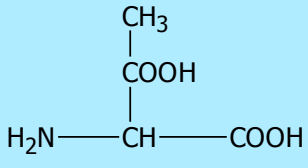
A) Glycine
B) Alanine
C) Lysine
D) Glutamic acid

Q.50 Which one of the following structures shows the correct formula of glutamic acid?

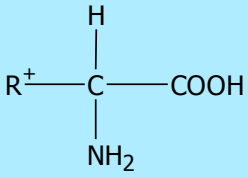
A) 

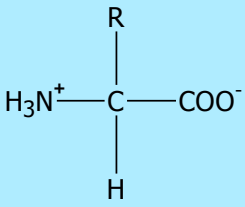
B) 

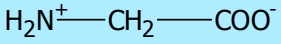
C) 

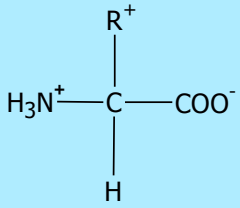
D) 

Q.51 Select the correct Zwitter ionic structures of an amino acid.

A) 

B) 

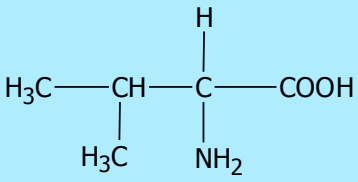
C) 

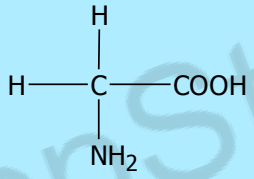
D) 

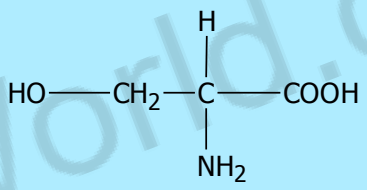
Q.52 How many moles of sodium are present in 0.1 g of sodium?

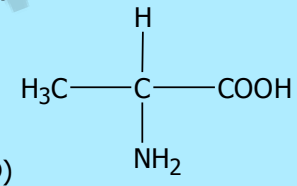
A) 4.3×10^{-3}
B) 4.03×10^{-1}
C) 4.01×10^{-2}
D) 4.3×10^{-2}

Q.53 The structural formula for alanine is:

A) 

B) 

C) 

D) 

Q.54 With the help of spectral data given calculate the mass of Neon and encircle the best option. (Percentage of $_{10}Ne^{20}$, $_{10}Ne^{21}$ and $_{10}Ne^{22}$ are 90.92%, 0.26% and 8.82% respectively).

A) 22.18 amu
B) 21.18 amu
C) 20.18 amu
D) 22.20 amu

Q.55 Which one of the following pairs has the same electronic configuration as possessed by Neon (Ne-10)?

A) Na^+, Cl^-
B) K^+, Cl^-
C) Na^+, Mg^{2+}
D) Na^+, F^-

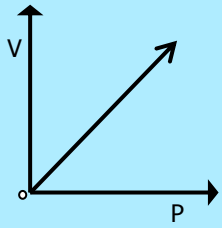
Q.56 If the volume of a gas collected at a temperature of 600 °C and pressure of 1.05×10^5 Nm^{-2} is 60 dm^3, what would be the volume of gas at STP ($P=1.01 \times 10^3$ Nm^{-2}, T = 273 K)?

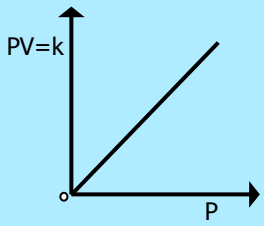
A) 25 cm^3
B) 75 cm^3
C) 100 cm^3
D) 51 cm^3

Q.57 There are four orbitals s, p, d and f. Which order is correct with respect to the increasing energy of the orbitals?

A) 4s < 4p < 4d < 4f
B) 4p < 4s < 4f < 4d
C) 4s < 4f < 4p < 4d
D) 4f < 4s < 4d < 4p

Q.58 Which graph represents Boyle's law?

A)


C)


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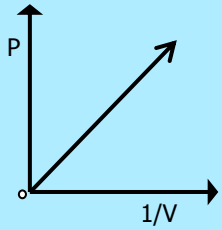
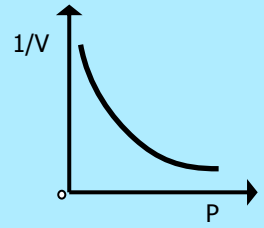


D)


Q.59 Which one of the following hydrogen bonds is stronger than others?

A) $N^{\delta-}—H^{\delta+}$ ..... $N^{\delta-}—H^{\delta+}$
B) $F^{\delta-}—H^{\delta+}$ ..... $F^{\delta-}—H^{\delta+}$
C) $O^{\delta-}—H^{\delta+}$ ..... $O^{\delta-}—H^{\delta+}$
D) $N^{\delta-}—H^{\delta+}$ ..... $O^{\delta-}—H^{\delta+}$

Q.60 The half-life of N_2O_5 at 0 °C is 24 minutes. How long will it take for sample of N_2O_5 to decay to 25% of its original concentration?

A) 24 minutes
B) 72 minutes
C) 120 minutes
D) 48 minutes

Q.61 When the change in concentration is 6×10^{-4} mol dm^{-3} and time for that change is 10 seconds, the rate of reaction will be

A) 6×10^{-3} mol dm^{-3} sec^{-1}
B) 6×10^{-4} mol dm^{-3} se^{-1}
C) 6×10^{-2} mol dm^{-3} sec^{-1}
D) 6×10^{-5} mol dm^{-3} sec^{-1}

Q.62 Which one of the following will have the smallest radius?

