Alhamdulillah 100% NMDCAT-2020 Test from
Engeecon Academy's Online Account (Lectures + Tests)

PHYSICS

1. If during circular motion, tangential velocity of a body becomes double then centripetal force becomes:

A. Double.

B. One half.

C. Four times. (Correct)

D. One fourth.

2. Under what condition an object will have zero displacement but non zero distance?

A. Linear motion.

B. Circular motion. (Correct)

C. Random motion.

D. Oscillation

3. Which one of the following properties is not exhibited by the longitudinal waves?

A. Interference.

B. Reflection.

C. Diffraction.

D. Polarization. (Correct)

4. The speed of sound in air is 332m/s. The speed of sound at 22 °C will be:

A. 345.2 m/s (Correct)

B. 340 m/s

C. 350 m/s

D. 330 m/s

5. Astronomers calculate speed of distant stars and galaxies using which of the following phenomena?

A. Beats.

B. Interference.

C. Super position principle.

D. Doppler effect (Correct)

6. In a ripple tank, 40 waves pass through a certain point in 1 second. If the wavelength of the wave is 5 cm, then speed of the wave is:

A. 0.5 ms^{-1}

B.1 ms^{-1}

C. 1.5 ms^{-1}

D. 2 ms^{-1} (Correct)

7. In which process the entire of heat supplied to the gas is converted to the internal energy of the gas?

A. Isochoric process. (Correct)

B. Isobaric process.

C. Isothermal process.

D. Adiabatic process.

8. The internal energy of a system during an isothermal process:

A. Decreases.

B. Increases.

C. Becomes zero.

D. Remain constant. (Correct)

9. If the potential at a point which is 1m from a charge is 1volt, them the potential at a point which is 2m from the same charge will be:

A. 2v

B. 1v

C. 0.5v (Correct)

D. 3v

10. The values of electric intensity will_____ due to the presence of dielectric medium:

A. Increase.

B. Increase exponentially.

C. Decrease. (Correct)

D. Remain same.

11. The slope of distance –time graph will always be:

A. Negative.

B. Positive. (Correct)

C. Zero .

D. Maximum.

12. At what angle of projection of a projectile the range becomes half of its maximum value?

A. 15° (Correct)

B. 20°

C. 30°

D. 40°

13. If we drop an object, its initial velocity is zero. How far will it fall in time't'?

A. $9.8t^2$

B. $4.9t^2$ (Correct)

C. $0.49t^2$

D. $98t^2$

14. The Newton-second is unit of:

A Work..

B. Power.

C. Impulse. (Correct)

D Momentum. (2nd Best Option) (Hopefully they will consider it Correct too)

15. A 1.75m heighted weight-lifter raises weight with a mass of 50kg to a height of 0.5m above his head. How much work is being done by him?
$(g = 10ms^{-2})$

A. 2125J

B. 2500J

C. 50J

D. 1225J (Correct)

Correct option is Missing, Correct Answer is 1125J and D is close to it

16. What is the speed of 2.0 kg metallic bob at mean position of a simple pendulum, when releases from its extreme position 0.5m high? ($g = 10ms^{-2}$)

A. 3.16 ms^{-1} (Correct)

B. 10 ms^{-1}

C. 100 ms^{-1}

D. 50 ms^{-1}

17. When the speed of your car is halved, by what factor does its kinetic energy decreases?

A. 1/2

B. 1/4 (Correct)

C.1/8

D.1/6

18. Which one of the following force in non conservative force?

A. Frictional force. (Correct)

B. Gravitational force.

C. Electric force.

D. Elastic spring force.

19. The earth rotates on its axis once a day. Suppose, by some process the earth contracts so that its radius is only half as large as at present , then how long the earth will take to complete its rotation?

A. 24 Hours

B. 18Hours

C. 6Hours (Correct)

D. 12Hours

20. 1 radian is equal to:

A. 57.1° B. 57.2°

C. 57.3° (Correct) D. 57.4°

21.In transmission from grid station, power losses are minimized* by:

A. Increasing current.

B. Decreasing current. (2nd Best Option)

C. Increasing resistance.

D. Increasing voltage (Correct)

Hint: Power companies use step-up transformers to **boost the voltage** to hundreds of kV **before it is transmitted down a power line**, reducing the current and minimizing the power lost in transmission lines

22. The domestic electricity supple has a frequency of:

A. 150Hz

B. 100Hz

C. 50Hz (Correct)

D. 25Hz

23. PIV stands for:

A. Positive inverse charge.

B. Power integrated voltage.

C. Peak inverse voltage. (Correct)

D. Peak integrated voltage.

24. In full wave rectification, the diodes are used:

A. 1

B. 2 (Correct)

C. 3

D. 4 (According to Other Province Text books) (Hopefully they will consider it Correct too)

25. The wavelength associated with an electron is of the order of:

A. Visible light.

B. X-rays. (Correct)

C. Radio waves.

D. Infrared.

26. Which photon carries the most energy?

A. Blue.

B. Violet. (Correct)

C. Red.

D. Green.

27.Which one of the following series lies in the ultraviolet region?

