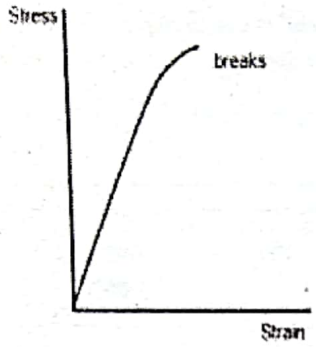
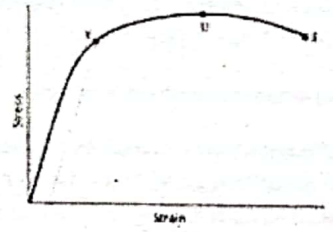
PRACTICE SOLVED PAPER-2

1. Figures given below represent stress-strain curve for different materials. Which of the following represents a brittle material?

a.



b.



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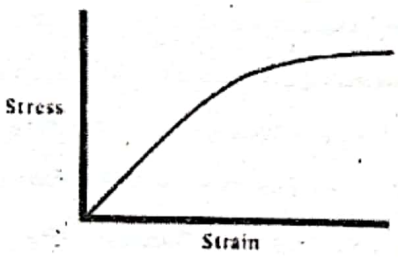
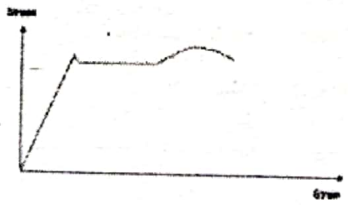


d.



2. The particle of equal or greater mass than proton is
   a. leptons
   b. electrons
   c. mesons
   d. baryons

3. Experimental mass of deuteron is 3.3435x10-27kg. The mass defect is
   a. positive
   b. negative
   c. none of these
   d. zero

4. Rate of change of momentum equals to
   a. impulse
   b. force
   c. power
   d. K.E

5. Why total mass of all individual protons and neutrons in a nucleus is greater than mass of nucleus which they constitute?
   a. when protons and neutrons combine to form nucleus, mass decrease due to gain of energy
   b. possible mass loss is due to faulty techniques to measure mass of nucleus
   c. this statement is not true in most of the cases
   d. when protons and neutrons combine to form nucleus, some mass is destroyed resulting in energy release

6. Which of the following is not a derived quantity
   a. volume
   b. acceleration
   c. pressure
   d. none of these

7. A power line 8m high carries a current 100A. What is the magnetic field of wire at ground?
   a. 0.002T
   b. 2.5×10^{-6} T
   c. 0.005T
   d. 4×10^{-6} T

8. What is the distance between interference fringes affected by the separation between the slits of Young's experiment?
   a. λLd
   b. λd/L
   c. λL/d
   d. dL/λ

9. What is the value of current in a 10cm long wire at an angle of 30° to a uniform magnetic field of 0.25T when the force acting on the wire is 2.5N?
   a. 1A
   b. 50A
   c. 200A
   d. 100A

10. The pressure exerted by an ideal gas is _____ times of the kinetic energy of all the molecules contained in a unit volume of gas.
    a. ½
    b. 2/3
    c. 1/3
    d. 3/4
11. Three resistances 400, 40 and 4 ohm are connected in series across 444V supply. The current flowing through the circuit will be
    a. 1 mA
    b. 444 mA
    c. 100 mA
    d. 1 A
12. When gas is heated at constant pressure, the heat supplied is utilised in
    a. increasing the internal energy of gas
    b. doing some external work
    c. increasing internal energy and also for doing some external work
    d. none of the above
13. Diffraction effect is
    a. more for round edges
    b. more for sharp edges
    c. equally for round and sharp edges
    d. less for sharp edges
14. A ship is approaching a seaport at 10km/h sends a sonic signal of frequency of 103Hz. What is the apparent frequency of the signal as received by a receiver on the seaport?
    a. 984Hz
    b. 1000Hz
    c. 1008Hz
    d. 1210Hz
15. A rectangular bar of iron is 1.5cm by 2cm in cross section and 2m long. What is its resistance in ohm if resistivity of iron is $10^{-7}\Omega m$?
    a. 1.2×10^{-2}
    b. 3.5×10^{-5}
    c. 6.6×10^{-4}
    d. 10×10^{-6}
16. Two parallel wires conducting current in same direction
    a. attract each other
    b. are equal
    c. repel each other
    d. none
17. The half-life of a nucleus is 9.70 hours. What is its decay constant?
    a. $1.99\times10^{-6}s$
    b. $3.22\times10^{-5}s$
    c. $3.22\times10^{-6}s$
    d. $2.00\times10^{-5}s$
18. Which of the following is not transported by waves?
    a. disturbance
    b. matter
    c. energy
    d. all of these
19. Power in term of base units is given by:
    a. As
    b. $Kgms^{-1}$
    c. Kgm^2s^{-3}
    d. $Kgm^{-1}s^{-2}$
20. A current carrying wire is placed in a magnetic field. What must the orientation of the movement v of the wire be so that force on it is zero?
    a. v is perpendicular to B
    b. v is parallel to B
    c. q is perpendicular to both v and B
    d. any of the above
21. Path difference between two beams of light reflected from a thin film depends upon
    a. nature of film
    b. thickness of film
    c. angle of incidence
    d. All of the above
22. Destruction caused by an object depend on_____ of the object.
    a. mass
    b. momentum
    c. velocity
    d. acceleration
23. The condition for the reversibility of a cycle is
    a. The working parts of the engine must be friction free
    b. the pressure and temperature of the working substance must not differ appreciably from those of the surroundings
    c. All the processes taking place in the cycle of operation must be extremely slow
    d. All of these

51. CF_2Cl is one of the radicals formed from Freon-12 (CF_2Cl_2). To make the radical, it undergoes series of elementary steps:

i. $F_2 \rightarrow 2F$ *Fast*

ii. $F + CCl \rightarrow CFCl$ *Fast*

iii. $CFCl + F_2 \rightarrow CF_2Cl + F$ *Slow*

iv. $2F \rightarrow F_2$ *Slow*

What is the overall order of the rate equation?

a. 1.5
b. 2
c. 2.5
d. 3

52. What is the product when chlorobenzene is reacted with sodium hydroxide in preparation of phenols?

a. Alkyl halide
b. Water
c. Mono substituted benzene ring
d. Sodium phenoxide

53. In Grignard reaction, R–MgX is commonly used to react with what functional group in order to produce an alcohol?

a. Ether
b. Carboxylic acid
c. Aldehyde
d. Amines

54. Predict the molecular shape of

PO_4^{3-}

a. Trigonal Planar (2BP,1LP)
b. Tetrahedral (4BP, 0LP)
c. Octahedral (4BP, 2LP)
d. Trigonal Bipyramidal (4BP, 1LP)

55. What is the oxidation number of Co for the complex ion $K_2[Co(CN)_6]$

a. +4
b. -2
c. +2
d. -4

56. A solid zinc sulfide is burned on a Bunsen burner. What is the kp expression

a. $k_p = \frac{[P_{ZnO}]^2[P_{SO_2}]^2}{[P_{ZnO}]^2[P_{O_2}]^3}$
b. $k_p = \frac{[P_{ZnO}]^2[P_{O_2}]^3}{[P_{ZnO}]^2[P_{SO_2}]^2}$
c. $k_p = \frac{[P_{SO_2}]^2}{[P_{O_2}]^3}$
d. $k_p = undefined$

57. Nitrogen dioxide reacts with chlorine monoxide to form what relatively stable product that plays a big role in the ozone depletion of north and south poles?

a. $ClNO_3$
b. $ClNO_2$
c. $ClONO_2$
d. $ClONO_3$

58. Vinegar is used as acidity regulator, as household cleaners, and as solvent for glue production. Calculate the pH, ka, pka, and [OH-] of 1 M of acetic acid that undergoes 0.050% ionization

a. pH=3.30; $k_a = 2.5x10^{-7}$; pK_a=6.60; $[OH^-]=2x10^{-11}$;
b. pH=2.54; $k_a=2.8x10^{-3}$; pK_a=5.08; $[OH^-]=3.47x10^{-12}$
c. pH=2.21; $k_a=6.16x10^{-3}$; pk_a=4.42; $[OH^-]=1.62x10^{-12}$
d. pH=2; k_a=0.01; pK_a=4; $[OH^-]=1x10^{-12}$

59. Which of the following reactions will produce acyl chloride, hydrochloric acid and phosphorus oxychloride?

a. Acetic acid + HCl + H_3PO_4
b. Acetic acid + PCl_5
c. Acetic acid + PCl_3
d. Acetic acid + Cl_2 + H_3PO_4

60. What do you call the reaction when benzene reacts with alkyl halide in the presence of Lewis acid?

a. Friedel-Crafts acylation
b. Hoffman elimination
c. Friedel-Crafts alkylation
d. Suzuki reaction

61. How many hydrogen atoms are there in cycloalkane if n=5?

a. 8
b. 10
c. 12
d. 16

62. Which of the following is different among others:

a. CH_3COOH
b. H_2CO_3
c. H_3PO_4
d. H_2SO_4

63. Which of the following is correct according to increasing ionic radius?

a. $Na^+ < S^{2-} > Li^+ > O^{2-}$
b. $Li^+ < Na^+ < S^{2-} > O^{2-}$
c. $O^{2-} < Na^+ > S^{2-} < Li^+$
d. $Na^+ < O^{2-} > S^{2-} < Li^+$

64. What is the coordination number of $[Co(en)_3]^+$?

a. 0
b. 2
c. 3
d. 1

65. In 1951, halothane was first synthesized by C.W. Suckling with what medical property?

a. Analgesic property
b. Anesthetic property
c. Paralytic property
d. Anxiolytic property

66. How many electrons of lone pairs does ammonium have?

a. 0
b. 1
c. 4
d. 8

67. What is the product when an aldehyde or ketone is treated with sodium cyanide and strong acid such as hydrochloric acid?

a. Cyanohydrin
b. Cyanide ion
c. Hydrogen cyanide
d. Cyano radical

68. What is the product when acetic acid is reacted with ethanol?

a. Ethyl ether
b. Acetone
c. Ethyl ethanoate
d. Ethene

69. Match the following wastewater treatment:

i. Primary Treatment	a. Activated Sludge Process
ii. Secondary Treatment	b. Sedimentation
iii. Tertiary Treatment	c. Disinfection

a. i. a, ii. b, iii. c
b. i. c, ii. b, iii. a
c. i. b, ii. c, iii. a
d. i. b, ii, a, iii. c

70. What's the gaseous compound generated when fluorine gas is reacted with cold sodium hydroxide?

a. Sodium fluoride
b. Water vapor
c. Hydrogen gas
d. Oxygen difluoride

71. If ammonia reacts with a weak acid such as phosphoric acid, it forms nitrogen- and phosphorus- containing fertilizer. What is the chemical compound of the product?

a. (NH4)3PO4
b. (NH4)2HPO4
c. (NH4)3HPO4
d. (NH3)3PO4

72. A coordination complex is?

a. A number of bound ligands
b. A metal surrounded by ligands
c. A number of oxidized metal
d. A shorthand notation to illustrate the complex ion.