A) Al^{+3}
B) Si^{+4}
C) Mg^{+2}
D) Na^{+1}

Q.63 Keeping in view the size of atoms, which order is correct?

A) N > C
B) P > Si
C) Ar > Cl
D) Li > Be

Q.64 On the basis of oxidizing power of halogens, which reaction is possible?

A) $I_2 + 2Cl^- \longrightarrow Cl_2 + 2I^-$
B) $Br_2 + 2I^- \longrightarrow I_2 + 2Br^-$
C) $Cl_2 + 2F^- \longrightarrow F_2 + 2Cl^-$
D) $I_2 + 2Br^- \longrightarrow Br_2 + 2I^-$

Q.65 Which one of the following gases is used as mixture for breathing by sea divers?

A) Oxygen and Nitrogen
B) Nitrogen and Helium
C) Helium and Oxygen
D) Helium and Hydrogen

Q.66 $[Ti(H_2O)_6]^{+3}$ transmits

A) Yellow and Red light
B) Yellow and Blue light
C) Red and white light
D) Red and blue light

Q.67 Electronic configuration of Gold [Au79] is

A) [Xe] $4f^{14}$, $5d^{10}$, $6s^1$
B) [Xe] $4f^{10}$, $5d^{10}$, $6s^2$
C) [Xe] $4f^{14}$, $5d^9$, $6s^2$
D) [Xe]$4f^{14}$, $5d^{10}$, $6s^2$

Q.68 About 80% of ammonia is used for the production of

A) Explosives
B) Fertilizers
C) Nylon
D) Polymers

Q.69 **Urea is the most widely used nitrogen fertilizer in Pakistan. Its composition Is**

A) NH_2CO
B) $N_2H_5CO_2$
C) $N_2H_4CO_2$
D) N_2H_4CO

Q.70 **During the manufacture of nitric acid, nitric oxide is oxidized to nitrogen dioxide. This reaction is given as:**

$$2NO_{(g)} + O_{2(g)} \rightleftharpoons 2NO_{2(g)} \quad \Delta H = -114 \text{ kJ/mol}$$

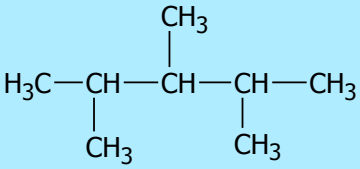
According to Le Chatelier's Principle

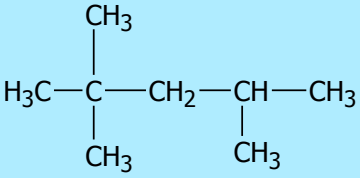
A) Reaction must not be temperature dependent
B) Reaction must be carried out at room temperature
C) Reaction must be carried out at low temperature
D) Reaction must be carried out at high temperature

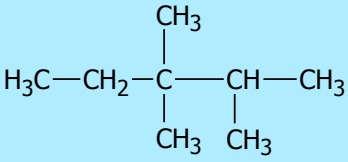
Q.71 **What is the percentage of nitrogen in NH_3NO_3?**

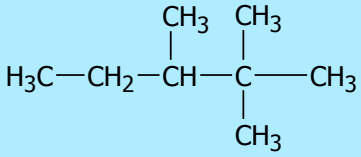
A) 65%
B) 35%
C) 20%
D) 58%

Q.72 **The structural formula of 2,3,4 trimethylpentane is:**

A)


B)


C)


D)


Q.73 **Which one of the following is a powerful electrophile used to attack on the electrons of benzene ring?**

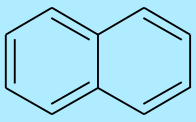
A) $FeCl_2$
B) $FeCl_4^-$
C) Cl^+
D) Cl_2

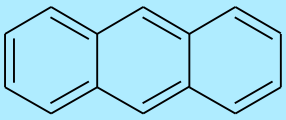
Q.74 **Order of reactivity of alkenes with hydrogen halide is:**

A) HBr > HI > HCl
B) HI > HBr > HF
C) HF > HI > HCl
D) HI > HBr > HCl

Q.75 **The given three hydrocarbons are**

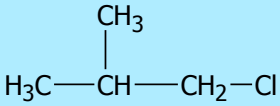

Benzene


Naphthalene


Anthracene

A) Alicyclic hydrocarbons
B) Aromatic hydrocarbons
C) Acyclic Hydrocarbons
D) Heterocyclic hydrocarbons

Q.76 **The IUPAC name of the given compound is**



A) 1-Chloro-2-methylpropane
B) 1-Chloro-2-methylbutane
C) Isobutyl chloride
D) 2-Methyl-3-chloropropane

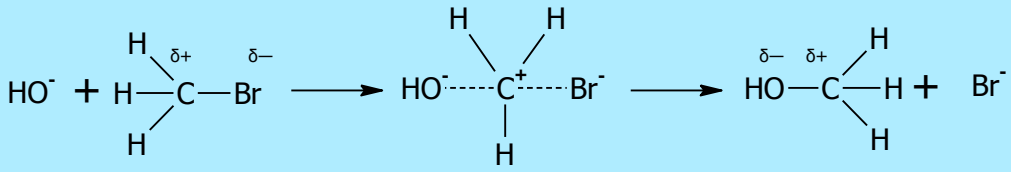
Q.77 **Which one of the following was used as one of the earliest antiseptic and disinfectant?**