A. Balmer series.

B. Pascher series.

C. Lyman series. (Correct)

D. Brcaket series.

28. The main difference between X-rays and γ rays is:

A. Frequency.

B. Wave length.

C. Energy.

D. Origin. (Correct)

29. There are initially 400 atoms in a radioactive sample. What of atoms after 3half-life?

A. 400

B. 200

C. 50 (Correct)

D. 25

30. While using radiation therapy, cancerous thyroid is treated with_____ radioisotope:

A. Carbon.

B. $235_{uranium}$

C. Thorium.

D. Iodine-131. (Correct)

31. In capacitors, energy is stored in the form of:
A. Gravitational energy.
B. Kinetic energy.
C. Electric intensity (Correct)
D. Magnetic induction

32. Ohm time's farad is equivalent to:
A. Time. (Correct)
B. Charge.
C. Distance.
D. Capacitor.

33. One kilowatt-hours is commonly termed as one commercial unit of electric energy which is equal to:
A. 3.6×10^5J
B. 3.6×10^6J (Correct)
C. 3.6×10^4J
D. 3.6×10^3J

34. When a wire is compressed and its radius becomes 2R then its resistance will be:
A. 16R
B. 4R
C. 1/16R (Correct)
D. 1/4R

35. One of the following is an Ohmic device:
A. Filament bulb.
B. Semiconductor diode.
C. Transistor.
D. Copper wire. (Correct)

36. The change in resistance of metallic conductor at temperature below 0°C is:

A. Non linear.

B. Curve.

C. Linear. (Correct)

D. Curvilinear.

37. When current are flowing through two long parallel wires in same direction electric field between them is :

A. Strong.

B. Weak.

C. Remains constant. (Correct)

D. Infinite.

38. Magnetic flux is maximum when angle between magnetic field and vector area is:

A. 0° (Correct)

B. 90°

C. 180°

D. 45°

39. Transformer is device which steps up or steps down the input:

A. Current.

B. Voltage. (Correct)

C. Energy.

D. Power.

40. If a stationary bar magnet is placed near a coil at rest so maximum lines of force passes through the coil, the galvanometer shows:

A. Maximum current.

B. Minimum current.

C. No current. (Correct)

D. Intermediate value of current.

41. Alkyl Halides involving –C-X bond breakage and –C-Nu bond formation simultaneously would follow the mechanism.

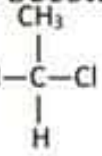
A. S_{N1}

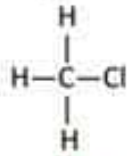
B. S_{N2} (Correct)

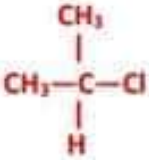
C. E_1

D. E_2

42. Secondary Alkyl Halides is:

A. 

B. 

C.  **(Correct)**

D. CH_3Cl

43. R-X on reaction with alcohols forms:

A. R-OH

B. ROR (Correct)

C. R-X-OH

D. RH

44. IUPAC name of $C_6H_5O(CH_3)_2$ is: (will do correction in Online session soon)

A. 2-Methyl-3-Hexanone

B. 2,6 – Dimethyl cyclohexanone (Correct)

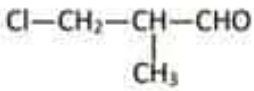
C. 3-Methyl cyclohexanone

D. 4-Methyl-3-hexanone

45. Phenol is known as:
A. Carpolic acid
B. Carbonylic acid
C. Carbolic acid (Correct)
D. Carbolylic acid

46. Phenol is more acidic than alcohols because of the following reason:
A. Delocalization of negative charge in the OH group
B. Delocalization of positive charge on the carbon atom in ring
C. Delocalization of negative charge in the ring (Correct)
D. Delocalization of positive charge in the OH group

47. The common name of the following aldehyde is:

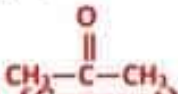


A. α – methyl – γ – chloro Propionaldehyde
B. β – *Chloro* – γ – methyl Propionaldehyde
C. β – *Chloro* – α – methyl Propionaldehyde (Correct)
D. β – *methyl* – α – Chloro Propionaldehyde

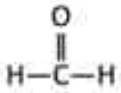
48. Which of the following reagent is use to separate and purify carbonyl and non-carbonyl compounds?
A. HCN
B. $BrMgCH_3$
C. $NaHSO_3$ (Correct)
D. H_2O

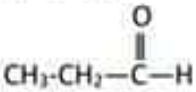
49. Secondary alcohol is the product of reduction of which carbonyl compound?