73. 10 kg of hematite (Fe_2O_3) ore contains 6.5 kg Fe. Calculate the % of Fe_2O_3 in the ore.

a. 65%
b. 80.3 %
c. 92.9%
d. 62.5%

74. Ligands are called donor atoms. Which of the following is the function of ligands?

a. It acts as a Lewis base which donates lone pair of electrons
b. It acts as a Lewis acid which donates lone pair of electrons
c. It acts as a Lewis acid which accepts lone pair of electrons
d. It acts as a Lewis base which accepts lone pair of electrons

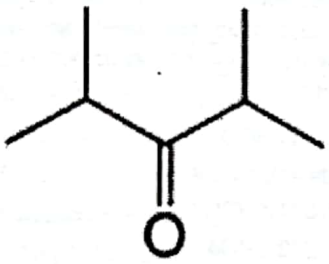
75. The dehydration of ethanol with a catalyst will produce

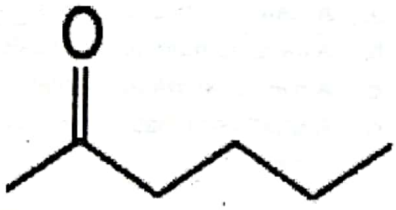
a. Ethane
b. Ethanoic acid
c. Ethene
d. Ethyne

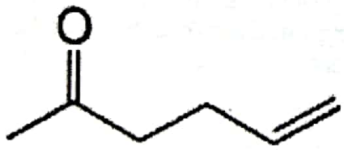
76. Which of the following is false about electrophiles?

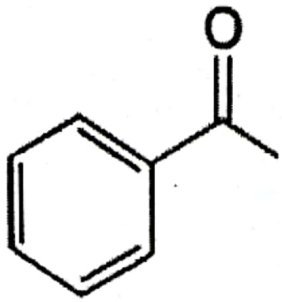
a. It is a reagent attracted to electrons.
b. They can be called as Lewis acids.
c. It doesn't have an octet of electrons.
d. They are negatively charged that are attracted to electron-rich center.

77. Which of the following ketones will give a negative iodoform test?

a. 

b. 

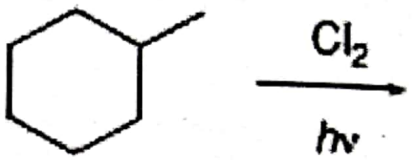
c. 

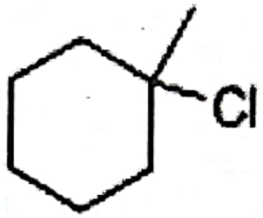
d. 

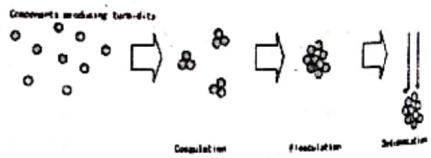
78. Carbon can covalently bond with other carbon atoms. Among the following statements, which is not true about its bonding?

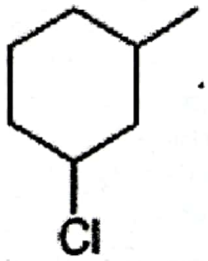
a. All carbon atoms can bond to the maximum number of four bonds.
b. A single bond chain of carbon is saturated.
c. A double bond chain of carbon is unsaturated.
d. It can form single, double, triple, and quadruple bonds with other carbon atoms.

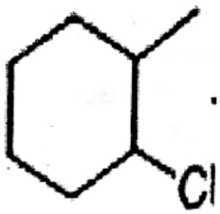
79. Which probably is the most desired product of radical halogenation of:



a. 

b. 

c. 

d. 

80. Let us say a student named Mr. Peregrine Phillips burned an elemental sulfur powder on a Bunsen burner and collected the smoke into a chamber. What could possibly be the gas that was produced?

a. Sulfur gas
b. Hydrogen sulfide
c. Sulfur dioxide
d. Sulfur trioxide

81. Carboxylic acid is often derived with the use of Jones reagent from the oxidation of what organic compound?

a. Aldehydes
b. Alcohols
c. Ethers
d. Ketones

82. Approximately how many ozone molecules is removed by chlorine atom in the stratosphere?

a. 100000
b. 10000
c. 1000
d. 1000000

83. Polymerizing chloroethene will result to what kind of polymer?

a. PVC
b. PP
c. PTFE
d. HDPE

84. How many electrons do hydrogen atom has in Lewis Structure when it reaches octet?

a. 1
b. 2
c. 4
d. 8

85. What is the E^0_{cell} *of* $Zn(s) + Hg^{2+} \rightarrow Zn^{2+} + Hg(l)$?

$Zn^{2+}(aq) + 2e^- \rightarrow Zn(s)$ E^0= -0.76V

$Hg^{2+} + 2e^- \rightarrow Hg(l)$ E^0= +0.86V

a. +1.62V
b. -1.62V
c. +0.10V
d. -0.10V

86. What is the first step when butyl chloride is reacted with potassium hydroxide?

a. Hydroxide ion attacks the electron poor carbon atom
b. The carbon-halogen bond breaks to form a carbocation
c. Forms a leaving group
d. Forms a bimolecular transition state

87. What is the product when primary benzene amine is treated with the mixture of NaNO2 and HCl?

a. Phenol
b. Sodium Phenoxide
c. Diazonium salts
d. Water

88. How is cumene obtained in preparing a phenol?

a. Hoffman elimination of benzene with propylene
b. Friedel-Crafts acylation of benzene with propylene
c. Friedel-Crafts alkylation of benzene with propylene
d. Suzuki reaction of benzene with propylene

89. In the morning (23°C), a man laid down 100 pcs of 10g fish far behind the seashore and being dried up at 40°C until the afternoon. After drying, the dried fish weighed 4.3 g each. How much heat is supplied to evaporate the water from all the fish?

a. 51.23 kJ
b. 40.54 kJ
c. 71.13 kJ
d. 30.23 kJ

90. When an amino acid in dipolar state, what happens when it gains a proton?

a. The pH becomes high
b. The pH becomes low
c. It becomes isoelectronic
d. It cannot be protonated

91. Source of Taq polymerase
    a. Thermus aquaticus
    b. Thermus floral
    c. Floral aquaticus
    d. Taq aquaticus

92. Pick out the correct combination which describes the disease and its gene therapy which has been used
    a. Cystic fibrosis -- Liposomes
    b. Coronary artery angioplasty – implantation of clotting factor genes
    c. Parkinson's disease -- balloon coated with plasmid that contains gene
    d. Hemophilia – grafting of dopamine producing cells

93. Adaptations that an organism acquires by its own actions are (According to Lamarck)
    a. heritable
    b. not heritable
    c. can be made heritable through some modifications
    d. both heritable and not heritable

94. All of the following are continuously varying traits except
    a. Kernel color in wheat
    b. Height and skin color in humans
    c. Tongue rolling in humans
    d. None

95. greenhouse effect gives rise to
    a. global warming
    b. ozone depletion
    c. acid rain
    d. All of the above

96. Active site of an enzyme is flexible and when a substrate combines with it, cause changes in enzyme structure is explained by
    a. Lock & key model
    b. Induce fit model
    c. Both A and B
    d. Sliding filament model

97. Which type of molecules can cross the membrane easily?
    a. Polar
    b. Ions
    c. Large
    d. Non-polar

98. Osmosis is
    a. Flow of water from higher to lower concentration solution through semi permeable membrane
    b. Flow of water from lower to higher concentration solution through semi permeable membrane
    c. Flow of solute through semi permeable membrane
    d. Flow of water without membrane

99. During the propagation of a nerve impulse, the action potential results from the movement of
    a. Na+ ions from extracellular fluid to intracellular fluid
    b. K+ ions from extracellular fluid to intracellular fluid
    c. Na+ ions from intracellular fluid to extracellular fluid
    d. K+ ions from intracellular fluid to extracellular fluid

100. What is the fate of osteoblasts as the bones mature?
    a. They dissolve
    b. They move out
    c. They get entrapped in the growing bone
    d. They deposit on the bone

101. Which of the following does not reside inside the nucleus?
    a. DNA
    b. Chromosomes
    c. Proteins
    d. RNA

102. Glycogen structure is similar to the structure of:
    a. amylose
    b. amylopectin
    c. cellulose
    d. starch

103. Foreign piece of DNA is attached with the plasmid to get recombinant DNA using enzyme:
    a. DNA polymerase
    b. DNA endonuclease
    c. DNA ligase
    d. Reverse transcriptase

104. Xerophytes must have
    a. Reduced rate of transpiration
    b. Increased rate of transpiration
    c. Moderate rate of transpiration
    d. All of the above

105. Almost all of the absorption of the digestion products from food is carried out in

a. Jejunum
b. Ileum
c. Duodenum
d. All of the above

106. In DNA and RNA, two nucleotides are joined together by_____ linkage

a. Phosphodiester
b. Peptide
c. Ester
d. Glycosidic

107. The stages of xerosere include 1. moss stage 2. shrub stage 3. foliage lichen stage 4. forest stage 5. plant stage 6. crustose lichen stagewhat is the correct order?

a. 1, 2, 3, 4, 5, 6
b. 6, 3, 1, 5, 2, 4
c. 4, 2, 5, 1, 3, 6
d. 6, 5, 4, 3, 2, 1

108. A pure breeding tall pea plant was crossed with dwarf plant. The frequency of dwarf plants in F1 and F2 respectively is _____. F2 is obtained by self fertilization of F1.

a. 0 : 0.25
b. 0.25 : 0.5
c. 0.5 : 1
d. 0.75 : 1

109. During the development when cartilage is replaced by the bones, _____ cells take part in dissolving cartilage

a. Osteoblasts
b. Osteoclasts
c. Osteocytes
d. Stem cells

110. the rRNA is synthesized in _____ and stored in _____

a. nucleolus, golgi apparatus
b. endoplasmic reticulum, nucleolus
c. nucleolus, nucleolus
d. endoplasmic reticulum, golgi apparatus

111. Ascaris is

a. Ectoparasite
b. Respiratory parasite
c. Intestinal parasite
d. Urinogenital tract parasite

112. Co-dominant individuals are self fertilized to give ratio of offspring true breeding 1 : true breeding 2 : co-dominance

a. 1 : 1 : 2
b. 1 : 1 : 0
c. 3 : 3 : 2
d. None

113. Which of the following is not correctly matched?

a. Anopheles — plasmodium
b. tsetse fly — cholera
c. house fly — hepatitis
d. All are correct

