

MCAT 2013:

Physics:

1. Name the quantity which can be measured by using base unit "kgm²s⁻³":

- a. pressure
- b. power
- c. work
- d. weight

2. The wavelength ' λ ' of a wave depends on the speed ' v ' of the wave and its frequency ' f '. Decide which of the following is correct?

- a. $F = v \lambda$
- b. $f = \lambda / v$
- c. $f = v / \lambda$
- d. $f = v \lambda^{-2}$

3. Ratio of moment of inertia of two objects 'A' and 'B' is 2:3. Which of the following is the ratio of torques 'A' and 'B' respectively if both are being rotated with constant angular acceleration?

- a. 2:3
- b. 3:2
- c. 4:3
- d. 3:4

4. Due to some mechanical fault, a lift falls freely from the top of a multistory building. Which of the followings is the apparent weight of a man inside the lift, if mass of man is 80kg while value of ' g ' is 10ms⁻².

- a. 900N
- b. 800N
- c. 700n
- d. zero

5. stoke's law is given by:

- a. $F = 6\pi\eta r^2 v$
- b. $F = 6\pi\eta v$
- c. $F = 6\pi\eta v^3$
- d. $F = 6\pi^2 \eta r^3 v$

6. The product of cross-sectional area of the pipe and the fluid speed at any point along the pipe

- a. is zero
- b. exponentially increase
- c. exponentially decrease
- d. remains constant

7. A small leak is developed in a large water storage tank. If the height of water above leakage is 10m, then find the speed of efflux through the leak

- a. 10ms^{-1}
- b. 9.8ms^{-1}
- c. 14ms^{-1}
- d. 20ms^{-1}

8. The minimum distance from the eye at which an object can be seen clearly without strain is called:

- a. focal point
- b. yield point
- c. near point
- d. far point

9. In the diffraction of light around an obstacle, the angle of diffraction is increased when:

- a. the wavelength of incident light wave is increased
- b. the wavelength of incident light wave is decreased
- c. the amplitude of the incident light wave is increased
- d. the amplitude of the incident light wave is decreased

10. An object 15cm from a lens produces a real image 30cm from the lens. What is the focal length of the lens?

- a. 10cm
- b. +15cm
- c. +20cm
- d. +25cm

11. What is the formula for critical angle in case of light through two mediums having refractive indexes n_1 and n_2 such that $n_1 > n_2$?

- a. $\sin^{-1}(n_1/n_2)$
- b. $\sin^{-1}(n_2/n_1)$
- c. $\cos^{-1}(n_1/n_2)$
- d. $\cos^{-1}(n_2/n_1)$

12. In a simple harmonic motion with a radius ' x_0 ', the velocity of the particle at any point is:

- a. $v = \omega(x_0^2 - x^2)$
- b. $v = \omega\sqrt{(x_0 - x)}$
- c. $v = \omega\sqrt{(x - x_0)}$
- d. $v = \omega\sqrt{x_0^2 - x^2}$

13. For a vibrating mass-spring system, the expression of kinetic energy at any displacement ' x ' is given by:

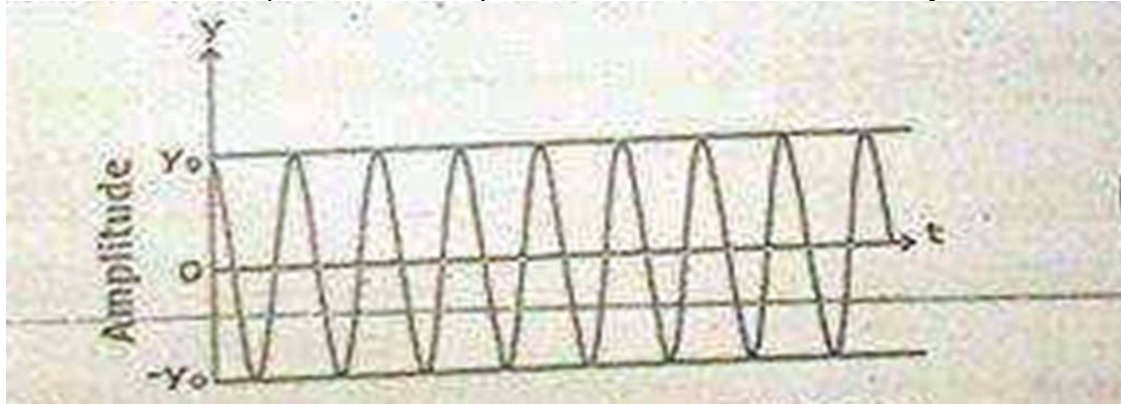
- a. $\frac{1}{2}kx_0^2(1 - x^2/x_0^2)$
- b.
- c. $\frac{1}{2}kx_0^2$

d.

14. speed of sound through a gas is measured as 340ms^{-1} at pressure P_1 and temperature T_1 . What will be the speed of sound if pressure of gas is doubled but temperature is kept constant?

- a. 340ms^{-1}
- b. 170ms^{-1}
- c. 680ms^{-1}
- d. 342ms^{-1}

15. Variation of amplitude with respect to time for an oscillation object is shown in figure.



- a. damped
- b. undamped
- c. critical
- d. heavily damped

16. The stress-strain graph, deduced the following limits successively:

- a. proportional limit, yield limit, elastic limit
- b. yield limit, elastic limit, proportional limit
- c. proportional limit, elastic limit, yield limit
- d. elastic limit, proportional limit, yield limit

17. A 4.0m long wire is subjected to stretching force and its length increases by 40cm . The percent elongation which the wire undergoes is:

- a. 0.10%
- b. 10%
- c. 40%
- d. 20%

18. What is the value of universal gas constant?

- a. $8.314\text{Jmol}^{-1}\text{K}^{-1}$
- b. $8314\text{Jmol}^{-1}\text{K}^{-1}$
- c. $83.14\text{Jmol}^{-1}\text{K}^{-1}$
- d. $831.4\text{Jmol}^{-1}\text{K}^{-1}$