A. 



B. (Correct)

C. 

D. 

50. Which of the following is the strongest acid?

A. Propanic acid

B. Flouroethanoic acid

C. Trichloroethanoic acid (Correct)

D. Nitroethanoic acid

51. Hydrolysis of acyl chloride results in the formation of:

A. Acid anhydride

B. Carboxylic acid (Correct)

C. Amides

D. Esters

52. The exact reactivity order for carboxylic acid derivatives is:

A. Anhydride > Acylchloride > ester

B. Ester > Anhydride > Acylchloride

C. Amide > Acylchloride > ester

D. Acylchloride > Anhydride > ester (Correct)

53. Based on the physio-chemical properties, protiens may be classified into the following types:

A. Simple protiens

B. Compound protiens

C. Derived protiens
D. All of the above (Correct)

54. Based on function, thyroxin can be classified as:
A. Hormonal protien (Correct)
B. Structural protien
C. Transport protien
D. Genetic protien

55. L- Asparaginase enzyme has been used for the treatment of:
A. Jaundice
B. Blood Cancer (Correct)
C. Rickets
D. Heat disease

56. Potassium, Rubidium, Cesium react with oxygen to form which types of oxides?
A. Peroxide
B. Superoxide (Correct)
C. Suboxide
D. Normal Oxide

57. Magnesium reacts with Nitrogen to form:
A. Mg_2N_2
B. Mg_3N_2 (Correct)
C. MgN_2
D. MgN

58. Densities of alkali metals are low due to:
A. Weak intermolecular forces
B. Large atomic volume (Correct)
C. Smaller size
D. ns^1 Configuration

59. In 3rd series of transition elements, paramagnetic behaviour is maximum for Mn^{+2} and:

A. Cr^{3+} (Correct)

B. Ti^{3+}

C. V^{3+}

D. Zn^{+2}

60. Electronic configuration of chromium (Proton number 24) is:

A. $[Ar]3d^4 4s^2$

B. $[Ar]3d^5 4s^2$

C. $[Ar]3d^5 4s^1$ (Correct)

D. $[Ar]3d^6 4s^2$

61. The transition element which doesn't show variable valency is:

A. Cu

B. Sc

C. Zn (Correct)

D. Cr

62. Select the organic compound which belongs to Arene family:

A. $CH_2 = CH_2$

B. $CH_3 - O - CH_3$

C. $CH_3 - NH_2$

D. C_6H_6 (Correct)

63. The type of isomerism existing in a compound of molecular formula C_2H_6O is:

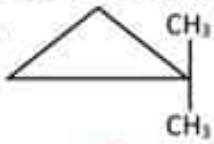
A. Functional group (Correct)

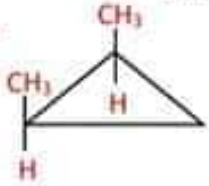
B. Position

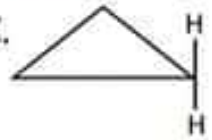
C. Chain

D. Metamerism

64. Which of the following compounds show geometric isomersim?

A. 

B.  **(Correct)**

C. 

D. 

65. Generic formula of cycloalkane is?

A. C_nH_{2n+2}

B. C_nH_{2n} (Correct)

C. C_nH_{2n-1}

D. C_nH_{2n-2}

66. Electrophile in sulphonation of benzene is:

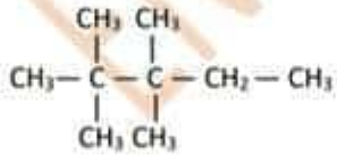
A. HSO_4^-

B. H_2SO_4

C. SO_3 (Correct)

D. HSO_3^-

67. The following has IUPAC name of:



A. 2,3 – tetramethyl butane **B. 2,2,3,3 – tetramethyl pentane (Correct)**

C. 3,3,4,4 – tetramethyl butane D. 3,4- bis (dimethyl butane)

68. Acetophenone can be formed by which of the following reaction of benzene?
A. Alkylation
B. Acylation (Correct)
C. Halogenation
D. Nitration