114. Cytoplasmic strands that extend through pores in adjacent cell walls

a. Plasmodesmata
b. Pilli
c. Extensions
d. Pseudopods

115. Choose the correct statement

a. Parietal and temporal are paired bones while frontal, occipital, sphenoid, and ethmoid are unpaired bones in cranium
b. There are 14 facial bones, 4 paired, 6 unpaired
c. The unpaired facial bones are mandible, vomer, maxilla, zygomatic

116. Sexual reproduction of fungi involve:

a. meiosis
b. fusion of haploid nuclei
c. plasmogamy
d. all of the above

117. Cactus has adaptations to reduce the rate of transpiration

a. Shed its leaves
b. Stems are photosynthetic
c. Stems store water
d. All of the above

118. In animals, fatty acids are:

a. Straight chain
b. Branched
c. Ringed
d. All of the above

119. Haemophilia B is due to abnormality of factor

a. VIII
b. IX
c. X
d. XI

120. Pulmonary arteries carry _____ blood _____ the heart

a. deoxygenated; towards
b. oxygenated; towards
c. deoxygenated; away from
d. oxygenated; away from

121. _____has the largest amount of proteins.

a. Inner mitochondrial membrane
b. Outer mitochondrial membrane
c. Myelin sheath membrane
d. Erythrocyte membrane

122. In ZZ-ZW sex determination system, ZW is

a. male
b. Female
c. either male or female
d. the defected specie

123. The rate of transpiration doubles for every rise in _____ °C in temperature

a. 1
b. 2
c. 5
d. 10

124. Choose the correct option regarding the body cavity of organisms

a. Pseudoceolom – mosquito
b. Aceolom – round worm
c. Ceolom – snail
d. All of the above

125. Painful burning sensation in the chest is

a. Pyrosis
b. Reflux
c. Diarrhoea
d. Constipation

126. which of the following is not true about first stage of xerosere succession

a. lichens get impregnated in the form of crust.
b. lichens can live in extreme conditions
c. lichen crustose is always dry surface
d. All are correct

127. ATP is synthesized in

a. nucleus
b. mitochondria
c. centriole
d. ribosomes

128. Cordae tendinae are related to

a. tricuspid valve
b. dicuspid valve
c. both A and B
d. none of the above

129. Protective coating of fruits and leaves is made up of _____

a. Rubber
b. Cholesterol
c. Chitin
d. Wax

130. Sterilisation is the physical method of controlling bacterial growth. It involves the use of

a. radiation
b. moist and dry heat
c. filtration
d. all of the above

131. Causative agent of thrush

a. Candida
b. Lovastatin
c. Candidiasis
d. Aspergillus

132. Birth canal is the other name of

a. Uterus
b. Ovary
c. Vagina
d. Oviduct

133. Which of the following statements is true for xerophytes?

a. Stomata are kept open
b. Stomata are located on lower portion of leaf
c. Stomata are located on upper surface
d. Transpiration rate is higher

134. Which of the following statements is not correct according to starch sugar hypothesis?

a. Guard cells are the only photosynthesizing cells in the epidermis of the leaves
b. When the sugar level decreases, the guard cells become turgid and stoma or pore opens
c. During night, osmotic pressure is lowered and stoma is closed
d. Stoma opens during day time and closes during night time

135. Erythroblastosis foetalis occurs when

a. When mother is Rh-negative and father is Rh-positive
b. When mother is Rh-positive and father is Rh- negative
c. Both of the above
d. None

136. Lymph is filtered by:

a. Lymph nodes
b. Lymph masses
c. Lymphocytes
d. Spleen

137. The protein of bones and cartilage is called

a. Keratin
b. Collagen
c. Globulin
d. Albumin

138. A neuron lies inside CNS, dendrites are long, axons are short. What type of neuron is that?

a. Sensory neuron
b. Associated neuron
c. Motor neuron
d. Could be any of the above

139. The structures for attachment in T4 bacteriophage is:

a. collar
b. head
c. tail fibres
d. end plate

140. Collagen fibers get hardened by the deposit of

a. Calcium carbonate
b. Calcium phosphate
c. Both A and B
d. Calcium chloride

141. _____ pathway becomes discontinuous in the epidermis of roots due to the presence of casparian strips.

a. Symplast
b. Apoplast
c. Vacuolar
d. All of the above

142. Thoraicic lymph duct opens into:

a. Subclavian vein
b. Aorta
c. Superior vena cava
d. Inferior vena cava

143. Specific gravity of most fatty acids

a. 1.0
b. 0.7
c. 1.8
d. 0.8

144. Meiosis occurs in

a. Primary oocytes
b. Secondary oocyte
c. Spermatids
d. Both B and C

145. Epiglottis is a

a. Bone
b. Cartilage
c. Muscle
d. None of the above

146. fossil fuel production is the major source of methane emission along with

a. livestock farming
b. biomass burning
c. biofuels
d. agriculture

147. In humans, baroreceptors are present in

a. Left ventricle
b. Carotid artery
c. Hypothalamus
d. Branchial vessels

148. Causative agent of sleeping sickness is

a. Trypanosoma
b. Anopheles
c. Plasmodium
d. None

149. Which of the following is not true about cardiac sphincter?

a. It is the junction between esophagus and stomach
b. It is composed of special ring of muscles
c. It expands to prevent the contents of stomach to move back into the esophagus
d. It opens in case of peristalsis

150. Choose the correct sequence of bacteriophage attack and injection of its bacteria
   a. Landing - Tail contraction - Penetration - DNA injection
   b. Penetration - Landing - Tail contraction - DNA Injection
   c. Tail contraction - Landing - DNA injection - Penetration
   d. Landing - Penetration - Tail contraction - DNA injection

151. Which of the following is directly proportional to the oxygen carrying capacity of blood?
   a. pH
   b. Carbon dioxide
   c. Temperature
   d. All of the above

152. in coelomates, visceral layer covers the
   a. alimentary canal
   b. body wall
   c. vital organs
   d. All of the above

153. Hardy-Weinberg theorem suggests that the frequencies of alleles and genotypes in a population's gene pool remain
   a. Constant unless acted upon by agents other than sexual recombination
   b. Mobile
   c. Constant
   d. Stationary

154. Water along with dissolved minerals travels from roots to all the way to the leaves. This is called
   a. ascent of sap
   b. transpiration pull
   c. cohesion-tension
   d. root pressure

155. Trypanosoma is carried to human through
   a. Plasmodium
   b. Musca domestica
   c. Anopheles
   d. Glossina

156. During inhalation
   a. Alveolar pressure is greater than atmospheric pressure
   b. Alveolar pressure is less than atmospheric pressure
   c. Alveolar pressure is the same as atmospheric pressure
   d. any of the above possibilities may appear

157. _____ is most abundant carbohydrate found in nature.
   a. Wax
   b. Glucose
   c. Starch
   d. Cellulose

158. Hereditary characters pass from parents to offspring through
   a. Gene
   b. Allele
   c. Gametes
   d. None of the above

159. A monohybrid cross yielded 3:1 in F2. What phenomenon describes this ratio?
   a. Independent assortment
   b. Segregation
   c. Both
   d. None

160. Pancreatic juice contains
   a. Amylase
   b. Lipase
   c. Trypsinogen
   d. Sodium bicarbonate
   e. All of the above

161. Complete the sentence using the most suitable preposition.

He could not see anything ..... fog and smog.

a. Against
b. Amid
c. Per
d. Without

162. Complete the sentence using the grammatically correct word or phrase.

The team..... divided over minor point.

a. Has
b. Will have
c. Have
d. Will

163. Optimum most closely refers to ,,,,,,,,, .

a. Ideal
b. Spacious
c. Outdoor
d. Maximum

164. Complete the sentence using the most suitable preposition.

The railway station is right ..... the flyover.

a. Below
b. Under
c. among
d. Beneath

165. The word closest in meaning to Acupuncture is _____

a. Stylostixis
b. Hole
c. Pain killer
d. Medicine

166. Complete the sentence using the most suitable preposition.

We are going..... Karachi tomorrow.

a. at
b. for
c. to
d. towards

167. The word closest in meaning to Chastise is _____

a. Appreciate
b. Blame
c. Catastrophe
d. Hurry

168. Complete the sentence using the most suitable preposition.

The wreck of many ships remains ..... the sea.

a. Along
b. Under
c. With
d. At

169. Complete the sentence using the most suitable preposition.

It's been raining ..... morning.

a. From
b. Until
c. For
d. Since

170. The word closest in meaning to Infidel is _____

a. Unbeliever
b. Indulge
c. Believer
d. Trust

171. Complete the sentence using the grammatically correct word or phrase.

He ..... part time job when he has time.

a. Do
b. Will
c. Did
d. Does

172. Select the word or phrase which is closest in meaning to the underlined words.

Her mother's ignorance towards her has made her <u>petulant.</u>

a. Angry
b. Sad
c. Childishly irritable
d. Ignorant

173. Select the word or phrase which is closest in meaning to the underlined words.

A raise in the bonus might <u>stimulate</u> the production.

a. Encourage
b. Stagnant
c. Decrease
d. Stop

174. Complete the sentence using the most suitable preposition.

The ceremony lasted for 2 hours and we had to stand _____

a. Out
b. Over
c. Throughout
d. Through

175. The word closest in meaning to Balk is _____

a. Action
b. Disobey
c. Help
d. Obedient

176. Complete the sentence using the most suitable preposition.

I shall go to his house ___ 7 pm.

a. On
b. At
c. In
d. From

177. Select the word or phrase which is closest in meaning to the underlined words.

Political candidates malign opponents.

a. defame
b. praise
c. beat
d. don't trust

178. Complete the sentence using the most suitable preposition.

The Fifa world cup is starting _____ June 14, 2018

a. On
b. From
c. At
d. In

179. Complete the sentence using the grammatically correct word or phrase.

_____ you not taking a test in English?

a. Have
b. Will
c. Are
d. Had

180. Complete the sentence using the most suitable preposition.

Todd, a well-known artist, suffered _____ the delusion that he was a very great man

a. With
b. From
c. Of
d. In

Answer Key

Question Number	Correct Option
1.	a
2.	d
3.	a
4.	b
5.	d
6.	d
7.	b
8.	c
9.	c
10.	b
11.	d
12.	c
13.	b
14.	d
15.	c
16.	a
17.	d
18.	b
19.	c
20.	b
21.	d
22.	b
23.	c
24.	d
25.	d
26.	a
27.	b
28.	b
29.	c
30.	b

Question Number	Correct Option
31.	d
32.	a
33.	d
34.	c
35.	b
36.	c
37.	a
38.	b
39.	d
40.	d
41.	d
42.	b
43.	c
44.	d
45.	d