19. A gas sample contains three molecules each having speed 1ms^{-1} , 2ms^{-1} , 3ms^{-1} . What

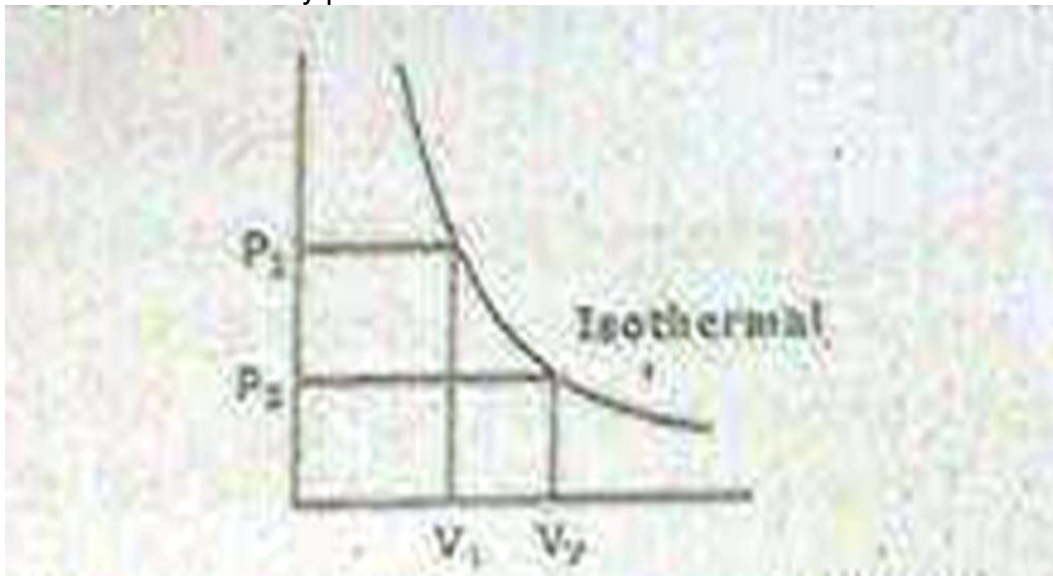
is the mean square speed?

- a. 6 ms^{-1}
- b. 2 ms^{-1}
- c. $14/3 \text{ ms}^{-1}$
- d. $\sqrt{14/3} \text{ ms}^{-1}$

20. What is the factor upon which change in internal energy of an ideal gas depends?

- a. change in volume
- b. change in temperature
- c. change in volume and temperature
- d. path followed to change internal energy

21. What will be the mathematical form of first law of thermodynamics for a system whose variation of volume by pressure is shown?



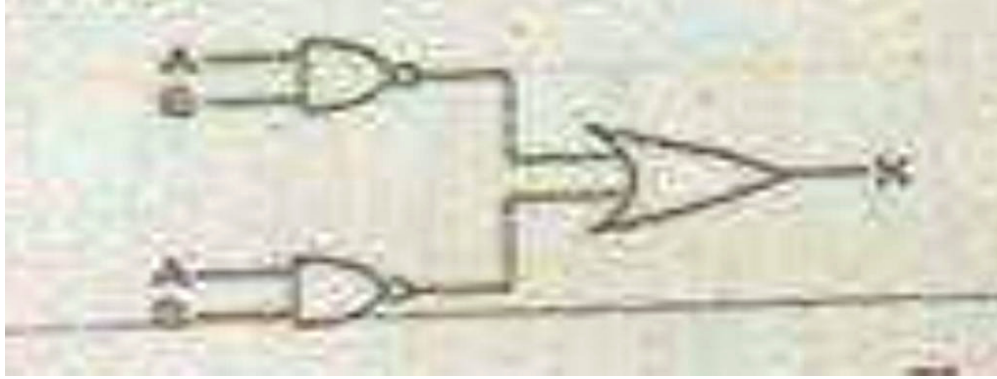
- a. $Q=W$
- b. $Q=U$
- c. $U=W$
- d. $Q=U/W$

22. For a heat engine 'A' ratio of Q_1 to Q_2 is $2/3$ while that of heat engine 'B', ratio of Q_2 to Q_1 is $1/3$. What

Is the value $\eta_A : \eta_B$?

- a. 1:3
- b. 2:3
- c. 1:2
- d. 2:1

23. What is the output Boolean expression of logic diagram shown in figure below:

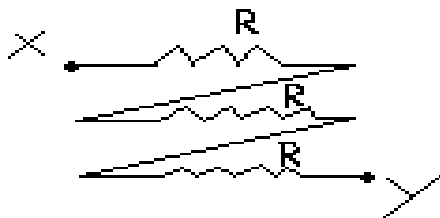


- a. $\overline{A}B + \overline{A}\overline{B}$
- b. $\overline{(A+B)} \cdot \overline{(A+B)}$
- c. $\overline{(A+B)} \cdot \overline{(A+B)}$
- d. $\overline{A} \cdot \overline{B} + \overline{A} \cdot B$

24. Which of the following is the proper way to study the sinusoidal wave form of voltage?

- a. Voltage is connected to 'Y' input and time base is switched on.
- b. Voltage is connected to 'X' input and time base is switched off.
- c. Voltage is connected to 'Y' input and time base is switched off.
- d. Voltage is connected to 'X' input and time base is switched on.

25. Three resistances each having value 'R' are connected as shown in figure. what is the equivalent resistance between 'X' and 'Y'?



- a. R
- b. 3R
- c. R/3
- d. R³

26. 12 volt battery is applied across 6Ω resistance to have a steady flow of current. what must be the required potential difference across the same resistance to have a steady current of one ampere?

- a. 12V
- b. 6V
- c. 3V

d.1V

27.What is the charge stored on a 5 μ F capacitor charged to the potential difference of 12V?

- a.2.4C
- b.2.4 μ C
- c.60C
- d.60 μ C

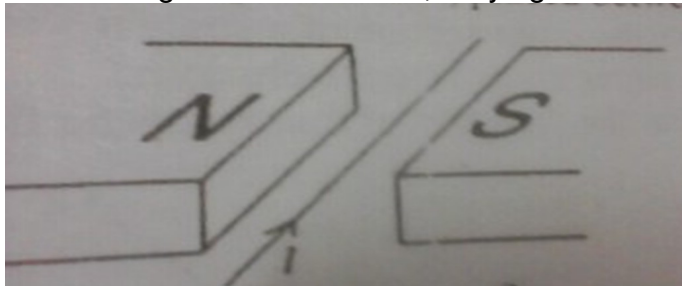
28.A solenoid is cut into two halves.Magnetic induction due to same current in each half will be:

- a.same as original
- b.half of the original
- c.double of the original
- d.four times of the original

29.A long straight current carrying conductor has current directed from bottom to top when held vertically.what will be the direction of magnetic field lines when observed from below the conductor?