69. In alkanes, each Carbon has hybridization:
A. sp^3 (Correct)
B. sp
C. sp^2
D. dsp

70. When CH_3 is atteched with the benzene ring, it makes the ring:
A. Good electrophile
B. Good nucleophile (Correct)
C. Resonance hybrid
D. Extraordinary stable

71. Which of the following reaction has greater K_P than K_C ($K_P > K_C$)?
A. $2NO + Cl_2 \leftrightarrow 2NOCl$
B. $2SO_2 + O_2 \leftrightarrow 2SO_3$
C. $2NOCl \leftrightarrow 2NO + Cl_2$ (Correct)
D. $N_2 + 3H_2 \leftrightarrow 2NH_3$

72. The equation $N_{2g} + 3H_{2g} \leftrightharpoons 2NH_{3g}$ represents:
A. Contact process
B. Haber's process (Correct)
C. Solvay process
D. Avogadro's law

73. The unit of the rate constant is the same as that of the rate of reaction in:
A. Zero order reaction (Correct)
B. First order reaction
C. Second order reaction
D. Third order reaction

74. The study of rates of chemical reactions and the factors that affect the rates of chemical reactions is known as:
A. Thermodynamics
B. Stoichiometry
C. Electrochemistry
D. Chemical Kinetics (Correct)

75. For the reaction $A_{(g)} \rightarrow$ products
When the concentration of '$A_{(g)}$' doubles, the rate of reaction increases four folds, which means it is:
A. Negative order reaction
B. First order reaction
C. Zero order reaction
D. Second order reaction (Correct)

76. for which of the following order of the reaction, rate of reaction is inversely proportional to the concentration reaction?
A. 1st order reaction
B. 2nd order reaction
C. Negative order of reaction (Correct)
D. Zero order of reaction

77. The Thermal energy at constant pressure is called:
A. Enthalpy (Correct)
B. Internal energy
C. Heat capacity
D. Work done

78. Born-Haber cycle is used to determine the lattice energies of:
A. Molecular solids
B. Metallic solids
C. Ionic solids (Correct)
D. Covalent solids

79. One Calorie is equal to:
A. 4.18 KJ
B. 4.18 J (Correct)
C. 0.418 KJ mol^{-1}
D. 0.418 KJ

80. The oxidation state of "S" in the $(S_2O_3)^{-2}$ is:
A. +4
B. +6
C. -2
D. +2 (Correct)

81. The common oxidation number of halogens is:
A. -1 (Correct)
B. +1
C. -2
D. 0

82. During oxidation process, oxidation number of an element:
A. Decreases
B. Increases (Correct)
C. Remains constant
D. Both A & B

83. Which of the following has the highest value of electronegativity?
A. I
B. Br
C. Cl
D. F (Correct)

84. Which of the following hybrid orbitals has maximum "s" -character?
A. sp^3-hybrid orbital
B. sp^2-hybrid orbital
C. sp-hybrid orbital (Correct)
D. dsp^2-hybrid orbital

85. The first ionization energy is maximum for:
A. Na
B. Mg (Correct)
C. Al
D. K

86. The efficiency of chemical reaction can be expressed as:
A. Theoretical yield
B. Actual yield
C. % yield (Correct)
D. Maximum yield

87. In a vessel, 10g N_2, 10g H_2 and 10g O_2 are present. Which one will have least number of atoms?
A. H_2
B. N_2
C. O_2 (Correct)
D. Both H_2 & N_2

88. The empirical formula of Glucose $C_6H_{12}O_6$ is:
A. $C_6H_{12}O_6$
B. CHO
C. CH_2O (Correct)
D. CH_2O_2

89. The relationship between quantum number n and l is:
A. n = l-1
B. l = n-2
C. l = n-1 (Correct)
D. n= l-2

90. Quantum number values for '2p' orbitals are:
A. n=2, l=1 (Correct) B. n=1, l=2
C. n=1, l=0 D. n=2, l=0

91. Which pair has 1 electron in its 's' orbital?
A. Li & Fe
B. Na & Cr (Correct)
C. K & Mn
D. H & He

92. Which of the following has the lowest e/m ratio?
A. Li^{+2}
B. H^{+1}
C. He^{+}
D. Be (Correct)

93. According to the general gas equation, density of an ideal gas depends upon:
A. Pressure
B. Temperature
C. Molar mass of the gas
D. All of the above (Correct)