Question Number	Correct Option
46.	b
47.	b
48.	b
49.	b
50.	b
51.	c
52.	d
53.	c
54.	b
55.	a
56.	c
57.	c
58.	a
59.	b
60.	c
61.	b
62.	d
63.	b
64.	c
65.	b
66.	a
67.	a
68.	c
69.	d
70.	d
71.	b
72.	b

Question Number	Correct Option
73	c
74.	a
75.	c
76.	d
77.	a
78.	d
79.	a
80.	c
81.	b
82.	a
83.	a
84.	b
85.	a
86.	a
87.	c
88.	c
89.	b
90.	b

Question Number	Correct Option
91.	a
92.	a
93.	a
94.	c
95.	a
96.	b
97.	d
98.	a
99.	a
100.	c
101.	d
102.	b
103.	c
104.	a
105.	b
106.	a
107.	b
108.	a
109.	b
110.	c
111.	c
112.	a
113.	b
114.	a
115.	a
116.	d
117.	d
118.	a
119.	b
120.	c
121.	a
122.	b
123.	d
124.	c.
125.	a

Question Number	Correct Option
126.	c
127.	b
128.	c
129.	d
130.	d
131.	a
132.	c
133.	b
134.	b
135.	a
136.	a
137.	b
138.	a
139.	c
140.	b
141.	b
142.	a
143.	d
144.	a
145.	b
146.	a
147.	b
148.	a
149.	c
150.	a
151.	a
152.	a
153.	a
154.	b
155.	d
156.	b
157.	d
158.	a
159.	b
160.	e

Question Number	Correct Option
161.	b
162.	c
163.	a
164.	d
165.	a
166.	c
167.	b
168.	b
169.	d
170.	a
171.	d
172.	c
173.	a
174.	c
175.	b
176.	b
177.	a
178.	b
179.	c
180.	b

Answers and Explanations

Question Number	1.	Correct Option	a

Explanation

Brittle materials break just after the yield point is reached. Yield point is the point on stress-strain curve beyond which an object behaves plastically. In this behaviour the object is permanently deformed. Glass is an example of brittle materials which break right after the yield point.

Question Number	2.	Correct Option	d

Explanation

Baryons are the particles found as part of atom during recent research which have mass roughly equal or greater than protons.

Question Number	3.	Correct Option	a

Explanation

We know that

$$\Delta m = m_p + m_n - m_{exp}$$

$\Delta m = 3.9754 \times 10^{-30} kg$

It's positive which means that sum of mass of individual proton and neutron is greater than the mass of nucleus.

Question Number	4.	Correct Option	b

Explanation

Rate of change of momentum equals to applied force.

Question Number	5.	Correct Option	d

Explanation

When protons and neutrons combine to form nucleus, some mass is destroyed resulting in energy release. This energy is released in the form of small energy packets called photons, hence the mass decreases.

This phenomenon is known as mass defect.

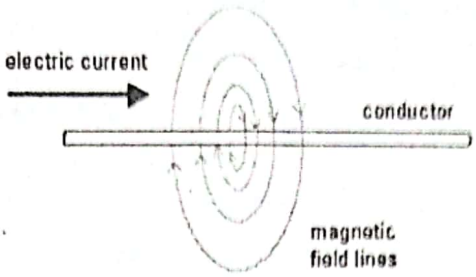
Question Number	6.	Correct Option	d

Explanation

All the given quantities are derived quantities.

Question Number	7.	Correct Option	b

Explanation



Since the magnetic field lines spread out in circular rings the formula to calculate magnetic field 8 m below is

$$B = \frac{\mu_0 I}{2\pi R}$$

where the amgnetic field is to be calculated. The value of is $4\pi \times$

where B is the magnetic field. I is the current and R is the distance $10^{-7} H/m$.

Substituting these values in our above equation gives us our answer

$$B = \frac{4\pi \times 10^{-7} \times 100}{2\pi \times 8}$$

$$B = 2.5 \times 10^{-6} T$$

Question Number	8.	Correct Option	c

Explanation

Distance between interference fringes = Y=λL/d

Question Number	9.	Correct Option	c

Explanation

$$F = IBL\sin\theta$$

$$I = F/BL\sin\theta$$

$$I = 2.5/0.25 \times 0.1 \times \sin 30^{\circ} = 200A$$

Question Number	10.	Correct Option	b

Explanation

Consider the relation

$$P = \frac{2}{3}\frac{N}{V} < \frac{1}{2}mv^2 >$$

So the pressure exerted by an ideal gas is 2/3 times of the kinetic energy of all the molecules contained in a unit volume of gas.

Question Number	11.	Correct Option	d

Explanation

Since the resistances are in series the equivalent resistance will simply their arithmetic sum

$$R_{eq} = 400+44+4 = 444\Omega$$

Now using Ohm's law which states $V = IR$ we can simply find the current

$$I = V/R_{eq} = 444/444 = 1A$$

Current would be same for all resistors because in series connection the current has only one path to follow as shown in the diagram below.

Imageresultforseriescircuit

Question Number	12.	Correct Option	c

Explanation

This scenario is a description of the first law of thermodynamics which is mathematically shown below:

$Q = \Delta U + W$

When gas is heated at constant pressure it means volume will change. This change in volume is transformed in the work done against external factors such as pressure which is given in the equation below.

$W = P\Delta V$

Thus the heat supplied is utilised in increasing internal energy and doing some external work.

Question Number	13.	Correct Option	b

Explanation

Diffraction effect is more for sharp edges

Question Number	14.	Correct Option	d

Explanation

Frequency = 1000Hz

Speed of ship = 10km/h = 2.78m/s

Sonic signal speed = 340m/s

Apparent frequency is found as

$$f' = v_{sound}/(v_{sound}-v_{ship})\times f$$

$$f' = 340/(340-2.78)\times 1000$$

$f' \approx 1008Hz$

Question Number	15.	Correct Option	c

Explanation

Relation between resistance and resistivity is given as

Putting the values in above equation we get,

$R = 6.6\times10^{-4}\Omega$

Question Number	16.	Correct Option	a

Explanation

Two wires conducting current in the same direction attract each other when they are close. Reason is that same direction of current in wires produces magnetic field which is cancelled between the wires and results is the force from outer sides of the wires which cause them to come closer or attract.

Question Number	17.	Correct Option	d

Explanation

Half-life = 9.7×3600s

We know that

Decay constant = $\lambda T_{1/2} = 0.693$

Substituting the values, we get

$\lambda = 2\times10^{-5}s$

Question Number	18.	Correct Option	b

Explanation

Matter is not transported by waves.

Question Number	19.	Correct Option	c

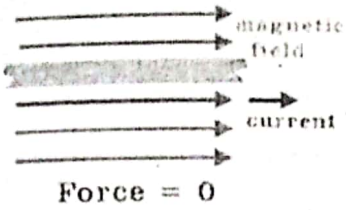
Explanation

Power=$(F\times d)/t = (ma\times d)/t = Kgm^2s^{-3}$

Question Number	20.	Correct Option	b

Explanation

The above scenario is shown in the diagram below



Mathematicallythe relation is given by

$$F=qvB\sin\theta$$

Force will be zero if $\theta=0$ i.e. velocity is parallel to magnetic field.

Question Number	21.	Correct Option	d

Explanation

Path difference between two beams of light reflected from a thin film depends upon thickness and nature of the film and angle of incidence.

Thicker the film, greater will be path difference.

Question Number	22.	Correct Option	b

Explanation

Destruction caused by an object depends upon the product of mass and velocity which is momentum

Question Number	23.	Correct Option	c

Explanation

All the statements fulfil the condition for reversibility.

Question Number	24.	Correct Option	d

Explanation

Out of 4.15cm and 5.5cm, 5.5cm has least decimal places so the result would have one decimal place

Question Number	25.	Correct Option	d

Explanation

Atomic mass 'A' is defined as the sum of atomic number or proton number 'Z' and the number of nucleons 'N'. Mathematically it is given by

$A = Z + N$

On rearranging we get

$Z = (A-N)$

Question Number	26.	Correct Option	a

Explanation

Zero error is a systematic error because it can be corrected with some standard.

Question Number	27.	Correct Option	b

Explanation

We know that

$$E = \Delta mc^2$$

$$\Delta m = (m_N + m_{He}) - (m_{O2} + m_H)$$

$$\Delta m = 1.22\times10^{-3}kg$$

Putting the value in above equation, note we can take c^2 = 931MeV/kg

We get

$E = 1.22\times10^{-3}\times 931\times10^{6} = 1.13MeV$

Question Number	28.	Correct Option	b

Explanation

1 steradian is an angle subtended at the centre of the sphere such that the area of the surface is equal to the square of the radius. This is shown in the diagram below.

Imageresultforonesteradian

Question Number	29.	Correct Option	c

Explanation

Wheatstone bridge is the practical application of Kirchhoff's law.

Question Number	30.	Correct Option	b

Explanation

Center of Newton's ring is dark due to destructive interference which occurs due to superposition of a crest over trough.

Question Number	31.	Correct Option	d

Explanation

All the given options represent the characteristics of Laser beam.

Question Number	32.	Correct Option	a

Explanation

General gas equation is written as:

$PV = nRT$

At constant temperature and mass, the general gas equation becomes,

$PV = constant \Rightarrow P \propto \frac{1}{V}$

Which is Boyle's law.

Question Number	33.	Correct Option	d

Explanation

According to kinetic molecular gas theory, the collision between the gas molecules is perfectly elastic in nature and the gas molecules do not exert force on each other.

Question Number	34.	Correct Option	c

Explanation

Barometer is an instrument which is used to measure the pressure of gases.

Question Number	35.	Correct Option	b

Explanation

When the drag force becomes equal to the weight of the droplet terminal velocity is achieved.

Question Number	36.	Correct Option	c

Explanation

Bernoulli's equation is written as

$$P_1 + \frac{1}{2}\rho v_1^2 + \rho g h_1 = P_2 + \frac{1}{2}\rho v_2^2 + \rho g h_2$$

For horizontal pipe, $h_1 = h_2$

To find v_1 we apply continuity equation

$$A_1 v_1 = A_2 v_2$$

$$v_1 = 6.25 m/s$$

$$P_1 = P_2 + \frac{1}{2}\rho(v_2^2 - v_1^2)$$

$$P_1 = 100kPa + \frac{1}{2} \times 1000 \times (16^2 - 6.25^2)$$

$P_1 = 208kPa$

Question Number	37.	Correct Option	a

Explanation

It is the forces between the molecules of gases which are responsible for the deviation from the set laws of gases i.e. Charles law, Boyle's law etc.