- a.clockwise
- b.anticlockwise
- c.vertically upward
- d.vertically downward

30.The diagram shows a wire,carrying a current 'I',placed between the poles of magnet:



In which direction does the force on the wire act?

- a.downwards
- b.upwards
- c.towards the 'N' pole of the magnet.
- d.towards the 'S' pole of the magnet

31.X-rays from a given X-ray tube operating under specified conditions have a minimum wavelength.the value of this minimum wavelength could be reduced by:

- a.cooling the target
- b.reducing the temperature of the filament.

- c.increasing the potential difference between the cathode and the target.
- d.reducing the pressure in the tube.

32.Helium-neon lasers are used for the:

- a.precise measurement of range finding.
- b.optical fibre communication systems.
- c.surveying for construction of tunnels.
- d.welding detached bone of body.

33.What is the type of characteristic x-ray photon whose energy is given by relation ' $hf = E_m - E_k$ '?

- a.K-alpha
- b.K-beta
- c.M-alpha
- d.M-beta

34.Kinetic energy of electrons by applying potential difference V_1 across the x-ray tube is KE_1 while V_2 potential difference produce kinetic energy equal to KE_2 .what will be the value of $KE_1:KE_2$,if ratio of potential difference $V_1:V_2=2:3$?

- a.2:3
- b.3:2
- c.4:9
- d.9:4

35.What will be the relation for the speed of electron accelerated towards the target in x-ray tube by applying potential difference ' V ';take mass of electron ' m ' and charge on electron ' e '?

- a. $v = \sqrt{2me/V}$
- b. $v = \sqrt{2V/me}$
- c. $v = \sqrt{2meV}$
- d. $v = \sqrt{2Ve/m}$

36.For what CAT stands in x-ray technology?

- a.Capacitor AQmplifier Transistor
- b.Cathode Anode Technique
- c.Current Amplification Transistor
- d.Computerized Axial Tomography

37.During the production of LASER,when the excited state E_2 contains more number of atoms than the ground state E_1 ,the state is known as:

- a.ground state
- b.excited state
- c.metastable state
- d.population inversion

38.Emission of radiation from radioactive substance is:

- a.independent of both temperature and pressure
- b.dependent on both temperature and pressure
- c.Independent of temperature but dependent on pressure
- d.independent of pressure but dependent on temperature

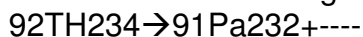
39.among three type of radioactive radiation,which have strongest penetration power?

- a.Alpha
- b.Beta
- c.Gamma
- d.a,B n y have same penetration power

40.Emission off alpha decay from a radioactive substance causes:

- a.decrease in 'A' by 4 and decrease in 'Z' by 2
- b.decrease in 'Z' by 4 and decrease in 'A' by 2
- c.decrease in 'A' by 1 and 'Z' remains same.
- d.decrease in 'Z' by 1 and 'A' remains same

41.Which one of the following emissions take place in a nuclear reaction?



- a.alpha
- b.beta
- c.gamma
- d.photons

42.10 joule of energy is absorbed by 10 gram mass from a radioactive source.what is the absorbed dose?

- a.1 gray
- b.10 gray
- c.100 gray
- d.1000 gray

43.Isotopes are those nuclei of an element that have:

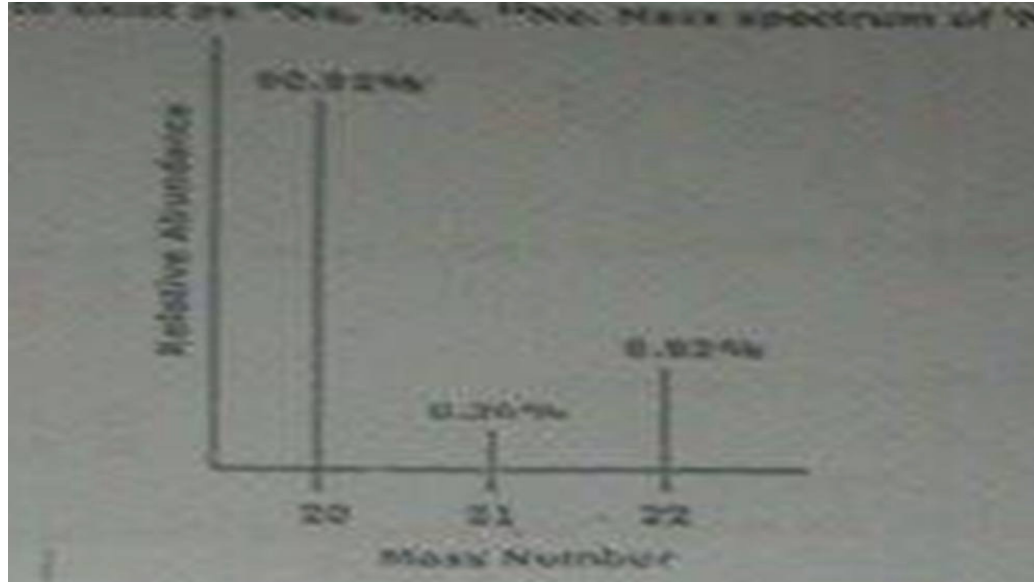
- a.same atomic number but different mass number.
- b.same mass number but different atomic number
- c.same mass number as well as atomic number
- d.different mass number as well as different atomic number

44.In cloud chamber,the path of B-particles is:

- a.straight,thick,short
- b.thin,wavy,longer
- c.thin,wavy,shorter
- d,thin,straight,short

Chemistry:

45. A sample of Neon is found to exist as ^{20}Ne , ^{21}Ne , ^{22}Ne . mass spectrum of 'Ne' is as follows:



90.92% 0.257% 8.82%

What is the relative atomic mass(A,value) of Neon?