94. The actual volume of gas molecules is considered negligible at following pressures:
A. 2 atm (Correct)
B. 4 atm
C. 6 atm
D. 8 atm

95. CO_2 and SO_2 both are tri-atomic molecules but heat of vaporization of SO_2 is greater than that of CO_2 due to:
A. High electronegativity of S
B. Greater size of SO_2
C. SO_2 is polar and CO_2 is non-polar (Correct)
D. SO_2 is more acidic than CO_2

101. We prefer fruits _____ sweets.
A. To (Correct)
B. On
C. Over
D. From

102. Choose the correct spelling
A. Exantuated.
B. Axantuated.
C. Accenchuated.
D. Accentuated. (Correct)

103. Choose the correct spelling
A. Cotioned.
B. Cautioned. (Correct)
C. Causchuned.
D. Coschuned.

104. Choose the correct spelling
A. Eccentric. (Correct)
B. Eckentric.
C. Akcantric.
D. Accentric.

105. Choose the correct spelling.
A. Dafinite.
B. Defanit.
C. Dafanite.
D. Definite. (Correct)

106. The Headmaster _____ to speak to you.

A. Wants. (Correct)

B. Is wanting.

C. Was wanting.

D. Want.

107. Choose the correct option:

Knowledge and wisdom _____ no time for connection.

A. Has

B. Have (Correct)

C. Had

D. Are

108. Identify the errors and choose the correct option:

I hope this letters finds in the best of your spirits

A. I hope this letter will find you in good of high spirits.

B. I hope this letter finds you in best of your spirit.

C. I hope letter finds you in the best of spirits. (Correct)

D. I hope the letter found you in greatest of sprite

109. Identify the errors and choose the correct option:

Gulliver travel was written by Swift

A. Gulliver travels was written to Swift.

B. Gulliver travels was written at Swift.

C. Gulliver's Travels was written by Swift. (Correct)

D. Gulliver's travel was written by Swift.

110. Fill in the blank with appropriate article as required.

_____ umbrella is of no avail against a thunderstorm.

A. The

B. A

C. An (Correct)

D. No article required.

111. Choose the correct sentence.
A. I wish I have been a millionaire.
B. I wish I am being a millionaire.
C. I wish I were a millionaire. (Correct)
D. I wish I was millionaire.

112. Pick the correct option:
A. No star is brighter than the moon. (Correct)
B. No star is more bright than the moon.
C. No star is brighter then the moon.
D. No star is brighter than moon.

113. Choose the correctly structured sentence.
A. Had he lived in England he would miss his family.
B. Had he lived in England, he would have missed his family. (Correct)
C. Had he lived in England he had missed his family.
D. Had he live in England he will missed his family.

114.' She always carried an umbrella '. The sentence indicates _____ tense.
A. Present tense.
B. Past simple. (Correct)
C. Past perfect.
D. Present perfect.

115. Ahmed _____ me for a long time.
A. Know.
B. Have known.
C. Knows.
D. Knew. (Correct)

BIOLOGY

121. When the temperature of the surrounding rises, body responds by:
A. Vasoconstriction
B. Vasodilation (Correct)
C. Shivering
D. Raising body hairs

122. The excretion of hypertonic urine in humans is associated best with the:
A. Glomerular capsule
B. Proximal convoluted tube
C. Loop of Henle (Correct)
D. Distal convoluted tubule

123. In humans, the temperature regulation control center is located in:
A. Kidney
B. Brain (Correct)
C. Lungs
D. Liver

124. As an excretory organ, liver:
A. Detoxifies many chemical poisons
B. Produces ammonia for excretion by the kidneys
C. Produces urea and uric acids from the nitrogen of amino acids
D. All of the above (Correct)

125. The active uptake of sodium in the ascending limb or thick loop of Henie is promoted by the action of:
A. Aldosterone (Correct)
B. Thyroxine
C. ADH
D. Cortisone

126. Which of the following muscles are considered as "Voluntary Muscles"?
A. Smooth muscles
B. Cardiac muscles
C. Skeletal muscles (Correct)
D. Glandular muscles

127. Which of the following are "myogenic" type of muscles?
A. Glandular muscles
B. Cardiac muscles (Correct)
C. Skeletal muscles
D. Smooth muscles

128. What do we call the cell surface membrane of a muscle fiber?
A. Sarcolemma (Correct)
B. Plasma membrane
C. Sarcoplasm
D. Myofibrils

129. Which of the following neurotransmitters function, both as neurotransmitter and hormones, decreasing our perception of pain?
A. Epinephrine
B. Serotonin
C. Dopamine
D. Endorphins (Correct)