Question Number	38.	Correct Option	b

Explanation

As we know that, magnification is given as

$$M = 1 + d/f$$

Here M = 6 and d = 30cm, thus solving for f

f = 6cm

Question Number	39.	Correct Option	d

Explanation

Logic gates are used in automatic doors, control systems and monitoring & security system and many more.

Question Number	40.	Correct Option	d

Explanation

X-rays undergo interference, diffraction and polarization.

Question Number	41.	Correct Option	d

Explanation

For water ρ=1000kg/m^3

So,

1litre = 1000cm^3

Question Number	42.	Correct Option	b

Explanation

When you put thumb on discharge of water

- Velocity increase
- Pressure decrease
- Volume flow rate is conserved

Question Number	43.	Correct Option	c

Explanation

Diesel engine does not have spark plug and ignition is done by compression. When fuel is injected in engine cylinder, it burns when mix with high temperature compressed air.

Question Number	44.	Correct Option	d

Explanation

Passing X-rays through the sheet of metal increases its temperature. Then cooling in air increases the hardness of metal. Severity of hardness depends upon the speed of cooling.

Question Number	45.	Correct Option	d

Explanation

Bromine is used as quenching gas in Geiger-Muller tube.

Question Number	46.	Correct Option	b

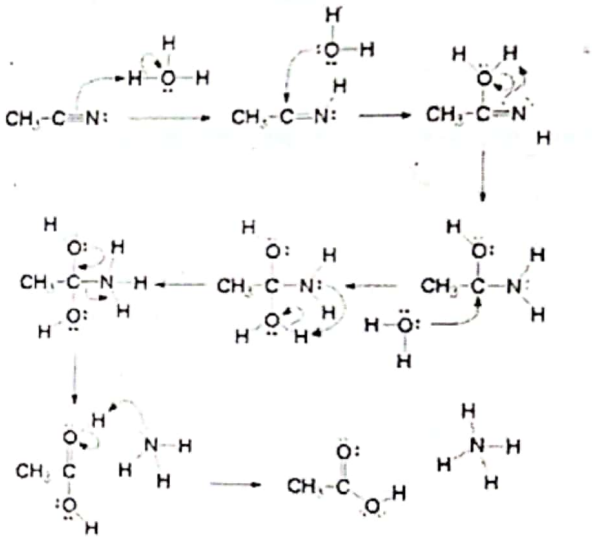
Explanation

Dehydration of alcohols is normally done by heating under acidic condition and undergoes E_1 mechanism to form an alkene. The formation of carbocation is concerted and the reaction and mechanism totally depends on the degree of alcohol.

Question Number	47.	Correct Option	b

Explanation

Carboxylic acid can be prepared from acetonitrile via hydrolysis to form a carboxylic acid and ammonia. Nitrile group contains two pi bonds and is hydrolyzed by hydronium ion (acidic property) until it forms acetoamide bond. This bond is protonated with water until it forms an acetic acid and ammonia.



Question Number	48.	Correct Option	b

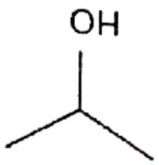
Explanation

Since cyclohexanone is a ketone its reduction will result

Question Number	49.	Correct Option	b

Explanation

The name of the compound is propan-2-ol or isopropyl alcohol.



Question Number	50.	Correct Option	b

Explanation

Diastereomers are stereomers that are not mirror images of each other.

Question Number	51.	Correct Option	c

Explanation

Cancel the common molecules and get the overall reaction:

i. $F_2 \rightarrow 2F$ *Fast*

ii. $F + CCl \rightarrow CFCl$ *Fast*

iii. $CFCl + F_2 \rightarrow CF_2Cl + F$ *Slow*

iv. $2F \rightarrow F2$ *Slow*

$F_2 + CCl \rightarrow CF_2Cl$

The slowest step determines the rate of the reaction, therefore

$R = k[F_2][CFCl]$

$R = k[F_2][CCl][F]$

$R = k[F_2][CCl][F_2]^{1/2}$

$R = k[F_2][CCl][F_2]^{3/2}$

Overall order $= 1 + \frac{3}{2} = \frac{5}{2}$

Question Number	52.	Correct Option	d

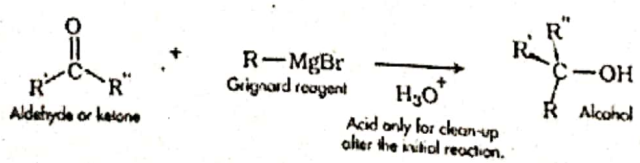
Explanation

Phenols can be prepared from haloarenes. Chlorobenzene is reacted with strong base such as sodium hydroxide to form a site of protonation. It forms sodium phenoxide and is treated with acid as proton source to form phenol.

Question Number	53.	Correct Option	c

Explanation

When the partial negative carbon in R–MgX is reacted with aldehyde, it forms an electron rich site where it can be protonated with water to form alcohol.



Question Number	54.	Correct Option	b

Explanation

To predict the shape of PO_4^{3-}, we must get how many lone pairs (LP) and bond pairs (BP) it has.

Total number of valence electrons : $\frac{5e^-}{1\,P\ atom} \times 1P\,\text{atom} + \frac{6e^-}{1\,O\ atom} \times 4O\ \text{atom}\ 3e^- = 32e^-$

Total number of valence electrons in octet : $\frac{8e^-}{1\,P\ atom} \times 1\,P\ atom + \frac{8e^-}{1\,O\ atom} \times 4O\ atom = 40e^-$

Total shared of covalent bonds = $8e^-(\frac{1\ bond}{2e^-}) = 4$ Covalent bonds

Total number of unshared electrons : $32e^- - 8e^- - 3e^- = 21e^-$ Draw to confirm

Total number of unshared electrons on branched atoms : $\frac{5^-}{1\,O\ atom} \times 4$ Oatom $= 20e^-$

Total number of unshared electrons on central atom : $21e^- - 20e^- = 1e^-$

$1e^-$ is not considered as lone pair in the central atom. So , the central atom needs to denate $1e^-$ to the 1 O atom . Hence , there are three single bonds and 1 double bond (4 BP) and 0 LP for PO_4^{3-}. The molecular shap with the 4 BP and 0 LP is Tetrahedral .

Question Number	55.	Correct Option	

Explanation

$K_2[Co(CN)_6]$ can be rewritten as $[Co(CN)_6]^{-2}$

$\overset{x}{Co}\overset{-1}{(CN)_6}]^{-2}$

$x + 6(-1) = -2$

$x = +4$

Question Number	56.	Correct Option	c

Explanation

When a chemical reaction involves gases in its reactants and products then the equilibrium k_c is replaced by k_p. The value of k_p can then be found using the partial pressures of the gases involved in the reaction.

Write the blanced chemical equation in order to get the k_p. Take note that in k_p only take the partial pressure of gases.

Reaction : $2ZnS\ (s) + 3O_2\ (g) \rightarrow 2\,ZnO\ (s) + 2\,SO_2\ (g)$

$k_p = \frac{Product}{Reactant}$

$k_p = \frac{[P_{SO_2}]^2}{[P_{O_2}]^3}$

Question Number	57.	Correct Option	c

Explanation

Nitrogen dioxide reacts with chlorine monoxide to form chlorine nitrate ($ClONO_2$ or $ClNO_3$) which is a very stable product and very well known as chlorine reservoir that plays a big role in the ozone depletion of north and south poles.

Question Number	58.	Correct Option	c

Explanation

Reaction : $HAc \rightarrow H^+ + Ac^-$

Initial : 1M 0 0

Change: 1(1-0.0005) 1(0.0005) 1(0.0005)

Equilibrium: 0.9995 0.0005 0.0005

$[OH^-] = \frac{k_w}{[H^+]} = \frac{1\times10^{-14}}{0.0005} = 2 \times 10^{-11}$

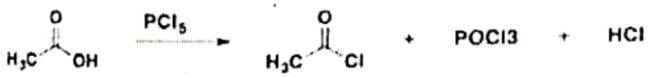
$pH = - \log [H^+] = - \log (0.0005) = 3.30$

$k_a = \frac{[H^+][Ac^-]}{[HAc]} = \frac{(0.0005)(0.0005)}{0.9995} = 2.5 \times 10^{-7}$

Question Number	59.	Correct Option	a b

Explanation

Acyl chloride, hydrochloric acid and phosphorus oxychloride are the products of the reaction of acetic acid and PCl_5.



Question Number	60.	Correct Option	c

Explanation

Friedel–Crafts alkylation is when benzene reacts with alkyl halide under aromatic electrophilic substitution reaction in the presence of Lewis acid to form alkyl benzene.

Question Number	61.	Correct Option	b

Explanation

Cycloalkane has a shorthand formula C_nH_{2n}. If n is equal to 5, then, there must be 10 hydrogen atoms.

Question Number	62.	Correct Option	d

Explanation

1. Sulfuric acid is a strong acid and the rest are weak acids. Therefore, the answer is H_2SO_4 (oil of vitriol).

Question Number	63.	Correct Option	b a

Explanation

Atomic radius increases down the group so as ionic radius. Atomic radius decreases across the period from left to right. However, the ionic radius will have different trend. Take caution that group 1 and 2 will have lesser ionic radius than some ions in groups 3 to 7. That is because of electron-electron repulsion, electron-nucleus attraction, and electron shielding. It does not follow the trend of atomic radius.

Question Number	64.	Correct Option	c

Explanation

$[Co(en)_3]^+$

Three ethylenediamine is chelated to cobalt. Therefore, the coordination number is 3.

Question Number	65.	Correct Option	b

Explanation

In 1951, halothane was first synthesized by C.W. Suckling with its anesthetic property. It is used as general anesthesia to induce loss of sensation and awareness of patients.

Question Number	66.	Correct Option	a

Explanation

To predict the structure of NH_4^+:.

Total number of valence eletrons : $\frac{5e^-}{1\ N\ atoms}$ $\frac{5e^-}{1\ N\ atoms}$ × $1\ N\ atom + \frac{1e^-}{1\ H\ atom} \times 4\ H\ atom - 1e^- = 8e^-$

Total number of valence eletrons in octet : $\frac{8e^-}{1\ N\ atoms} \times 1\ N\ atom + \frac{2e^-}{1\ H\ atom} \times 4\ H\ atom = 16e^-$

Total of shared electrons : $16e^- - 8e^- = 8e^-$

Total number of covalent bonds = $8e^-(\frac{1\ bond}{2e}) = 4$ covalent bonds

Total number of unshared electrons : $8e^- - 8e^- + 1e^- = 1e^-$ Draw to confirm

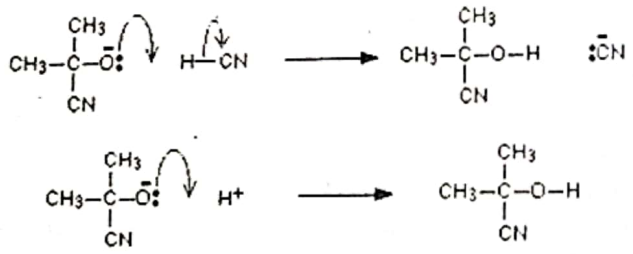
Total number of unshared electrons on branched atoms : $(\frac{Oe^-}{1\ H\ atoms}) \times 4$ H atom = Oe^-

Total number of unshared electrons on centralatom : $1e^- - 0e^- = 1e^-$

Question Number	67.	Correct Option	a

Explanation

When an aldehyde or ketone is treated with sodium cyanide and strong acid such as hydrochloric acid, it forms a cynohydrin. CN^- attacks the carbonyl group of aldehyde or ketone to form O^-. The acid protonates the electron rich site to form cynohydrin.