- a. 20.28
- b. 20.10
- c. 20.28
- d. 20.22

46. Hydrogen burns in chlorine to produce hydrogen chloride. the ratio of masses of reactants in chemical reaction $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$ is:

- a. 1:35.5
- b. 2:35.5
- c. 1:71
- d. 2:70

47. the coordination number of Na^+ in NaCl crystal is:

- a. 2
- b. 4
- c. 6
- d. 8

48. There are four gases H_2 , He, N_2 and CO_2 at 0°C . which gas shows greater non-ideal behavior?

- a. He
- b. H_2
- c. N_2
- d. CO_2

49. Correct order of energy in the given subshells is:

- a. $5s > 3d > 3p > 4s$

- b. $3p > 3d > 5s > 4s$
- c. $3p > 3d > 4s > 5s$
- d. $5s > 3d > 4s > 3p$

50. number of electrons in the outermost shell of chloride ion (Cl^-) is:

- a. 3
- b. 1
- c. 0
- d. 17

52. According to valence shell electron pair repulsion theory, the repulsive forces between the electron pair of central atom of molecule are in the order:

- a. Lone-pair-lone-pair > lone-pair-bond pair > bond pair-bond pair
- b. lone pair-bond pair > lone pair-lone pair > bond pair-bond pair
- c. bond pair-bond pair > lone pair-lone pair > lone pair-bond pair
- d. lone pair-bond pair > bond pair-bond pair > lone pair-lone pair

52. in crystal lattice of ice, each O-atom of water molecule is attached to:

- a. one H-atom
- b. two H-atoms
- c. three h-atoms
- d. four H-atoms

53. heat of formation (ΔH°) for CO_2 is:

- a. -394 KJ/mole
- b. +394 KJ/mole
- c. -294 KJ/mole
- d. -390 KJ/mole

54. reactions have high energy than products in:

- a. exothermic reactions
- b. endothermic reactions
- c. photochemical reactions
- d. non-spontaneous reactions

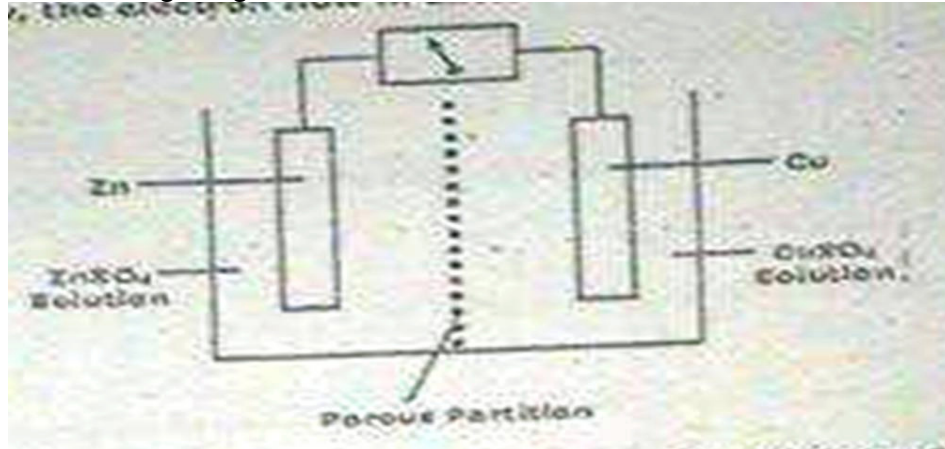
55. If 18.0 g of glucose is dissolved in 1 kg of water, boiling point of this solution should be:

- a. 100.52°C
- b. 100.00°C
- c. 100.052°C
- d. less than 100°C

56. Molal freezing point constant of water is:

- a. 1.86
- b. 2.86
- c. 11.86
- d. 0.52

57. In the figure given below, the electron flow in external circuit is from:



- a. copper to zinc electrode
- b. right to left
- c. porous partition to zinc electrode
- d. zinc to copper electrode

58. Which one of the following is a redox reaction?

- a. $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{NaNO}_3 + \text{AgCl}$
- b. $2\text{Na} + \text{Cl}_2 \rightarrow 2\text{NaCl}$
- c. $2\text{Cl}^- \rightarrow \text{Cl}_2 + 2\text{e}^-$
- d. $\text{Na}^+ + \text{e}^- \rightarrow \text{Na}$

59. The chemical substance, when dissolved in water, gives "H" is called:

- a. acid
- b. base
- c. Amphoteric
- d. neutral

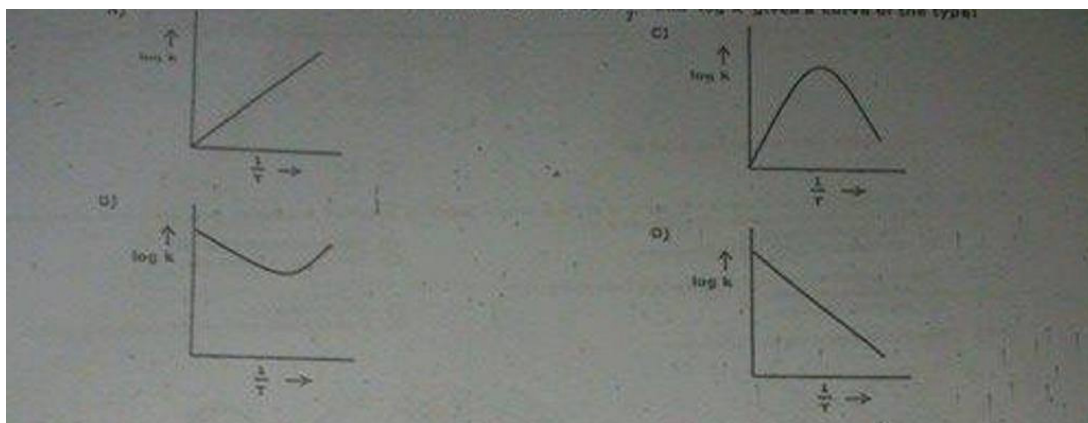
60. The 'pH' of our blood is:

- a. 7.35-7.4
- b. 6.7-8
- c. 7.9
- d. 7.5

61. In zero order reaction, the rate is independent of:

- a. concentration of the product
- b. concentration of the reactant
- c. temperature of the reaction
- d. surface area of the product

62. By considering Arrhenius equation, the graph between '1/T' and 'log K' given a curve of the type:



63. what is the trend of melting and boiling point of the elements of short periods as we move from left to right in a periodic table?

- melting and boiling points first decrease then increase
- melting and boiling points increase gradually
- melting and boiling points first increase then decreased
- melting and boiling points decrease gradually

64. Along a period, atomic radius decreases. this gradual decrease in radius is due to:

- increase in number of electrons in valence shells.
- increase in number of protons in the nucleus
- decrease in number of shells
- increase in number of shells

65. Alkaline earth metal oxides react with water to give hydroxides. the solubility of alkaline earth metal oxides in water increases as we move from top to bottom in a group. which of the following alkaline earth metal oxides is least soluble in water?