130. Which body function is controlled through positive feed-back mechanism?
A. Labor contractions (Correct)
B. Body temperature
C. Insulin production
D. Thyroxin release

131. Which one of the following is common to all neurons?
A. A cell body which contains a nucleus (Correct)
B. A thick myelin sheath
C. Presence of node of Ranvier
D. Presence of Schwann cells

132. Neurons are cells adapted for the rapid transmission of electrical impulses. To do this, they have long thin processes called:
A. Axons (Correct)
B. Dendrites
C. Myelin sheath
D. Schwann cell

133. A _____ is a junction between two neurons or between a motor neutron and a muscle cell:
A. Impulse
B. Synapse (Correct)
C. Axon
D. Cleft

134. Which one of the following represents the changes that occur in the ovary and the uterus approximately every 28 days involving ovulation with the breakdown and loss of the lining of the uterus?
A. Ovulation
B. Menstrual cycle (Correct)
C. Uterine cycle
D. Embryo formation

135. Which of the following diseases is sexually transmitted?
A. Tuberculosis
B. AIDS (Correct)
C. Dengue Fever
D. Cholera

136. Which of the following hormones of the pituitary gland regulate the menstrual cycle?
A. Follicle Stimulating Hormone and estrogen
B. Luteinizing hormone and estrogen
C. Follicle Stimulating Hormone and Luteinizing hormone (Correct)
D. Estrogen and progesterone

137. Haemophilia A and B, color blindness and testicular are example of:
A. X-linked dominant trait
B. Y-linked recessive trait
C. Y-linked inheritance
D. Pseudoautosomal trait
Correct Option is Missing = (X-Linked Recessive)

138. Which traits are most likely to affect men than women?
A. X linked recessive (Correct)
B. X linked dominant
C. Autosomal dominant
D. Autosomal recessive

139. _____ alleles both have an effect on the phenotype of a heterozygous organism:
A. Dominant
B. Recessive
C. Co-dominant (Correct)
D. Multiple

140. When both the alleles of a gene pair are same, the organism is said to be:
A. Heterozygous
B. Genotype
C. Homozygous (Correct)
D. Phenotype

141. In which type of cells, cell wall is not present?
A. Plant cells
B. Fungai Cells
C. Bacterial cells
D. Liver cells (Correct)

142. 70S sized ribosomes are found in the cells of:
A. Algae
B. Fungi
C. Protozoans
D. Bacteria (Correct)

143. According to the fluid mosaic model of cell membrane, which zone is embedded inside?
A. Hydrophobic (Correct)
B. Hydrophilic
C. Globular
D. Filamentous

144. The membrane separating the vacuole from cytoplasm is called:
A. Cristae
B. Cisternae
C. Tonoplast (Correct)
D. Vacuolar membrane

145. Select the one which is not a function of Smooth Endoplasmic Reticulum (SER)?
A. Metabolism of lipids
B. Transmission of impulses
C. Transport of materials
D. processing of glycoproteins (Correct)

146. Which of the following organelles are involved in the synthesis of plant cell wall?
A. Endoplasmic reticulum
B. Golgi complex (Correct)
C. Lysosomes
D. Peroxiosomes

147. Which property of water helps to maintain the integrity of lipids bilayer membranes?
A. Specific heat capacity
B. Hydrogen bonding
C. Cohesion and adhesion
D. Hydrophobic exclusion (Correct)

148. Water act as universal solvent because of:
A. Heat of vaporization
B. Hydrogen bonding
C. High polarity (Correct)
D. Cohesion and adhesion

149. Lipids store double amount of energy as compared to carbohydrate because of:
A. High proportion of Oxygen
B. High C-O ratio
C. Low proportion of Carbon
D. High proportion of C-H(Correct)

150. Which of the following is an unsaturated fatty acid?
A. Oleic acid (Correct)
B. Palmitic acid
C. Butyric acid
D. Acetic acid

151. Mono-saccharides have a general formula represented by:

A. $Cn(H_2O)n$(Correct)

B. $C(H_2O)n$

C. $C_2(H_2O)n$

D. $C^n(H_2O)n$

152. NAD is an example of:

A. Mononucleotide

B. Dinucleotide (Correct)

C. Tri nucleotide

D. Tetranucleotide

153. Lock and Key Model for enzyme action proposed by Emil Fischer suggests that:

A. Enzymes are unbiased for the substrate

B. Enzymes can modify their active sites

C. Enzymes are restricted to one reaction type (Correct)

D. An enzyme can catalyze variety of reactions

154. Most enzymes have an optimum temperature of around:

A. 30 ^{0}C

B. 40 ^{0}C (Correct)

C. 50 ^{0}C

D. 20 ^{0}C

155. Enzymes work by lowering the _____ of the reaction they catalysis:

A. Kinetic energy

B. Activation energy (Correct)

C. Heat energy

D. Potential energy

156. First stable compound during Calvin Cycle is:
A. 3-phosphoglycerate (Correct)
B. Glyceralaldehyde 3-Phosphate
C. 1,3 bisphosphoglycerate
D. Ribulose bisphosphate