Question Number	68.	Correct Option	c

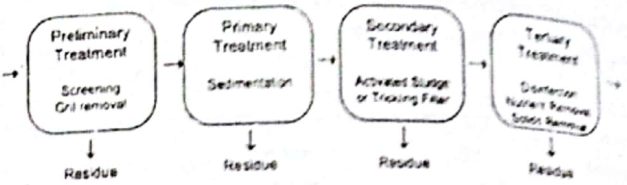
Explanation

This is simply an esterification process. When acetic acid is reacted with alcohol such as ethanol, it forms an ester and water. The ester formed in this reaction is ethyl ethanoate.

Question Number	69.	Correct Option	d

Explanation

The condensed process of wastewater treatment:



Question Number	70.	Correct Option	d

Explanation

Fluorine reacts with cold sodium hydroxide to form sodium fluoride, water, and oxygen difluoride.

$2F_2(g) + 2NaOH(aq) \rightarrow 2NaF(aq) + H_2O(l) + OF_2(aq)$

Question Number	71.	Correct Option	b

Explanation

$2NH3\ (aq) + H_3PO_4\ (aq) \rightarrow (NH_4)_2\ HPO_4\ (aq)$

Question Number	72.	Correct Option	b

Explanation

A coordination complex is a metal surrounded by a ligand and coordination number is a number of bound ligands.

Question Number	73.	Correct Option	c

Explanation

HEMATITE ORE is not pure iron. It consists of iron and other impurities. The strategy to solve this is to convert theoretical mass of iron to hematite (Fe_2O_3), so that we can calculate the percentage of pure hematite in the ore.

Molecular weight of Fe_2O_3=2(55.85)+ 3 (16) = 159.7 $\frac{kg}{mol}$

6.5 kg Fe$(\frac{1\ kmol\ Fe}{55.85\ kg\ Fe})(\frac{1\ kmol\ of\ Fe_2O_3}{2\ kmol\ Fe})(\frac{159.7\ kg\ of\ Fe_2O_3}{1\ kmol\ of\ Fe_2O_3}) =$ $9.29\ kg\ of\ Fe2O3$

% Fe O= $\frac{9.29\ kg\ of\ Fe2O3}{10\ kg\ of\ Hematite\ Ore}$ = 92.9 %

Question Number	74.	Correct Option	a

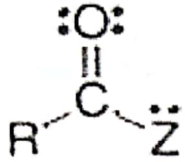
Explanation

Ligands are called donor atoms because it acts as Lewis base which donates lone pairs of electrons.

Question Number	75.	Correct Option	c

Explanation

The dehydration of ethanol will produce an unsaturated hydrocarbon called ethene. Here is the mechanism:



Question Number	76.	Correct Option	d

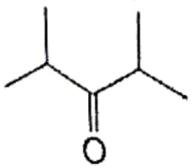
Explanation

Electrophiles are not negatively charged but they are positively charged or neutral with vacant slots of orbitals that are attracted to nucleophiles.

Question Number	77.	Correct Option	a

Explanation

Iodoform test is used to distinguish a ketone with methylcarbonyl group. To qualify for this test, the compound must have 3 alpha hydrogen in methyl group and a ketone group. Among the following choices, the compound that will have a negative iodoform test is



It doesn't have a 3 alpha hydrogen atoms

Question Number	78.	Correct Option	d

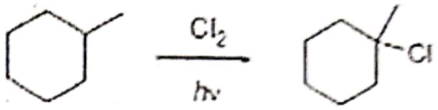
Explanation

All carbon atoms can bond to the maximum number of four bonds. A single bond chain of carbon is saturated. A double bond chain of carbon is unsaturated. It can form single, double, and triple bonds with other carbon atoms.

Question Number	79.	Correct Option	

Explanation

The radical halogenation of cycloalkane is simple especially with chlorine. The weaker the C–H bond, the more readily the hydrogen atom is removed. Third degree of C–H is noted as the weakest C–H bond and it can be found in the given reactant. Chlorine atom must react with this cycloalkane to form:



Question Number	80.	Correct Option	c

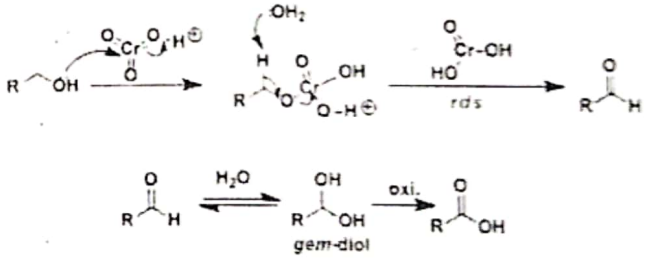
Explanation

$S(s) + O_2(g) \rightarrow SO_2(g)$

Question Number	81.	Correct Option	b

Explanation

Carboxylic acid can be prepared from primary alcohols via Jones reagent. Take note that Jones reagent only reacts with alcohols creating a rapid oxidation. The chromic acid from Jones reagent solution is attacked by OH- in primary alcohol to form an aldehyde. Under a quick reaction, the H+ in water will then protonate the gem-diol to form carboxylic acid.



Question Number	82.	Correct Option	

Explanation

There are approximately 100000 ozone molecules are removed by chlorine atom in the stratosphere.

Question Number	83.	Correct Option	a

Question Number	84.	Correct Option	b

Explanation

The octet of Hydrogen atom to become stable is the Helium atom which consists of 2 valence electrons.

Question Number	85.	Correct Option	a

Explanation

$Zn(s) + Hg^{2+} \rightarrow Zn^{2+} + Hg(l)$

$Zn^{2+}(aq) + 2e^- \rightarrow Zn(s)$ E^0= -0.76V

$Hg^{2+}(aq) + 2e^- \rightarrow Hg(l)$ E^0= +0.86V

Zn has the negative value. Therefore, it must occure in the anode.

Anode: $Zn(s) \rightarrow Zn^{2+}(aq) + 2e^-$

Cathode: $Hg^{2+}(aq) + 2e^- \rightarrow Hg(l)$

Overall: $Zn(s) + Hg^{2+} \rightarrow Zn^{2+} \rightarrow Zn^{2+} + Hg(l)$

$E^0_{cell} = E^0_{cathode} - E^0_{anode}$

$E^0_{cell} = +0.86 - (-0.76V)$

$E^0_{cell} = +1.62V$

Question Number	86.	Correct Option	a

Question Number	87.	Correct Option	c

Explanation

Aniline, a benzene amine, is treated with an acid such as HCl with $NaNO_2$ to form diazonium salt. It is then hydrolyzed with warm water to form phenol.

Question Number	88.	Correct Option	c

Explanation

Phenols can also be prepared from isopropyl benzene (cumene). To make a cumene, benzene and propylene are compressed at a certain pressure in the presence of Lewis acid catalyst to give an alkyl benzene. This process is called Friedel-Crafts alkylation. When cumene is produced, it is oxidized in air to form a benzene hydroperoxide and is then treated with diluted acid as proton source to form phenol.

Question Number	89.	Correct Option	b

Explanation

The total mass of fish before drying $= 100 \times 10g = 1000g$

The total mass of fish after drying $= 100 \times 4.3g = 430g$

The total mass of water evaporated $= 1000g - 4300g = 570g$

Specific heat of water is $4.184 \frac{J}{g.^0C}$

$-\Delta H = Q = mC_p\Delta T$

$-\Delta H = Q = 570g\,(4.184 \frac{J}{g.^0C})(40 - 23)^0C = 40542.96J$

$-\Delta H = Q = 40542.96J\,(\frac{1kJ}{1000J}) = 40.54kJ$

Question Number	90.	Correct Option	b

Explanation

When an amino acid gains a proton in dipolar state, The pH becomes low leaving the ammonium ion charged.

Question Number	91.	Correct Option	a

Explanation

Taq polymerase is a DNA polymerase enzyme which is thermostable or temperature insensitive. it is extracted from a bacteria, Thermus aquaticus, which lives in hot springs.

Question Number	92.	Correct Option	a

Explanation

cystic fibrosis is being treated using liposomes coated with gene that cures the disease.

haemophilia is treated through implantation of clotting factor genes in abdominal cavity in the form of organoids.

Parkinson's disease is treated by grafting of dopamine producing cells

Coronary artery angioplasty is done through balloon coated with plasmid that contains gene for vascular endothelial growth factor. this expression of gene promotes the proliferation of blood vessels to bypass the obstructed area.

Question Number	93.	Correct Option	a

Explanation

Lamarck is best known for his theory of Inheritance of Acquired Characteristics.

Question Number	94.	Correct Option	c

Explanation

Continuous varying traits mean that there is a variety of different forms in which the trait can exist. for example, height has wide range. whereas, you can either roll tongue or cannot. it is not continuously varying trait.

Question Number	95.	Correct Option	a

Explanation

fact. gases in the atmosphere increase the temperature. when the concentration f these gases increases, temperature also increases. this leads to global warming.

Question Number	96.	Correct Option	b

Explanation

Lock and Key states that there is no change needed for active site. Only a certain type of substrate will fit.

However induced fit says the active site will change to help to substrate fit.

In lock and key the active site has one single entry however in induced fit the active site is made of two components.

Question Number	97.	Correct Option	d

Explanation

Small and nonpolar molecules can freely pass through the membrane, but charged ions and large molecules such as proteins and sugars are not allowed to pass. this property is called selective or differential permeability

Question Number	98.	Correct Option	a

Explanation

Explanation: definition

Water always moves to the region where concentration of solute is high but water amount is low.