- MgO
- CaO
- BaO
- SrO

66. the electronic structure of carbon monoxide is represented as:



67. Which one pair has the same oxidation state of 'Fe'?

- FeSO_4 and FeCl_3
- FeCl_2 and FeCl_3
- FeSO_4 and FeCl_3
- $\text{Fe}_2(\text{SO}_4)_3$ and FeSO_4

68. Oxidation state of 'Fe' in $K_2[Fe(CN)_6]$ is:

- a. -3
- b. -5
- c. +3
- d. +2

69. The nature of an aqueous solution of ammonia (NH_3) is:

- a. amphoteric
- b. neutral
- c. acidic
- d. basic

70. Unpolluted rain water has a pH of:

- a. 4.9
- b. 5.6
- c. 5.3
- d. 7.0

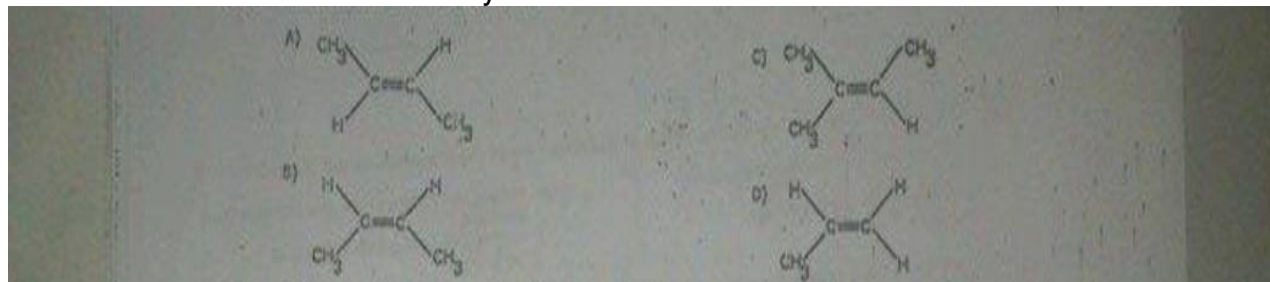
71. In comparison with oxygen gas, a strong triple bond is present between two nitrogen atoms in a molecule and therefore nitrogen gas is:

- a. highly reactive gas
- b. completely inert like noble gases
- c. moderately reactive gas
- d. very less reactive gas

72. The catalyst used in the Haber's process is:

- a. Magnesium oxide
- b. Aluminium oxide
- c. silicon oxide
- d. iron crystals with metal oxide promoters

73. The cis-isomerism is shown by:



74. Select the nucleophile from the following examples:

- a. NO_2
- b. NH_3
- c. NO_2^+
- d. NH_4^+

75. The introduction of an alkyl group in benzene takes place in the presence of AlCl_3 and:



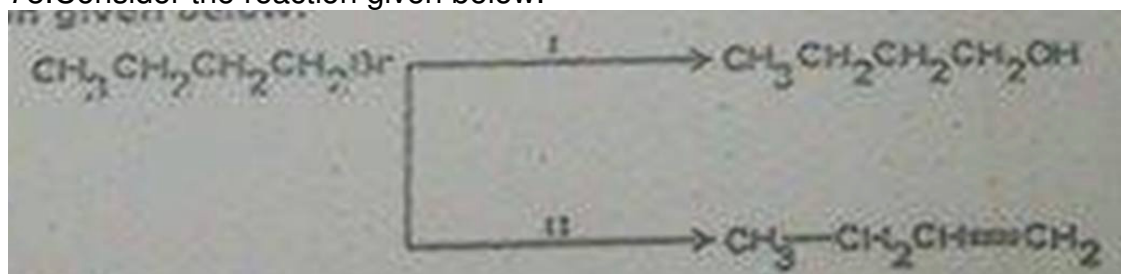
76. What is the product formed when propene reacts with HBr ?

- $\text{CH}_3-\text{CH}_2-\text{CH}_2\text{Br}$
- $\text{CH}_3-\text{CH}(\text{Br})-\text{CH}_3$
- $(\text{Br})\text{CH}_2-\text{CH}(\text{Br})-\text{CH}_3$
- $\text{Br}(\text{CH}_2)-\text{CH}=\text{CHBr}$

77. The order of reactivity of alkyl halides towards nucleophile is:

- $\text{RI} > \text{RBr} > \text{RF} > \text{RCl}$
- $\text{RI} > \text{RBr} > \text{RCl} > \text{RF}$
- $\text{RF} > \text{RCl} > \text{RBr} > \text{RI}$

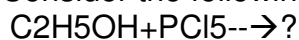
78. Consider the reaction given below:



Which statement is true?

- Reagent for I is KOH in alcohol
- Reagent for II is KOH in aqueous medium
- Reaction I is debromination
- Reaction II is elimination

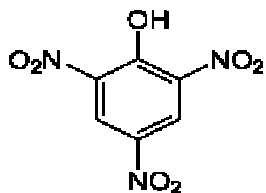
79. Consider the following reaction:



What product(s) may be formed?

- $\text{C}_2\text{H}_5\text{Cl}$ only.
- $\text{C}_2\text{H}_5\text{Cl}$ and HCl .
- $\text{C}_2\text{H}_5\text{Cl}$, POCl_3 and HCl
- $\text{C}_2\text{H}_5\text{Cl}$ and POCl_3

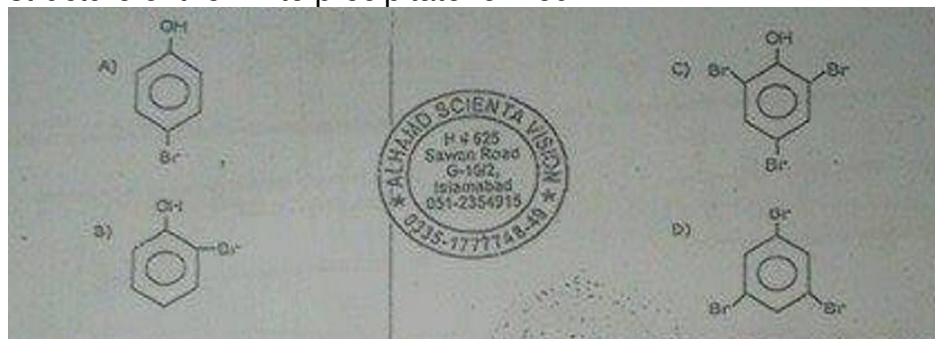
80.



is named as:

- a. Picric acid
- b. Nitro phenol
- c. benzoic acid
- d. Malonic acid

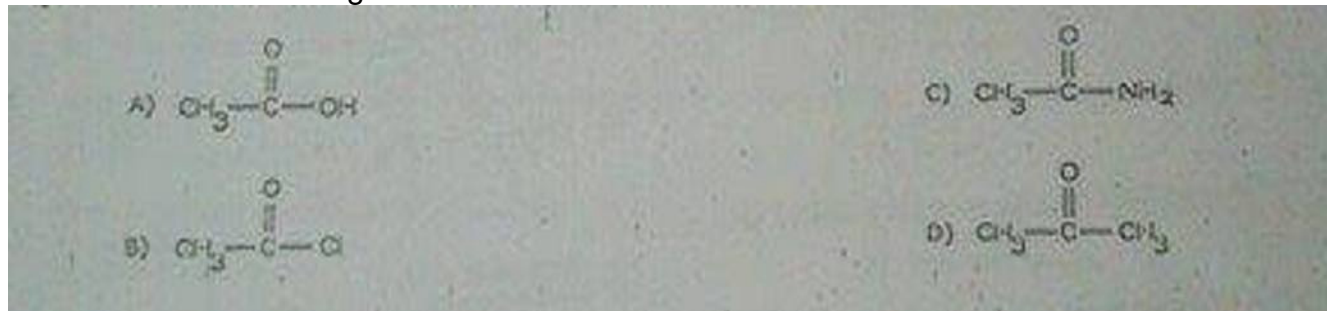
81. Aqueous phenol decolorizes bromine water to form a white precipitate. What is the structure of the white precipitate formed?



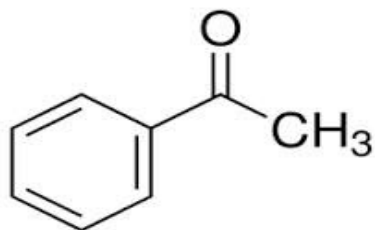
82. The relative strength of carboxylic acid, water, ethanol and phenol has the following order of increasing acid strength:

- a. Carboxylic acid > phenol > ethanol > water
- b. Carboxylic acid > phenol > water > ethanol
- c. Phenol > carboxylic acid > ethanol > water
- d. Water > ethanol > phenol > carboxylic acid

83. Which of the following is the structure of a ketone?



84. What is the structure of an alcohol which on oxidation with acidified $\text{Na}_2\text{Cr}_2\text{O}_7$ gives





85. Which group gives a yellow precipitate of triiodomethane when warmed with alkaline aqueous iodine?

- a. Methyl ketone group $\text{H}_3\text{C}-\overset{\text{O}}{\parallel}{\text{C}}-$
 b. ethyl ketone group $\text{C}_2\text{H}_5-\text{C}(\text{O})-$
 c. a primary alcohol group as in propanol, $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{OH}$
 d. an amide group $\text{CH}_3-\text{C}(\text{O})-\text{NH}_2$

86. $\text{CH}_3-\text{C}(\text{O})-\text{OH} + \text{NH}_3 \xrightarrow{\text{heat}}$?

The final products formed are:

- a. $\text{CH}_3-\text{C}(\text{O})-\text{NH}_2 + \text{CO}_2$
 b. $\text{CH}_3-\text{C}(\text{O})-\text{NH}_2 + \text{H}_2\text{O}$
 c. $\text{CH}_3-\text{C}(\text{O})-\text{NH}_2 + \text{H}_2$
 d. $\text{CH}_3-\text{C}(\text{O})-\text{NH}_2 + \text{HCl}$

87. Methyl cyanides, on boiling with mineral acids or alkalis yield:

- a. acetic acid
 b. formic acid
 c. propanoic acid
 d. butanoic acid

88. The formation of ester from acetic acid in presence of acid and ethanol is a:

- a. nucleophilic substitution reaction
 b. nucleophilic substitution reaction
 c. electrophilic substitution reaction
 d. electrophilic addition reaction

89. What is the name of amino acid, $\text{NH}_2-\text{CH}(\text{R})-\text{COOH}$ where 'R' is CH_2 group?

- a. glycine
 b. alanine
 c. lysine
 d. aspartic acid

90. α -amino acids are compounds having carboxylic acid as well as amino functional groups attached to:

- a.same carbon atom
- b.alternate carbon atoms
- c.neighbouring carbon atoms
- d.any H-atom in the molecule

91.The formation of 'zwitterion' is represented by:

- a.+NH₂-CH(R)-CO₂-
- b.+NH₄-CH(R)-CO₂-
- c.+NH₃-CH(R)-CO-
- d.+NH₂-CH(R)-COO-

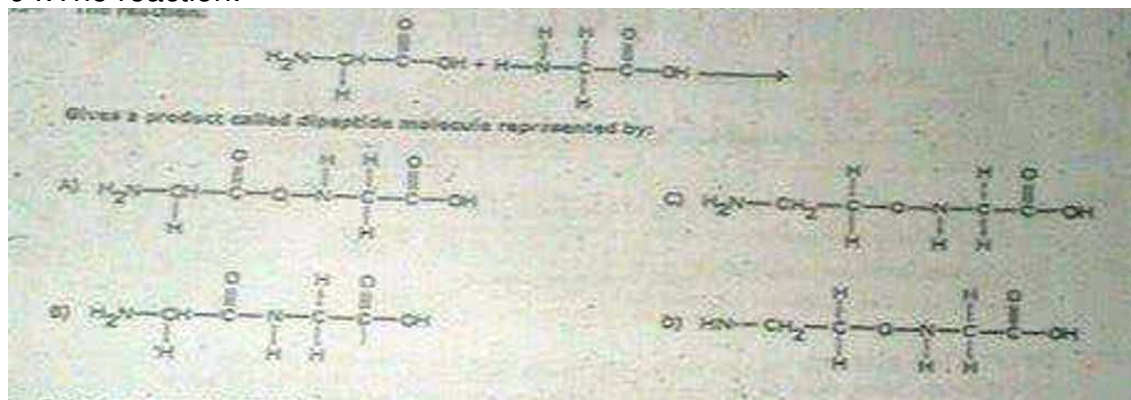
92.Two or more amino acids condensed to form protein by a peptide linkage which is present between two atoms:

- a.C and C
- b.O and C
- c.C and N
- d.C and H

93.The amino acids which largely exist in dipolar ionic form are:

- a.acidic amino acids
- b.basic amino acids
- c.alpha amino acids
- d.beta amino acids

94.The reaction:



95.Polyvinyl acetate is colourless and non-toxic resin used as an adhesive and as a binder for making:

- a.toys
- b.gramophone recorders
- c.emulsion paints
- d.compact discs

96.Both ribose and deoxiribose are monosachrides containing_____carbon atoms.