157. What is the function of Ribulose?
A. Intermediates in photosynthesis (Correct)
B. Respiratory Fuel
C. Intermediates in cellular respiration
D. Component of DNA and RNA

158. Which of the following process does NOT need Pyruvic Acid as a substrate?
A. Alcoholic fermentation
B. Calvin cycle (Correct)
C. Aerobic respiration
D. Lactic acid fermentation

159. Which of the following is a copper containing protein in electron transport chain?
A. Plastoquinone
B. Cytochrome-C
C. Plastocyanin (Correct)
D. Ferredoxin

160. In electron transport chain, ATP synthesis takes place when electrons move from:
A. Primary Elector Acceptor (PEA) to plastoquinone (Pq)
B. Plastoquinone (Pq) to cytochromes
C. Cytochrome to plastocyanin (Pc) (Correct)
D. Plastocyanin (Pc) to Photosystem I (PS I)

161. "Law of independent assortment" states:

A. That each pair of alleles assort independently of other pairs of alleles during gamete formation (Correct)

B. That alleles of each pair of contrasting trait have unequal probability to assort with the alleles of other pair

C. That the two coexisting alleles for each trait segregate (separate) from each other at meiosis, so that each gamete receives only one of the two alleles

D. That pertain to inheritance of single trait (monohybrid cross)

162. Phenotype is:

A. The genetic complement i.e the genes in an individual for a part trait

B. Partner of gene pair

C. The form of appearance of a trait(Correct)

D. The position of a gene on the chromosome

163. In complete dominance:

A. Different alleles of a gene both expressed in heterozygous condition

B. One allele (R) is completely dominant over the other (r) and presence of the recessive allele is functionality hidden. So the heterozygote (Rr) has the same round phenotype as (RR) homozygote. (Correct)

C. The phenotype of the heterozygotes is intermediate between phenotype of the two homozygotes

D. Gene mutations may produced many different alleles of a gene

164. Which one of the following is found in both messenger RNA and DNA of a mammalian cell?

A. Double helical structure

B. Ribose sugar

C. Thymine

D. Sugar – phosphate backbone (Correct)

165. The cells in our body are all genetically identical, apart from the:
A. Somatic cells
B. Reproductive cells (Correct)
C. Muscle fibres
D. White blood cells

166. Transcription is the process in which an RNA copy of the DNA sequence and coding the gene is produced is produced with the help of an enzyme called:
A. DNA polymerase
B. RNA polymerase(Correct)
C. DNA transcriptase
D. RNA transcriptase

167. The particular array of chromosomes that an individual possesses is called its:
A. Genotype
B. Phenotype
C. Karyotype(Correct)
D. Allele

168. During meiosis, the homologous chromosomes come together and form pairs, this process is called:
A. Linkage
B. Synapsis(Correct)
C. Pairing
D. Crossing over

169. At what phase the DNA content of a cell is doubled?
A. Prophase B. Interphase(Correct)
C. Anaphase D. Telophase

170. Which statement correctly describes the transcription of DNA?
A. It produces amino acids
B. It produces messenger RNA(Correct)
C. It results in increased DNA synthesis
D. It is a semi conservative process

171. This theory says that "mitochondria and chloroplasts are, in effect, ancient bacteria which now live inside the larger cells":
A. Darwin's theory of evolution
B. Lamarckism
C. Neo-Darwinism
D. Endosymbiont theory(Correct)

172. The organs which are similar in function but differ in structure are called:
A. Analogous organs(Correct)
B. Homologous organs
C. Convergent evolution
D. Divergent evolution

173. _____ occurs because natural selection gives some alleles a better chance of survival than others.
A. Fitness
B. Evolution (Correct)
C. Crossing over
D. Artificial selection

174. The DNA that has been altered and which now contains length of nucleotides from two different organisms is called a:
A. Plasmid
B. Combined DNA
C. Vector
D. Recombinant DNA (Correct)