A) Phenol
B) Ether
C) Ethanol
D) Methanol

Q.78 **Which one of the following is NOT able to denature the ethanol?**

A) Methanol
B) Lactic acid
C) Pyridine
D) Acetone

Q.79 In the below reaction, the configuration of product is



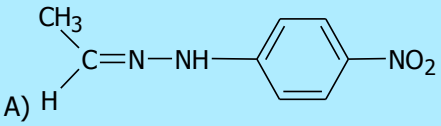
A) 100% same of the configuration of reactant
B) 50% retained
C) 50% inverted
D) 100% opposite from configuration of reactant

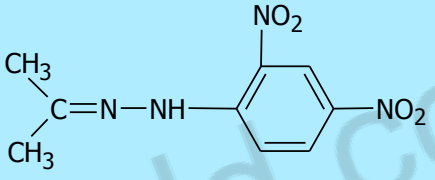
Q.80 How will you distinguish between methanol and ethanol?
A) By Lucas test
B) By silver mirror test
C) By oxidation
D) By Iodoform test

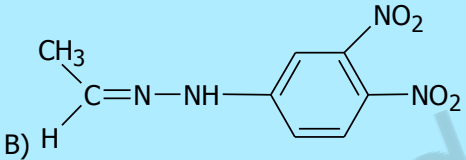
Q.81 To produce absolute alcohol (100%) from rectified spirit (95.6% alcohol), the remaining 4.4% water must be removed by a drying agent such as
A) Calcium oxide
B) Calcium chloride
C) Calcium carbonate
D) Carbon monoxide

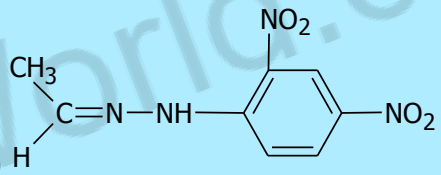
Q.82 Which one of the following is also called silver mirror test?
A) Fehling's solution test
B) Iodoform test
C) Tollen's reagent
D) Benedict's solution tests

Q.83 When acetaldehyde reacts with 2,4-dinitrophenylhydrazine (2,4-DNPH), which one of the following products is formed?

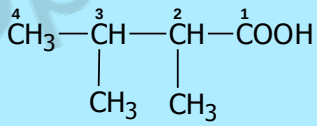
A) 

C) 

B) 

D) 

Q.84 Both aldehydes and ketones are planer to the neighborhoods of carbonyl (C=O) group. Which one of the following bonds is distorted towards the oxygen atoms?
A) π-bond of C and O
B) Sigma bond of C and H
C) Sigma bond of C and O
D) Sigma bond of C and C

Q.85 In  **which one is α-carbon atom?**

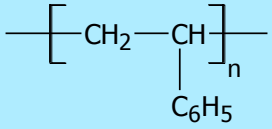
A) 1
B) 3
C) 2
D) 4

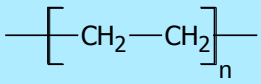
Q.86 The specific substances (metabolite) that fits on the enzyme surface and is converted to products is called
A) Co-factor
B) Prosthetic group
C) Isoenzyme
D) Substrate

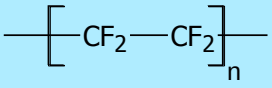
Q.87 Polymide is formed due to the condensation od hexane-dioic acid with
A) Hexane-1,5-diamine
B) Hexane-1,6-diamine
C) Hexane-1,4-diamine
D) Hexane-2,5-diamine

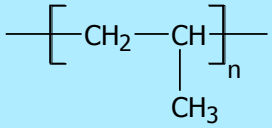
Q.88 Haemoglobin is a
A) Genetic protein
B) Building protein
C) Transport protein
D) Structural protein

Q.89 Which one of the following polymer is polystyrene?

A) 

B) 

C) 

D) 

Q.90 Out of these which nitrogen base is NOT present in DNA?

A) Adenine
B) Guanine
C) Uracil
D) Thymine

Q.91 Which one of the following is an example of co-polymer?

A) Polyamide
B) Polystyrene
C) Polyvinyl acetate
D) Polyvinyl chloride

Q.92 The biggest source of acid rain is the oxide of

A) N
B) S
C) O
D) C

Q.93 Burning of which one of the following waste is considered as useful industrial fuel or to produce electricity

A) Metals
B) Grass
C) Paper
D) Plastic

Q.94 Which of the following is the correct dot and cross diagram of bonding between two chlorine atoms?

A) 

B) 

C) 

D) 

Q.95 The equation that represents standard enthalpy of atomization of hydrogen is:

A) $\frac{1}{2}H_2O_{(l)} \longrightarrow H_{2(g)} + \frac{1}{2}O_{(g)}$ +218 kJ mol^{-1}

B) $\frac{1}{2}H_2O_{(l)} \longrightarrow H_{2(g)} + \frac{1}{2}O_{(g)}$ –218 kJ mol^{-1}

C) $\frac{1}{2}H_{2(g)} \longrightarrow H_{(g)}$ +218 kJ mol^{-1}

D) $\frac{1}{2}H_{2(g)} \longrightarrow H_{(g)}$ –218 kJ mol^{-1}

Q.96 Standard enthalpy of combustion of graphite at 25 °C is –393.51 kJ mol^{-1} and that of diamond is –395.41 kJ mol^{-1}. The enthalpy change for graphite is:

A) – 1.91
B) +2.1
C) –2.1
D) +1.91

Q.97 10.0 grams of glucose are dissolved in water to make 100 cm^3 of its solution, its molarity is:

A) 0.55
B) 0.1
C) 10
D) 1

Q.98 Given solution contains 16.0 g of CH_3OH, 92.0 g of C_2H_5OH and 36 g of water. Which statement about mole fraction of the components is true?