- a.four

- b. five
- c. six
- d. seven

97. The increased quantities of cholesterol in blood make plaque like deposits in the arteries causing:

- a. cholera
- b. Down's syndrome
- c. heart attack
- d. phenylketonuria

98. Polyvinyl chloride is an example of:

- a. condensation polymer
- b. addition polymer
- c. biopolymer
- d. thermosetting polymer

99. collagen is a fibrous protein present most abundantly in:

- a. hair
- b. nail
- c. tendons
- d. arteries

100. animals store glucose in the form of glycogen in:

- a. stomach
- b. mouth
- c. liver and muscles
- d. small intestine

101. The _____ in photochemical smog is due to the presence of:

- a. SO₂(sulphur dioxide)
- b. NO₂(nitrogen dioxide)
- c. CO(carbon monoxide)
- d. CO₂(carbon dioxide)

102. Aerobic decomposition of organic matter i.e. glucose by bacteria in water sediments produces:

- a. propene
- b. ethane
- c. methane
- d. butane

Biology:

Q.133 The simplest independent unit of life is known as :

- A) Bacterial colony
- B) Cell

- C) Chloroplast
- D) DNA

Q.134 The plants having foreign DNA incorporated into their cells are called:

- A) Clonal plants
- B) Transgenic plants
- C) Biotech plants
- D) Tissue cultured plants

Q.135 Pasteurization technique is widely used for preservation of:

- A) Water
- B) Heat
- C) Milk products
- D) vaccines

Q.136 The production of genetically identical copies of organisms by asexual reproduction is called:

- A) Genetic engineering
- B) Integrated disease management
- C) Hydroponic culture technique
- D) Cloning

Q.137 The _____ model of plasma membrane suggests that proteins are embedded in lipid bilayer:

- A) Unit membrane
- B) Fluid mosaic
- C) Permeable
- D) Ultracentrifuge

Q.138 The function of nucleolus is to make:

- A) rDNA
- B) Ribosomes

C) RNA

D) Chromosomes

Q.139 Lipid metabolism is the function of :

A) Mitochondria

B) Sarcoplasmic reticulum

C) RER

D) SER

Q.140 The enzymes of lysosomes are synthesized on:

A) RER

B) SER

C) chloroplast

D) Golgi apparatus

Q.141 Centrioles are made up of _____ microtubules:

A) 9

B) 27

C) 3

D) 12

Q.142 Which of the following structures is absent in higher plants and found in animal cells:

A) Centriole

B) Cytoskeleton

C) Mitochondria

D) Cytoplasm

Q.143 The soluble part of cytoplasm or fluid that remains when all organelles are removed is known as:

A) Solution

B) Gelatin material

C) cytoskeleton

D) cytosol

Q.144 The outer membrane of the nuclear envelope is at places continuous with the:

- A) Golgi apparatus
- B) Endoplasmic reticulum

- C) Lysozymes

- D) Peroxisomes

Q.145 The process by which unwanted structures within the cell are engulfed and digested within the lysosome is known as:

- A) Endocytosis
- B) Exocytosis

- C) Hydrolysis

- D) Autophagy

Q.146 Down's syndrome is a result of non-disjunction of _____ pair of chromosomes that fails to segregate :

- A) 21st
- B) 22nd

- C) 18th

- D) 24th

Q.147 _____ is most abundant carbohydrate in nature.

- A) Waxes
- B) Glycerol

- C) Starch

- D) Cellulose

Q.148 Which of the following is a keto sugar:

- A) Glyceraldehyde
- B) Dihydroxy-acetone

- C) Ribose

- D) Glucose

Q.149 Amino acid in which the R-group is hydrogen is:

- A) Glycine
- B) Alanine

- C) Leucine

D) Valine

Q.150 Acylglycerols like fats and oils are esters formed by condensation reaction between:

A) Fatty acids and water

B) Fatty acids and alcohols

C) Fatty acids and glucose

D) Fatty acids and phosphates

Q.151 Which of the following is purine:

A) Guanine

B) Cytosine

C) Thymine

D) Uracil

Q.152 If the co-factor is covalently or tightly and permanently bonded to enzyme then it will be called:

A) Coenzyme

B) Prosthetic group

C) Activator

D) Apoenzyme

Q.153 Optimum pH value for the working of pancreatic lipase is :

A) 4.50

B) 7.60

C) 2.00

D) 9.00

Q.154 The view that active site of an enzyme is flexible and when a substrate combines with it, cause changes in enzyme structure is known as:

A) Lock & key model

B) Induce fit model

C) Sliding filament model

D) Specificity model

Q.155 All coenzymes are derived from:

- A) Proteins
- B) Nucleic acids
- C) Carbohydrate
- D) Vitamins

Q.156 Reverse transcription is used to make DNA copies of:

- A) Host RNA
- B) Viral RNA
- C) Host DNA
- D) Viral DNA

Q.157 Antibiotics are produced by fungi and certain bacteria of group:

- A) Actinomycetes
- B) Oomycetes
- C) Ascomycetes
- D) Basidiomycetes

Q.158 Which statement about bacteria is true:

- A) Gram positive bacteria have more lipids in their cell wall
- B) Gram negative bacteria have more lipids in their cell wall
- C) Lipids are absent in cell wall of both gram positive and negative bacteria
- D) Both have equal amount of lipids

Q.159 Fungi which cause thrush in humans:

- A) Sacromyces
- B) Candidosis
- C) Lovastatin
- D) Aspergillus

Q.160 When beef which is not properly cooked is consumed by humans,they become infected by:

- A) Tape worm
- B) Hook worm
- C) Pin worm
- D) Round worm

Q.161 Sleeping sickness in humans is caused by:

- A) Trypanosoma
- B) Plasmodium
- C) Anopheles
- D) Andes

Q.162 Schistosoma is a parasite that lives in the _____ of the host.

- A) Intestine
- B) Kidney
- C) Liver
- D) BLOOD

Q.163 The cavity between body wall and alimentary canal is:

- A) Coelom
- B) Mesoderm
- C) Endoderm
- D) Mesoglea

Q.164 The layer which forms the lining of digestive tract and glands of digestive system is:

- A) Ectoderm
- B) Mesoderm
- C) Endoderm
- D) Mesoglea

Q.165 Which one of the following vitamins is produced by microflora of large intestine?