175. It is a method for rapid production of a very large number of copies of a particular fragment of DNA:
A. Gel electrophoresis
B. Polymerase chain reaction (Correct)
C. DNA extraction
D. Recombination

176. What is the effect of enzyme DNA ligase?
A. DNA is broken up at specific sites
B. DNA fragments are jointed together (Correct)
C. DNA replication occurs
D. DNA transcription occurs

177. Which of the following is the components/tools of recombinant DNA technology?
A. Gene of interest
B. Molecular scissors
C. Molecular glue and expression system
D. All of the above (Correct)

178. Gel electrophoresis is a technique:
A. Employed by forensic scientist to assist in the identification of the individuals by their respective type of DNA.
B. Collect all the genes found in one complete set of chromosome
C. Is a technique to separate different sized fragment of charge bearing polymers (proteins, RNA or DNA) (Correct)
D. Grows single cell or a group of cells in a glass ware on artificial medium under aseptic conditions

179. Transgenic organisms:
A. Have a foreign gene inserted into them
B. Have an important role in the large scale production of medicinal products
C. Are considered beneficial to humans
D. All of the above (Correct)

180. Which of the following is not necessary for PCR to occur?
A. dATP
B. Primers
C. DNA fragments
D. Ribonucleotides (Correct)

181. The end product of glycolysis in anaerobic respiration is:
A. Ethanol and Carbon dioxide
B. Lactate
C. Pyruvate (Correct)
D. Acetyl Co A

182. Which of the following is not related to enveloped virus?
A. They survive for a short time
B. Their envelope is sensitive to sun light
C. They are tolerant to antibodies (Correct)
D. Envelope is derived from host

183. Numerous opportunistic diseases might attack a person suffering from which of the following diseases?
A. Measles
B. Influenza
C. Hepatitis A
D. AIDS (Correct)

184. The complete, mature and infection virus particle is known as:
A. Venome
B. Genome
C. Vinon (Correct)
D. Capsid

185. Which of the following is NOT TRUE about Human Immunodeficiency virus (HIV)?
A. It is a retrovirus
B. It is surrounded by an envelope
C. It does not cause AIDS (Correct)
D. It causes deficiency of the human immune system

186. Select a method which causes the oxidation of chemical constituent of a bacterial cell:
A. Steam
B. Dry heat (Correct)
C. Filtration
D. Radiation

187. Which of the following is TRUE about the structure of a typical bacterium?
A. It has cell wall
B. It has cytoplasm
C. It has genetic
D. All of the above (Correct)

188. Red algae do not contribute towards:
A. Making coral reefs
B. Forming limestone deposits
C. Making fertilizers (Correct)
D. Forming chalk deposits

189. Which of the following is TRUE about Amoebae?
A. They have flagella
B. They are multicellular
C. They do not cause any disease in humans
D. They move by forming specialized cytoplasmic projections called pseudopodia (Correct)

190. The directional movement toward or away from the stimulus is called:
A. Tropism
B. Orientation
C. Taxis (Correct)
D. Non orientation

191. Photophosphorylation takes place in the _____ of the chloroplasts:
A. Stroma
B. Granum (Correct)
C. Inner membrane
D. Outer membrane

192. Select an anamniote from the following.
A. Snake
B. Parrot
C. Frog (Correct)
D. Crocodile

193. In roots the, apoplast pathway of water is disrupted when water reaches:
A. Plasmodesmata
B. Endodermis (Correct)
C. Cortex
D. Pith

194. (Out of KPK Course) Regarding structure of the human heart, Chordae tendinae are present in:
A. Atria
B. Pulmonary valve
C. Ventricles (Correct)
D. Aortic valve

195. The only vein in the human body carrying oxygenated blood is:
A. Femoral
B. Pulmonary (Correct)
C. Renal
D. Iliac

196. The cells which play very important role in developing immunity are:
A. Monocytes
B. Neutrophils
C. Lymphocytes (Correct)
D. Thrombocytes

197. Which of the following blood vessels have the highest pressure of blood?
A. Aorta (Correct)
B. Pulmonary arteries
C. Pulmonary veins
D. Vena Cava

198. Autoimmune diseases act at the principle of:
A. Self against antigens
B. Antigen against self
C. Self against self (Correct)
D. Antigen self-destroyed

199. In human heart, the left atrium receives:

A. The superior Vena Cava

B. The inferior Vena Cava

C. The coronary sinus

D. The four pulmonary veins (Correct)

200. Antibodies are manufactured in:

A. T Lymphocytes

B. Red Blood Cells

C. Platelets

D. B Lymphocytes (Correct)