A) Mole fraction of CH_3OH is highest among all components
B) Mole fraction of C_2H_5OH and H_2O is the same
C) Mole fraction of CH_3OH and C_2H_5OH is same
D) Mole fraction of H_2O is the lowest among all

Q.99 Study the following facts

$$\mathbf{Zn \longrightarrow Zn^{+2} + 2e^-} \qquad \mathbf{E^o = +0.76\ V}$$
$$\mathbf{Cu \longrightarrow Cu^{+2} + 2e^-} \qquad \mathbf{E^o = -0.34\ V}$$

A) $Cu + Zn^{+2} \longrightarrow Cu^{+2} + Zn$

B) $Cu^{+2} + Zn^{+2} \longrightarrow Cu + Zn$

C) $Cu^{+2} + Zn \longrightarrow Cu + Zn^{+2}$

D) $Cu^{+2} + Zn^{+2} \longrightarrow Cu + Zn^{+2}$

Q.100 Keeping in mind the electrode potential, which one of the following reactions is feasible?

A) $Zn^{+2} + Cu \longrightarrow Cu^{+2} + Zn$

B) $Zn + MgSO_4 \longrightarrow ZnSO_4 + Mg$

C) $Fe + CuSO_4 \longrightarrow FeSO_4 + Cu$

D) $Cd + MgSO_4 \longrightarrow CdSO_4 + Mg$

Q.101 What is the correct relation between pH and pK?

A) $pH = pKa + \log\left[\frac{Acid}{Base}\right]$

B) $pH = pKa - \log\left[\frac{Acid}{Base}\right]$

C) $pH = pKa - \log\left[\frac{Base}{Acid}\right]$

D) $pH = pKa + \log\left[\frac{Base}{Acid}\right]$

Q.102 Which one of the following is the correct presentation for K_{sp}?

$$\mathbf{AgCl \longrightarrow Ag^{+} + Cl^{-}}$$

A) $K_{sp} = \frac{[AgCl]}{[Ag^{+1}]\ [Cl^{-1}]}$

B) $K_{sp} = [Ag^{+1}]\ [Cl^{-1}]$

C) $K_{sp} = \frac{[Ag^{+1}]\ [Cl^{-1}]}{[AgCl]}$

D) $K_{sp} = [AgCl]$

ENGLISH

Q.103 In spite of all the torture, the police has failed to _____ any confession from the thief.

A) Convince
B) Elicit
C) Refuse
D) Agree

Q.104 It is the duty of a teacher to _____ moral values in his students besides teaching.

A) Tell
B) Record
C) Inculcate
D) Suggest

Q.105 Many of the houses in Murree have basic _____.

A) Amenities
B) Accuracy
C) Affinity
D) Array

Q.106 Youngsters who indulge in love affairs are usually _____ in worldly manners.

A) Adjoined
B) Addled
C) Adjured
D) Adhesive

⇒ **SPOT THE ERROR: In the following sentences, some segments of each sentence are underlined. Your task is to identify that underlined segment of the sentence, which contains the mistake that needs to be corrected. Fill the Circle corresponding to that letter under the segment in the MCQ Response From.**

Q.107 He <u>picked up</u> (A) one or two magazines and after <u>a hurried</u> (B) glance <u>on</u> (C) the contents carefully <u>replaced</u> (D) them.

Q.108 His guests found <u>it fun</u> (A) <u>to watch</u> (B) him <u>to make</u> (C) tea – mixing <u>careful spoonful</u> (D) from different caddies.

Q.109 You have <u>put your life</u> (A) <u>in his hands</u> (B) <u>many a</u> (C) <u>times</u> (D).

Q.110 Chips, thinking it over <u>a good many time</u> (A), always <u>added to himself</u> (B) that Kathie <u>would have approved</u> (C) and also <u>have been amused</u> (D).

Q.111 But the <u>men</u> (A) <u>ate</u> (B) <u>their</u> (C) supper <u>in</u> (D) good appetites.

Q.112 A common sense <u>of</u> failure is a mistaken ambition <u>of</u> the boys <u>on</u> the part <u>of</u> his parents.
A) B) C) D)

⟹ **In each of the following question, four alternative sentences are given. Choose the CORRECT one and fill the Circle corresponding to that letter in the MCQ Response Form.**

Q.113
A) Tourism is burgeoned over the last fifteen years.
B) Tourism will burgeoned over the last fifteen years.
C) Tourism have burgeoned over the last fifteen years.
D) Tourism has burgeoned over the last fifteen years.

Q.114
A) His remains were interred in the new cemetery.
B) His remains were entered in the new cemetery.
C) His remains was interred in the new cemetery.
D) His remains was entered in the new cemetery.

Q.115
A) They had died in the same day.
B) They had died over the same day.
C) They had died on the same day.
D) They had died of the same day.