Question Number	99.	Correct Option	a

Explanation

Depolarization and Repolarization

- When a neuron receives sufficient stimulation to reach the membrane threshold, successive sodium gates along the entire neuron membrane open
- The opening of the sodium gates allows sodium ions to move into the neuron
- The movement of sodium ions into the neuron causes the membrane potential to change from-70mV to +40mV
- As the membrane potential becomes more positive, sodium gates begin to close.
- At the end of depolarization, the sodium gates are all closed
- At the end of the depolarization phase, potassium gates begin to open, allowing K^+ ions to leave the neuron.
- These potassium gates are activated at the positive membrane potential value of about +40mV
- The movement of K ions out of the neuron produces a change in membrane potential such that the potential becomes more negative.
- Following repolarization, the potassium gates close slowly
- During the conduction of a nerve impulse, each successive section of a neuron's membrane will undergo an action potential consisting of depolarization followed by repolarization.

Question Number	100.	Correct Option	c

Explanation

During development of bone, the osteoclasts invade and dissolve the cartilage. Osteoblasts replace it with bone.

As bones grow, the bone is hardened and osteoclasts get entrapped in the matrix

Question Number	101.	Correct Option	d

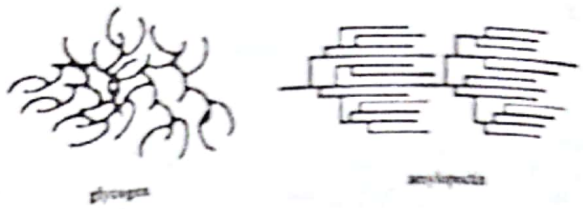
Explanation

Nucleus has chromosomes in it. Chromosomes are composed of DNA and proteins. RNA isfoundmainly in the cytoplasm of the cell although it is usually synthesized in thenucleus.

Question Number	102.	Correct Option	b

Explanation

Glycogen is similar in structure to amylopectin, but branches are more frequent in glycogen. they are both made of alpha glucose molecules and have 1,4 and 1,6 glycosidic bonds.



glycogen

Hydrogen bonds between adjacent cellulose molecules allow them to form strong fibres, which suite them to their role as the main structural component of plant cell walls.

Question Number	103.	Correct Option	c

Explanation

Fact

Question Number	104.	Correct Option	a

Explanation

Xerophytes are plants which grow in regions where there is little liquid water. They have adaptations to survive in this region. They have adapted to reduce the rate of transpiration to conserve water.

Question Number	105.	Correct Option	b

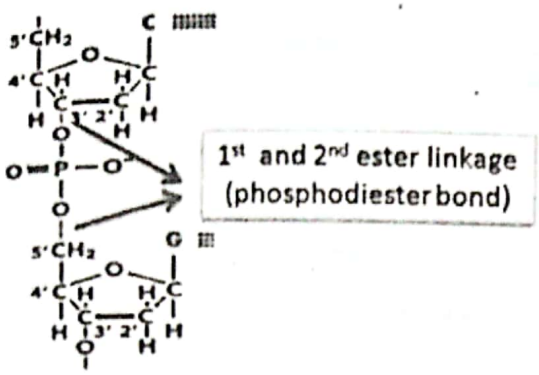
Explanation

Ileum is the last part of small intestine. It is the portion where absorption of the digestion products takes place into the blood stream. The surface of ileum is provided with finger like projections called villi that aid in absorption by increasing surface area.

Question Number	106.	Correct Option	a

Explanation

a chemical bond of the kind joining successive sugar molecules in a polynucleotide



Question Number	107.	Correct Option	b

Explanation

fact.

Question Number	108.	Correct Option	a

Explanation

As dwarf plant is recessive here, in F1 no dwarf plant will be obtained.

Cross of homozygous plants

Parent 1 = homozygous tall

Parent 2 = homozygous dwarf

TT x tt

	t	t
T	Tt	Tt
T	Tt	Tt

All the plants produced (F1) are heterozygous tall. There is no dwarf plant. So frequency of dwarf plant is zero.

Self fertilization of F1 generation

F1 generation is then self-fertilized to get F2 generation.

Tt x Tt

	T	t
T	TT	Tt
t	Tt	tt

F2 generation has 3 tall plants and one dwarf plant. Frequency of dwarf plant is 0.25.

Question Number	109.	Correct Option	b

Explanation

Osteoblasts: bone forming cells

Osteoclasts: bone dissolving cells

Osteocytes: mature bone cells

Question Number	110.	Correct Option	c

Explanation

Fact. They physically move along an mRNA molecule, catalyze the assembly of amino acids into protein chains. They also bind tRNAs and various accessory molecules necessary for protein synthesis.

Question Number	111.	Correct Option	c

Explanation

Fact

Question Number	112.	Correct Option	a

Explanation

genotype of co dominant individual is Rr. if we self fertilise them, the result obtained would be RR, rr, Rr, and Rr. Rr is codominant individual.

Question Number	113.	Correct Option	b

Explanation

Anopheles — a mosquito, female anopheles transmits plasmodium that causes malaria

Tsetse fly — transmits trypanosoma that causes sleeping sickness and skin diseases

House fly — contaminates food and cause cholera and hepatitis

Question Number	114.	Correct Option	a

Explanation

Plasmodesmata is the cytoplasmic projections that extend through pores in adjacent cell walls.

Symplast is the system of interconnected protoplast in the root cells. The neighboring cells are connected through plasmodesmata.

Question Number	115.	Correct Option	a

Explanation

Explanation: skull is made of cranium and facial bones.

Cranium: 8 bones; parietal and temporal are paired. Occipital, sphenoid, and ethmoid are unpaired

Facial bones: 14 bones; maxilla, nasal, lacrimal, palatine, and inferior concha are paired. Mandible and vomer are unpaired.

Question Number	116.	Correct Option	d

Explanation

fact

Process of sexual reproduction of fungi

1. hyphae of 2 genetically different but compatible mating types come together.
2. fusion of cytoplasm
3. fusion of nuclei
4. zygote produces haploid spores through meiosis
5. spores germinate to produce new hyphae

Question Number	117.	Correct Option	d

Explanation

Xerophytes are plants which grow in regions where there is little liquid water. They have adaptations to survive in this region. They have adapted to reduce the rate of transpiration to conserve water. Cactus is one of the xerophytes.

To conserve water, cactus

Shed its leaves

Stems are photosynthetic

Stems store water

Question Number	118.	Correct Option	a

Explanation

fact

Question Number	119.	Correct Option	b

Explanation

Fact.

Question Number	120.	Correct Option	c

Explanation

Explanation:

Structures and functions of heart	
Structure	Function
Septum	Prevents mixing of oxygenated blood and deoxygenated blood
Aorta	Carries oxygenated blood to the organs
Pulmonary artery	Carries deoxygenated blood to the lungs from the heart
Pulmonary vein	Carries oxygenated blood from the lungs to the heart
Superior vena cava	Returns deoxygenated blood from head and arms to the heart
Inferior vena cava	Returns deoxygenated blood from lower limbs and organs to the heart

Question Number	121.	Correct Option	a

Explanation

The inner membrane is loaded with proteins which are involved in electron transport and ATP synthesis.

Question Number	122.	Correct Option	b

Explanation

XX-XY system	XX-XO system	ZZ-ZW system
XX= female	XX= female	ZZ = male
XY= male	XO= male	ZW = female

ZZ-ZW birds, some reptiles and some insects

XX-XO number of insects including grass hoppers and crickets

XX-XY mammals and some insects

Question Number	123.	Correct Option	d

Explanation

Explanation: Fact. Rate of transpiration increases with the increase in temperature for every 10°C, the rate is doubled. At high temperatures of 45°C or more, the transpiration stops.

Question Number	124.	Correct Option	c

Explanation

Body cavity type	Description	Phyla that belong to this class
Aceolom	Without true body cavity	Platyhelminthes
Pseudoceolom	Body cavity is not lined with mesodermal cells	Aschelminthes
Ceolom	body cavity has a mesodermal lining	Mollusca, Arthropoda, Annelida

Question Number	125.	Correct Option	a

Explanation

pyrosis is a painful burning sensation in the chest, also known as heart burn. It occurs due to the back flush of acidic food product chime into the esophagus.

This condition arises due to overeating, lying down immediately after having food, over consumption of alcohol, caffeine, or smoking.

Question Number	126.	Correct Option	c

Explanation

lichen crustose surface becomes wet due to rain and dewdrops. it is not always dry.

Question Number	127.	Correct Option	b

Explanation

fact. ATP is synthesised through oxidative phosphorylation.

Question Number	128.	Correct Option	c

Explanation

The flaps of tricuspid and bicuspid valves are attached ith fibrous chords called cordae tendinae.

Tricuspid valve : valve between right atrium and right ventricle

Bicuspid valve : valve between left atrium and left ventricle

Question Number	129.	Correct Option	d

Explanation

wax is non polar and does not allow the water to absorb. it protects plants from water loss and abrasive damage.

some insects also secrete wax.

Question Number	130.	Correct Option	d

Explanation

radiation: gamma rays are used to kill microbes

dry heat: oxidation of chemical constituents

moist heat or steam: coagulation of proteins cause death of bacteria

filtration: heat sensitive compounds like antibiotics, fluids, sera are sterilised using membrane filters

Question Number	131.	Correct Option	a

Explanation

Fact.

Candidiasis is an infection including oral and vaginal thrush.

Lovastatin is drug used for lowering cholesterol level.

Aspergillus is fungus that causes invasive aspergillosis.

Question Number	132.	Correct Option	c

Explanation

fact

The baby passes out of his mother through vagina or birth canal

Question Number	133.	Correct Option	b

Explanation

Xerophytes are plants which grow in regions where there is little liquid water. They have adaptations to survive in this region. They have adapted to reduce the rate of transpiration to conserve water.

Stomata are located on lower portion of leaves of xerophytes. This minimizes transpiration and in this way, water is conserved.

Question Number	134.	Correct Option	b

Explanation

When the sugar level increases, the water moves into the guard cells. The guard cells become turgid and as the result the pore between the guard cells appear.

Question Number	135.	Correct Option	a

Explanation

Rh incompatibility occurs when an Rh-negative mother is impregnated by an Rh-positive father. The result can be an Rh-positive baby. In such a case, the baby's Rh antigens will be perceived as foreign invaders, the way viruses or bacteria are perceived. The mother's blood cells attack the baby's as a protective mechanism that can end up harming the child.

Question Number	136.	Correct Option	a

Explanation

Explanation: lymph nodes have macrophages and lymphocytes which destroy foreign invaders such as viruses and bacteria. Lymph is filtered this way.

Spleen filters blood by exposing it to macrophages and lymphocytes.

Question Number	137.	Correct Option	b

Explanation

Collagen is the protein of bones.

Keratin is the protein of hair.

Globulin and albumin are present in blood.