- A) Vitamin K
- B) Vitamin C
- C) Vitamin A
- D) Vitamin D

Q.166 _____ is activated to _____ by enterokinase/enteropeptidase enzyme secreted by the lining of duodenum:

- A) Pepsinogen, pepsin
- B) Pepsinogen, trypsin
- C) Trypsinogen, trypsin

D) Chymotrypsinogen, chymotrypsin

Q.167 Which of the following are absorbed in the large intestine?

A) Water and salts

B) Water and peptones

C) Salts and glycerol

D) Amino acids and sugars

Q.168 Saliva is basically composed of water, mucus, amylase and :

A) Sodium bicarbonate

B) Sodium chloride

C) Sodium hydroxide

D) Hydrocarbons

Q.169 The total inside capacity of lungs is _____ for man.

A) 6.7 liters

B) 2.5 liters

C) 7 liters

D) 5 liters

Q.170 The average life span of red blood cell is about:

A) Four months

B) Two months

C) Five months

D) One month

Q.171 The lymphatic vessels of the body empty the lymph into blood stream at the:

A) Abdominal vein

B) Subclavian vein

C) Jugular vein

D) Bile duct

Q.172 Right atrium is separated from right ventricle by:

A) Tricuspid valve

B) Bicuspid valve

C) Semilunar valve

D) Septum

Q.173 Site of filtration in nephron is :

A) Glomerulus and Bowman's capsule

B) Proximal and Distal end

C) Ascending and descending arm

D) Loop of Henle

Q.174 Antidiuretic hormone increases the reabsorption of :

A) Amino acids

B) Salts

C) Ammonia

D) Water

Q.175 Active uptake of _____ in the ascending limb or thick loop of Henle is promoted by the action of aldosterone:

A) K^+

B) Cl^-

C) Ca^{++}

D) Na^+

Q.176 The process through which the body maintains the internal environment from the fluctuations of external environment is called as:

A) Behaviour of organisms

B) Adaptation

C) Thermoregulation

D) Homeostasis

Q.177 Active pumping out of Na^+ occurs at which part of nephron:

A) Proximal tubule

B) Descending loop of Henle

C) Ascending loop of Henle

D) Collecting ducts

Q.178 The structures which respond when they are stimulated by impulse coming

through motor neuron are:

- A) Receptors
- B) Responers
- C) Transducers
- D) Effectors

Q.179 Thalamus and cerebrum are the part of:

- A) Fore brain
- B) Mid brain
- C) hind brain
- D) Spinal cord

Q.180 There is also EVIDENCE that high levels of _____ may contribute to the onset of Alzheimer's disease:

- A) Mg
- B) Mo
- C) Al
- D) Ca

181 L-dopa or Levodopa is used to get some relief from??

- a..epilepsy
- b..alzehmeirs disease
- c..parkinsons disease
- d..dementia

182 spermatogonia differentiate directly into??

- a..primary spermatocytes
- b..secondary spermatocytes
- c..spermatozoa
- d..spermatids

183 traponema palladium causes??

- a..AIDS
- b..genital herpes
- c..syphilles
- d..gonorrhoea

184 what is the location of interstitial cells in testes??

- a..inside the seminiferous tubules

- b..b/w the seminiferous tubules
- c..among the germinal epithelial cells
- d..around the testes

185 a type of cells in human testes which produce testosterone are called ??

- a..germ cells
- b..sertoli cells
- c..interstitial cells
- d..spermatocytes

186 the hormone produced from corpus luteum is??

- a..prolactin
- b..FSH
- c..progesterone
- d..LH

187 the length of myofibril from one Z-band to the next is described as??

- a..sarcolemma
- b..sarcoplastm
- c..sarcomere
- d..muscle fibre

188 the Ca ions released during a muscle fibre contraction attach with ?/

- a..myosin
- b..actin
- c..troponin
- d..tropomyosin

.....

205 every molecule of NADH₂ fed into ETC produces ??

- a..2 ATP
- b..3 ATP
- c..4 ATP
- d..6 ATP

206. the DNA molecule formed from messenger-RNA by reverse transcriptase is called??

- a..complementary DNA
- b..recombinant DNA
- c..chimeric DNA
- d..plasmid DNA

207. the agent which separates the two strands of DNA in PCR is??

- a..DNA ligase
- b..primer

- c..het
- d..helicase

208. cystic fibrosis patient lack a gene that codes for trans-membrane carrier of??

- a..Na⁺ ions
- b..cl⁻ ions
- c..ca⁺² ions
- d..k⁺ ions

209. the phage commonly used as a vector in genetic engeenring is ??

- a..lambda phage
- b..gamma phage
- c..ts phage
- d..tr phage

210. restriction endonucleases are naturally occurring enzymes in??

- a..viruses
- b..bacteria
- c..fungi
- d..plants

211. in an ecosystem mychorrhizae is an example of??

- a..predation
- b..symbiosis
- c..mutualism
- d..parasitism

222. as a result of destruction of ozone layer their is significant increase in??

- a..ultra-voilet radiations
- b..green house gases
- c..nitrogen oxide
- d..sulphur oxide

213. higher rate of a biological activity in a nutrient rich pond water is called??

- a..water pollution
- b..air pollution
- c..eutrophication
- d..industrial effects

214. living part of ecosystem is ??

- a..lithosphere
- b..hydrosphere
- c..community
- d..biosphere

215. a living association b/w two living organisms of different species which is beneficial to both the partners is called??

- a..commensalism
- b..parasitism
- c..mutualism
- d..predation

216. the structures which are reduced during the course of evolution and have no apparent function are called??

- a..regenerated organs
- b..vestigial organs
- c..saltatory organs
- d..useless organs

217. when a gene supresses the effect of another gene at another locus the phenomenon is termed as??

- a..over dominance
- b..plieotropy
- c..epistasis
- d..co-dominance

218. phenylkotonuria is an example of??

- a..polploidy
- b..transmutation
- c..inversion
- d..point mutation

219. a situation in which one gene affects two or more unrelated characters is called??

- a..epistasis
- b..plieotropy
- c..dominance relation
- d..polygenes

220. the mutation which causes change in the sequence of DNA is called??

- a..point mutation
- b..chromosomal mutation
- c..deletion
- d..inversion