Q.116
A) She had turned on the supper steaks when the telephone rang.
B) She had turned over the supper steaks when the telephone rang.
C) She had turned into the supper steaks when the telephone rang.
D) She had turned in the supper steaks when the telephone rang.

Q.117
A) Empty of concord is the soul of wit.
B) Empty of concord is the role of wit.
C) Empty of concord is the sole of wit.
D) Empty of concord is the howl of wit.

Q.118
A) The cheery trees stand over the woodland ride.
B) The cheery trees stand about the woodland ride.
C) The cheery trees stand beside the woodland ride.
D) The cheery trees stand on the woodland ride.

Q.119
A) He made me to write the sum on the slip and to sign my name in a book.
B) He made me write the sum on/at the slip and to sign my name in a book.
C) He made me to write the sum on the slip and sign my name in a book.
D) He made me to write the sum in a slip and to sign my name in a book.

Q.120
A) I am looking forward to secure excellent marks in MCAT.
B) I am looking forward to securing excellent marks in MCAT.
C) I am looking forward securing excellent marks in MCAT.
D) I am looking forward secure excellent marks in MCAT.

Q.121
A) The study of population growth indicates one of the greatest paradox of our time.
B) The study of population growth indicate one of the greatest paradox of our time.
C) The study of population growth indicates one of the greatest paradoxes of our time.
D) The study of population growth indicates one of the greatest paradox in our time.

Q.122
A) In North Africa, he barely escaped assassination at the hand of the governor of the province.
B) In North Africa, he barely escaped from assassination at the hands of the governor of the province.
C) In North Africa, he barely escaped from assassination at the hand of the governor of the province.
D) In North Africa, he barely escaped assassination at the hands of the governor of the province.

⟹ **In each of the following question, four alternative meanings of a word are given. You have to select the NEAREST CORRECT MEANING of the given word and fill the appropriate Circle on the MCQ Response Form.**

Q.123 **EMPATHY**
A) Understanding
B) Animosity
C) Friendship
D) Sympathy

Q.124 FELICITY
A) Boredom
B) Business
C) Happiness
D) Relaxation

Q.125 UNCANNY
A) Exact
B) Opposite
C) Good
D) Strange

Q.126 VIRULENT
A) Progressive
B) Harmful
C) Healthy
D) Positive

Q.127 RAPT
A) Trumpet
B) Bewitched
C) Rapid
D) Rash

Q.128 PEDAGOGY
A) The study of pediatrics
B) The study of teaching methods
C) The study of cultural heritage
D) The study of pectoral muscle

Q.129 INDICTMENT
A) Humiliation
B) Offended
C) Accusation
D) Invisible

Q.130 MITIGATION
A) Alleviation
B) Classification
C) Formidable
D) Poisonous

Q.131 CONCERTED
A) Strenuous
B) Furious
C) Curious
D) Precious

Q.132 ARCANE
A) Mysterious
B) Furious
C) Arid
D) Clear

BIOLOGY

Q.133 In _____ response, β-cells produce plasma cells that synthesize antibodies and release in blood plasma and tissue fluid.
A) Cell-Mediated
B) Hormonal
C) Humoral
D) Phototactic

Q.134 Passive immunity is used against:
A) Malaria
B) Typhoid
C) Dengue
D) Tetanus

Q.135 B-lymphocytes are named due to their relationship with:
A) Blood
B) Bursa of Fabricius
C) Bone Marrow
D) Bile Duct

Q.136 In light independent stage of photosynthesis, the CO_2 combines with _____ to form an unstable 6-carbon intermediate.
A) Ribulose bisphosphate
B) Hexose sugar
C) Glycerate-3-phosphate
D) Glyceraldehyde-9-phosphate

Q.137 In glycolysis, glycerate-1,3-bisphosphate is converted into glycerate-3-phosphate by losing _____ phosphate molecules.
A) 3
B) 2
C) 1
D) 4

Q.138 Malate is oxidized by _____ to oxaloacetate in Krebs's Cycle.
A) ATP
B) NADP
C) NAD
D) FAD

Q.139 In electron transport chain, the electrons from NADH and $FADH_2$ are passed to;
A) Cytochrome a
B) Cytochrome a_3
C) Co-enzyme c
D) Co-enzyme Q

Q.140 Carriers of the respiratory chain are located on:
A) Matrix of mitochondria
B) Outer membrane of mitochondria
C) Inner membrane of mitochondria
D) Cytoplasmic matrix

Q.141 In cystic fibrosis, liposomes-microscopic vesicles are sued which are coated with:
A) Healthy Gene
B) Chromosome
C) Protein
D) Carbohydrate

Q.142 The DNA formed by the reverse transcription is called:
A) rDNA
B) dDNA
C) cDNA
D) DNA

Q.143 Bacterial cells take up recombinant plasmids when they are treated with:
A) $CaCl_2$
B) NaCl
C) KCl
D) NaOH

Q.144 Which one of the following is made up of radioactively labelled nucleotides?
A) Phage DNA
B) Genomic Library
C) Recombinant DNA
D) Gene Probe

Q.145 A technique in transgenic animals in which desired gene is inserted into the eggs of animal is called:
A) Embryonic Stem Cell mediated Transfer
B) Microinjection
C) Retro-virus mediated gene Transfer
D) Virus vectors