Question Number	138.	Correct Option	a

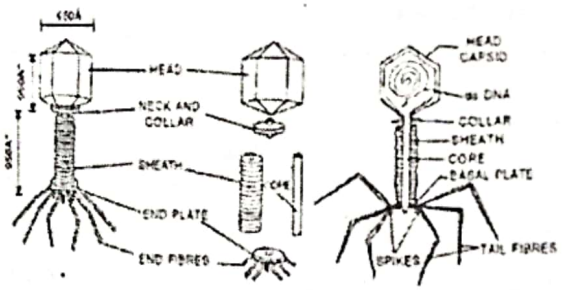
Explanation

	Sensory neurons	Interneurons	Motor neurons
Cell body	• Inside CNS • At the side with no dendrites	Inside CNS	• Outside CNS • At the terminal with dendrites
Dendrites	• Long • Outside CNS • Synapse with receptors	• Short • Inside CNS • Synapse with other neurons	• Short • Inside CNS • Synapse with effectors
Axons	• Short • Inside CNS • Synapse with interneurons and other neurons in CNS	• Short • Inside CNS • Synapse with other neurons	• Long • Outside CNS • End in effectors
Functions	• Transmit impulses from receptors to CNS	• Connect sensory and motor neurons to form nerve circuit	• Transmit impulses from CNS to effectors

Question Number	139.	Correct Option	c

Explanation

tail fibres are designed to attach to the host cell in order to penetrate the tail i.e. DNA which is enclosed in the head region.



Question Number	140.	Correct Option	b

Explanation

Calcium phosphate is the mineral of the bone.

Collagen is a protein that is found throughout the body specifically in skin and bones. It plays role during bone formation.

Collagen gets hardened by deposition of calcium phosphate during bone formation.

Question Number	141.	Correct Option	b

Explanation

Symplast is the system of interconnected protoplast in the root cells. The neighboring cells are connected through plasmodesmata. It is the cytoplasmic projections that extend through pores in adjacent cell walls.

Mostly sugar travels through this pathway.

Apoplast is the system of adjacent cell walls continuous throughout the plant roots. It becomes discontinuous in the endodermis of roots due to the presence of casparian strips.

Question Number	142.	Correct Option	a

Explanation

Explanation: there are 2 lymph ducts:

1. lymphatic duct, drains the upper right portion of the body, returninglymphto thebloodstreamvia the right subclavian vein.
2. Thoracic duct, drains the rest of the body into the left subclavian vein

Question Number	143.	Correct Option	d

Explanation

fact

Question Number	144.	Correct Option	a

Explanation

oogonia in germ cells – mitosis – primary oocytes (enclosed in group of follicle cells)

Primary oocyte – meisosi – haploid secondary oocyte + first polar body

Question Number	145.	Correct Option	b

Explanation

Epiglottis is a cartilage that is muscularly controlled. It serves as a lid that automatically covers the larynx during the act of swallowing.

Other respiratory portions that are cartilaginous

i. Larynx
ii. Trachea
iii. Bronchi

Bronchioles lack cartilages, they are composed of circular smooth muscles

Question Number	146.	Correct Option	a

Explanation

Methane is produced in the guts of ruminant livestock as a result of methanogenic microorganisms.

Question Number	147.	Correct Option	b

Explanation

Baroreceptors are blood pressure receptors and are present in carotid and aortic artery.

Question Number	148.	Correct Option	a

Explanation

Trypanosoma causes sleeping sickness.

Plasmodium causes malaria

Female anopheles carries plasmodium

Question Number	149.	Correct Option	c

Explanation

Sphincter muscles contract to close the stomach entrance and thus prevent the contents of the stomach from moving back into the esophagus.

Question Number	150.	Correct Option	a

Explanation

Fact

Question Number	151.	Correct Option	a

Explanation

Carbon dioxide and temperature are inversely proportional whereas pH is directly proportional to the oxygen carrying capacity of the blood.

Decreased pH results in increased production of H+ ions which combine with protein part of the hemoglobin, decreasing the binding capacity of hemoglobin with oxygen.

Question Number	152.	Correct Option	a

Explanation

fact

coelom is a cavity between body wall and alimentary canal and is lined by mesoderm. mesoderm splits into 2 layers

1. parietal layer which underlines the body wall
2. visceral layer which covers alimentary canal

Question Number	153.	Correct Option	a

Explanation

According to Hardy–Weinberg theorem, allele and genotype frequencies in a population will remain constant from generation to generation in the absence of other evolutionary influences.

Question Number	154.	Correct Option	b

Explanation

Transpiration pull is a type of suction which pulls water from roots to leaves.

Question Number	155.	Correct Option	d

Explanation

Glossina is the biological name of tsetse fly which transmits trypanosoma in humans

Question Number	156.	Correct Option	b

Explanation

Explanation: inhalation takes place only when the atmospheri pressure is greater than the alveolar pressure. This is mechanism of inhalation.

Airflows from the higherpressureat the mouth down thelungsinto the lowerpressure inthe alvcoli.

Question Number	157.	Correct Option	d

Explanation

fact. cellulose forms cell wall of plant cells. it is most abundant carbohydrate. starch is second most abundant carbohydrate.

Question Number	158.	Correct Option	a

Explanation

Fact. Gene is the part of DNA which consists of specific sequence of the nucleotides. This sequence of nucleotides actually determines the characters which are passed to the offspring.

Question Number	159.	Correct Option	b

Explanation

Mendel's law of segregation, states that allele pairs separate or segregate during gamete formation, and randomly unite at fertilization.

the offsprings obtained after test cross verify the principle of segregation of alleles.

Question Number	160.	Correct Option	e

Explanation

Pancreatic juice contains a number of enzymes includingtrypsinogen, chymotrypsinogen, elastase, carboxypeptidase,pancreaticlipase, nucleases and amylase.

It also contains bicarbonate ions in large quantities.

Question Number	161.	Correct Option	b

Explanation

Preposition "amid" means confined by or in the middle of.

Usage: *Amid financial crisis, he was able to buy himself a new car.*

Preposition "against" implies in opposition with.

Usage: *ABC college will play a hockey match agianst XYZ college.*

Preposition "per" is used to express price, measurement etc, in simple it means for each.

Usage: *60 kilometre per hour means, 60 kilometre of distance will be covered in an hour if I drive at a speed of 60.*

Preposition "without" implies lacking something.

Usage: *Our team can not win cricket match without Azeem because he is the only all-rounder of our team.*

Question Number	162.	Correct Option	c

Explanation

It is a simple present tense. The sentence involves the use of collective noun, team. If the parts of a collective noun are in agreement, then it is dealt as a singular. In case of disagreement, it is treated as plural.

In the clause above the team members are not in agreement therefore, treat the collective noun as plural. Has is used with singular nouns. Have is used with plural nouns.

Will have can used in future perfect continuous tense.

Will is used in simple future tense.

Hence,have is the most appropriate.

Question Number	171.	Correct Option	d

Explanation

-Do and does are the present tense of the verb.

- Use *do* with plural noun formsand personal pronouns such as *You,They, We.*
- Use *does*with third person singular pronouns such as*He, She, It and* with other singular nouns such as*Someone, Everyone.*
- Did is the past form of do and does.
- Will is used in all types of future tenses.

Hence, does is the right choice.

Question Number	172.	Correct Option	c

Explanation

- Petulant means to starts acting like a child and become an irritating person.

-Angry means to get annoyed.

-Sad means to experience unhappiness.

-Childishly irritable means the ones who act like a child and irritate other people.

-Ignorant means the one who is unknown to others.

So the suitable answer is childishly irritable.

Question Number	173.	Correct Option	

Explanation

- Stimulate means to arouse or activate.

Sample sentence: *Government plans to cut taxes in order to stimulate growth.*

-Decrease means to reduce.

Sample sentence: *The amount of under ground water has decreased.*

-Encourage is to motivate someone.

Sample sentence: *We should encourage people to work.*

-Stop means to put an end.

Sample sentence: *You should stop this nonsense.*

-Stagnant means static, dull or inactive.

Sample sentence: *His career growth is stagnant because he does not work hard.*

Therefore, encourage is closest in meaning to stimulate.

Question Number	174.	Correct Option	c

Explanation

- Outmeans away from a place.

Usage: *She ran out towards the park.*

- Overimplies above something.

Usage: *I have placed the sign board over the door of your office.*

- Throughout means during the whole period of time of something.

Usage: *Aleem has been struggling throughout his life.*

-Through means from one end of something to another.

Usage: *They ran fast through the forest.*

Hence,throughoutis the most suitable answer.

Question Number	175.	Correct Option	b

Explanation

- Balk means refuse to comply.

Sample sentence: I balked atthe arguements provided by sales manager since he was distorting sale facts.

-Action means something done.

Sample sentence: The goverment should take prompt actions after the flood to accomodate the effected population.

-Disobey means to refuse to go along.

Sample sentence:What a disgrace, he always disobeys his parents.

- Help means to give assistance.

Sample sentence: Ali is a kind person, he helps everyone.

-Obedient means to listen to others.

Sample sentence: Ali is a very obedient student, he does what hi

teachers ask him to do.

So the closest word in meaning to balk is disobey.

Question Number	176.	Correct Option	b

Explanation

- On is used with dates or with singular dates of week.

- In is used to describe something that is enclosed in it.

-At is used with particular points of clock, day or week.

-From shows time or point of when something starts.

Therefore,atis the most appropriate preposition to fill in the bla

Question Number	177.	Correct Option	a

Explanation

-Defame means to slander.

Sample sentence: His defamatory remarks about his seniors were ridiculous.

- Malign means to speak evil of others.

Sample sentence: *People who malign others are usually insecure of them that is why they speak evil about them.*

- Praise means to appreciate.

Sample sentence: *Officer was praised by his senior for his hardwork.*

-Beat means to hit someone.

Sample sentence: *Angry mob beated the pedestrians who tried to stop them.*

Hence, option A is correct.

Question Number	178.	Correct Option	b

Explanation

- On is used with special dates, or with singular day of week to refer to one occasion.

Usage: *I will wear suit on your wedding.*

-In is used to indicate location or position inside something.

Usage: *Put your mobile in your pocket.*

-From is used to show time or point of when something starts.

Usage: *My functions starts from 1 January 2019.*

-At is used with particular points of clock, day or week with special celebration.

Usage: *Lets meet at 5pm.*

Hence,from is the suitable answer.

Question Number	179.	Correct Option	c

Explanation

This is a present continuous tense and we use 'are' in it.

Had is used in past perfect tense.

Have is used in present perfect tense.

Will is used in future indefinite tense.

Question Number	180.	Correct Option	b

Explanation

-Preposition 'With'is used to describe the presence of somebody.

Usage: *I am with my friend right now.*

- Preposition 'From' is used to explain the cause of something happened.

Usage: *He has an allergy from roses.*

- Preposition 'Of' is used to show possession, belonging or origin.

Usage: *He is a cousin of mine.*

- Preposition 'In' is used to indicate the location or position inside something.

Usage: *What is in this room?*

Hence,from is the suitable answer.