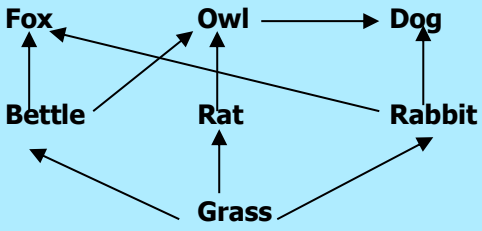
Q.146 Ozone is a layer of atmosphere extending from _____ km above earth and absorbs ultraviolent radiations.
A) 10-50
B) 50-60
C) 5-30
D) 10-80

Q.147 Light rays from the sun are absorbed by CO_2 and re-radiate as _____ radiations.
A) Ultraviolent
B) Indigo
C) Infra-Red
D) Green

Q.148 The gases which are produced by burning of fossils fuels and are responsible for acid rain are:
A) CFCs
B) CO_2 and CO
C) HCl and Oxides of Nitrogen
D) SO_2 and Oxides of Nitrogen

Q.149 During successions, the first organisms that develop on bare rock are:
A) Lichens
B) Shrubs
C) Moss
D) Herbs

Q.150 Trophic level of a herbivore in given food-web is:



A) 1
B) 3
C) 4
D) 2

Q.151 During maternal mitosis, non-disjunction of autosomal chromosome pair results in the formation of an egg having 24 chromosomes in:
A) Klinefelter's Syndrome
B) Down's Syndrome
C) Turner's Syndrome
D) Jacob's Syndrome

Q.152 Typical symptoms like enlarged breasts and small testis in male are attributed to:
A) Down's Syndrome
B) Turner's Syndrome
C) Klinefelter's Syndrome
D) Phenylketonuria

Q.153 Fluid mosaic model of plasma membrane states that protein molecules float in a fluid _____ layer.
A) Galactose
B) Phospholipids
C) Glucose
D) Carbohydrate

Q.154 How many triplets of microtubules are present in centriole?
A) Ten
B) Eight
C) Nine
D) Seven

Q.155 Turner's syndrome is characterized by having:
A) Trisomy 21
B) 44 + XXY
C) Trisomy 18
D) 44 + XO

Q.156 Which one of the following cell structure is involved in the synthesis of lipids?
A) Endoplasmic Reticulum
B) Golgi Complex
C) Centriole
D) Mitochondria

Q.157 Monosaccharides are major components of:
A) DNA, ATP, Ribulose bisphosphate and Cysteine
B) DNA, NAD and Insulin
C) DNA, NADP, ATP and Ribulose bisphosphate
D) DNA, RNA and Myosin

Q.158 Blood group antigen contains:
A) Glycoproteins
B) Phospholipids
C) Glycolipids
D) Sphingolipids

Q.159 Myosin is a _____ type of protein.
A) Intermediate
B) Simple
C) Globular
D) Fibrous

Q.160 Which one of the following is an example of unsaturated fatty acid?
A) Butyric Acid
B) Oleic Acid
C) Palmitic Acid
D) Acetic Acid

Q.161 Number of base pairs in one turn of DNA is:
A) 10
B) 2
C) 34
D) 54

Q.162 The lymph vessel of villi is called:
A) Epithelium
B) Afferent lymph vessel
C) Adrenals
D) Lacteal

Q.163 Right atrium is separated from right ventricle by:
A) Bicuspid Valve
B) Semilunar Valve
C) Tricuspid Valve
D) Interatrial Septum

Q.164 The flaps of tricuspid valves are attached to muscular extensions of right ventricle known as:
A) Smooth Muscles
B) Papillary Muscles
C) Intercostal Muscles
D) Skeletal Muscles

Q.165 One complete heart beat consists of one systole and one diastole and lasts for about:
A) 0.8 sec
B) 0.2 sec
C) 0.4 sec
D) 0.5 sec

Q.166 The heart beat cycle starts when electric impulses are generated from;
A) AV Node
B) SV Node
C) SA Node
D) PQ Node

Q.167 **About 70-85% CO_2 in blood is carried:**
A) As carboxylase myoglobin
B) With proteins in plasma
C) Freely as CO_2
D) As bicarbonate

Q.168 **Those nephrons which are present along the border of the cortex and medulla are called:**
A) Juxtamedullary nephrons
B) Cortical nephrons
C) Internal nephrons
D) Outer nephrons

Q.169 **When water is in short supply, increased water retention occurs through the:**
A) Cortical nephrons
B) Proximal Convoluted Tubule
C) Juxtamedullary nephrons
D) The tissue of cortex

Q.170 **In nephrons, counter-current multiplier occurs at:**
A) Loop of Henle
B) Collecting Duct
C) Bowman's Capsule
D) Glomerulus

Q.171 **Ascending loop of Henle does not allow outflow of:**
A) Na^+ ions
B) K^+ ions
C) Cl^- ions
D) Water

Q.172 **A larger quantity of dilute urine is produced in diabetes insipidus. This disease is due to the deficiency of:**
A) Antidiuretic Hormone
B) Aldosterone
C) Thyroxine
D) Cortisol

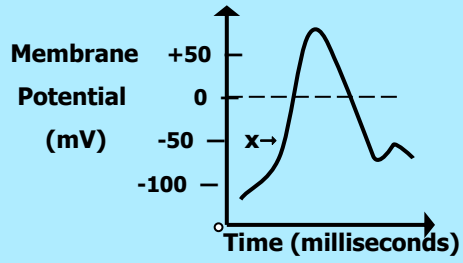
Q.173 **Water and sodium ions are reabsorbed in:**
A) Urinary Bladder and Urethra
B) Ureter
C) Adrenal Cortex
D) Proximal Convoluted Tubule & Collecting Duct

Q.174 **Which disease is responsible for dementia (memory loss)?**
A) Parkinson's Disease
B) Alzheimer's Disease
C) Epilepsy
D) Grave's Disease

Q.175 **Neurotransmitter secreted at synapse outside the central nervous system is:**
A) Dopamine
B) Polypeptide
C) Androgen
D) Acetylcholine

Q.176 **Conduction of action potentials from one mode of Ranvier to another in myelinated neurons is through:**
A) Hyperpolarization
B) Resting Membrane Potential
C) Depolarization
D) Saltatory Conduction

Q.177 **In the following diagram of action potential in a neuron, 'x' depicts:**



A) Depolarization
B) Polarization
C) Repolarization
D) Hyperpolarization

Q.178 **In human testis, which structure is responsible for carrying sperm from inside the testis?**
A) Seminiferous tubules
B) Urinogenital duct
C) Seminal Vesicles
D) Vasa efferentia

Q.179 **In which part of female reproductive system fertilization takes place?**
A) Proximal part of oviduct
B) Uterus
C) Placenta
D) Vagina

Q.180 In females, FSH stimulates the ovary to produce:
A) Progesterone
B) Lactin
C) Oestrogen
D) Oxytocin

Q.181 Syphilis, sexually transmitted disease is caused by:
A) HIV
B) Treponema pallidum
C) Neisseria gonorhoeae
D) Type '2' virus

Q.182 In which phase of human female menstrual cycle, endometrium prepares for the implantation of embryo?
A) Proliferative phase
B) Menstrual phase
C) Secretory phase
D) Ovulation phase

Q.183 The total number of cervical and thoracic vertebrate in human vertebral column is:
A) 7
B) 19
C) 14
D) 33

Q.184 A sarcomere is the region of a myofibril between two successive:
A) M-lines
B) Z-lines
C) I-bands
D) T-tubules

Q.185 The sarcolemma of muscle fibre folds inwards and forms a system of tubes which runs through the sarcoplasm called:
A) Myofilaments
B) Sarcoplasmic reticulum
C) Z-lines
D) Transverse tubules

Q.186 According to sliding filament theory, when muscle fibers are stimulated by nervous system, which of the following changes occurs?
A) I-bands shorten
B) H-zone becomes more visible
C) Z-lines move further apart
D) A-bands shorten

Q.187 If lactic acid build up in thigh muscles, it causes muscle tiredness and pain. This condition is called:
A) Muscle Fatigue
B) Tetany
C) Cramps
D) Oxygen debt in muscles

Q.188 Thyroxine deficiency in adults' results in a condition called:
A) Cretinism
B) Hypothyroidism
C) Thyrotoximia
D) Myxoedema

Q.189 α-cells of pancreas secrete a hormone known as:
A) Glucagon
B) Insulin
C) Gastrin
D) Rennin

Q.190 X-linked recessive trait is:
A) Hypophosphatemia
B) Vitamin-D resistant rickets
C) Haemophilia
D) Diabetes Mellitus

Q.191 Human skin colour is a good example of?
A) Sex-linked inheritance
B) Polygenic inheritance
C) x-linked inheritance
D) y-linked inheritance

Q.192 From evolutionary point of view, which respiratory protein is common in many organisms?
A) Cytochrome a
B) Cytochrome b
C) Cytochrome c
D) Cytochrome d

Q.193 Number of pairs of autosomes in humans in:
A) 23
B) 24
C) 21
D) 22

Q.194 ABO blood system is an example of:
A) Polygenes
B) Multiple genes
C) Multiple Alleles
D) Multiple Mutation

Q.195 Which molecular structure of enzyme is essential for activity of enzyme?
A) Primary Structure
B) Quaternary Structure
C) Secondary Structure
D) Tertiary Structure

Q.196 Which one of the following edible products is widely pasteurized?
A) Soft drinks
B) Mango squash
C) Milk
D) Orange Juice

Q.197 Ribosomes are tiny organisms, which are involved in the synthesis of:
A) Protein
B) RNA
C) Nucleus
D) Nuclosome

Q.198 Which organelle is bounded by two membranes?
A) Ribosome
B) Mitochondria
C) Lysosome
D) Nucleolus

Q.199 At the beginning of nuclear division, the number of microtubule triplets in two pairs of centrioles that migrate to opposite poles are:
A) 9
B) 18
C) 108
D) 36

Q.200 The disease in which an individual has extra sex chromosome (44 + XXY) is known as:
A) Down's syndrome
B) Tuner's syndrome
C) Klinefelter's syndrome
D) Jacob's syndrome

Q.201 Over-secretion of cortical hormone causes a disease called;
A) Cushing's Disease
B) Diabetes Mellitus
C) Hypoglycemia
D) Addison's Disease

Q.202 Ejection of milk from mammary glands is under the control of which one of the following hormones?
A) Androgen
B) Oxytocin
C) Progesterone
D) Estrogen

Q.203 Granulocytes are:
A) Monocytes, Eosinophils, Basophils
B) Basophils, Macrophages, Neurophils
C) Neurophils, Eosinophils, Basophils
D) Monocytes, Macrophages, Basophils

Q.204 Response of body against the transplanted organ is:
A) Homeostatic Response
B) Behavioral Response
C) Primary Response
D) Cell-mediated Response

Q.205 Some enzymes require helper which is non-protein part for its efficient functioning that is called:
A) Accelerator
B) Cofactor
C) Prosthetic group
D) Apoenzyme

Q.206 Pepsin, protein digesting enzymes, sets best pH:
A) 3.00
B) 4.50
C) 2.00
D) 6.00

Q.207 Which one of the following is an example of competitive inhibitor?
A) Glucose
B) Fumerate
C) Succinic Acid
D) Melonate

Q.208 HIV is classified as:
A) Bacteriophage
B) Oncovirus
C) Retrovirus
D) Icosahedral virus

Q.209 Cyanobacteria are:
A) Photoautotrophic bacteria
B) Chemosynthetic bacteria
C) Saprotrophic bacteria
D) Parasitic bacteria

Q.210 During favourable conditions, certain bacteria produces:
A) Ribosomes
B) Plasmids
C) Mitochondria
D) Spores

Q.211 In rhizopus, zygote forms temporary, dormant, thick-walled resistant structure called:
A) Zygospore
B) Spore
C) Sporangia
D) Hydra

Q.212 _____ is a triploblastic organism.
A) Jelly Fish
B) Sea Anemone
C) Tapeworm
D) Corals

Q.213 In arthropods, the body cavity is in the form of:
A) Coelem
B) Haemocoel
C) Psedocoelem
D) Enteron

Q.214 _____ is a good example of polymorphism.
A) Hydra
B) Starfish
C) Obelia
D) Equplectella

Q.215 Name common gut roundworm parasite of human and pigs.
A) Aascaris lumberocoides
B) Lumbericus terresaris
C) Pheretima posthuma
D) Hirudo Medicinalis

Q.216 _____ is also called liver fluke.
A) Dugesia
B) Taenia
C) Fasciola
D) Coral

Q.217 Oxyntic cells in stomach produces:
A) Pepsin
B) Pepsinogen
C) Gastrin
D) HCl

Q.218 The hormone which inhibits the secretion of pancreatic juice is:
A) Secretin
B) Gastrin
C) Thyroxine
D) Parathormone

Q.219 Trypsinogen is activated to trypsin by:
A) HCl
B) Enterokinase
C) Mucus
D) Gastrin

Q.220 The emulsification of fats is the role of:
A) Saliva
B) Pancreatic juice
C) Gastrin
D) Bile

University of Health Sciences, Lahore

Entrance Test – 2015

For admission to Medical / Dental Institutions of the Punjab

ANSWER KEY

The answer key to the questions of Entrance Test 2015 is being released. Candidates can calculate their scores with the help of carbon copy of their response forms. **Each correct answer carries 05 marks whereas one mark will be deducted from the total score for each wrong answer. Unattempted question carries zero marks.** Complaints/ queries will be dealt only after the declaration of official result of the Entrance Test by the University. No request in this regard will be entertained before that.

Q.No.	Ans
ID	B
1	A
2	B
3	D
4	D
5	C
6	A
7	A
8	D
9	C
10	B
11	C
12	A
13	B
14	D
15	A
16	C
17	B
18	C
19	D
20	C
21	A
22	D
23	D
24	A
25	C
26	B
27	C
28	D
29	A
30	A
31	C
32	D
33	B
34	D
35	C
36	A
37	C
38	B
39	B
40	D
41	A
42	B
43	C
44	A
45	A

Q.No.	Ans
46	D
47	C
48	A
49	C
50	B
51	B
52	A
53	D
54	C
55	D
56	D
57	A
58	B
59	B
60	D
61	D
62	B
63	D
64	B
65	C
66	D
67	A
68	B
69	D
70	C
71	B
72	A
73	C
74	D
75	B
76	A
77	A
78	B
79	D
80	D
81	A
82	C
83	D
84	A
85	C
86	D
87	B
88	C
89	A
90	C
91	A

Q.No.	Ans
92	B
93	D
94	C
95	C
96	D
97	A
98	B
99	C
100	C
101	B
102	B
103	B
104	C
105	A
106	B
107	C
108	C
109	C
110	A
111	D
112	D
113	D
114	A
115	C
116	B
117	A
118	B
119	C
120	B
121	C
122	B
123	D
124	C
125	D
126	B
127	B
128	B
129	C
130	A
131	A
132	A
133	C
134	D
135	B
136	A
137	C

Q.No.	Ans
138	C
139	D
140	C
141	A
142	C
143	A
144	D
145	B
146	A
147	C
148	D
149	A
150	D
151	B
152	C
153	B
154	C
155	D
156	B
157	C
158	A
159	D
160	B
161	A
162	D
163	C
164	B
165	A
166	C
167	D
168	A
169	C
170	A
171	D
172	A
173	D
174	B
175	D
176	D
177	A
178	D
179	A
180	C
181	B
182	C
183	B

Q.No.	Ans
184	B
185	D
186	A
187	A
188	D
189	A
190	C
191	B
192	C
193	D
194	C
195	D
196	C
197	A
198	B
199	D
200	C
201	A
202	B
203	C
204	D
205	B
206	C
207	D
208	C
209	A
210	D
211	A
212	C
213	B
214	C
215	A
216	C
217	D
218	A
219	B
220	D