

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
D. One fourth
2. Under what condition an object will have zero displacement but non zero distance?
A. Linear motion
B. Circular motion
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
4. The speed of sound in air is 332 m / s. The speed of sound at 22 °C will be:
A. 345.2 m/s
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
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}
7. In which process the entire of heat supplied to the gas is converted to the internal energy of the gas?
A. Isochoric process
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. Become zero
D. Remain constant

9. If the potential at a point which is 1m from a charge is 1volt, then the potential at a point which is 2m from the same charge will be:
 A. 2 v
 B. 1 v
 C. 0.5 v
 D. 3 v
10. The values of electric intensity will _____ due to the presence of dielectric medium:
 A. Increase
 B. Increase exponentially
 C. Decrease
 D. Remain same
11. The slope of distance – time graph will always be:
 A. Negative
 B. Positive
 C. Zero
 D. Maximum
12. At what angle of projection of a projectile the range becomes half of its maximum value?
 A. 15°
 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. $9.8 t^2$
 B. $4.9 t^2$
 C. $0.49 t^2$
 D. $98 t^2$
14. The newton-second is unit of:
 A. Work
 B. Power
 C. Impulse
 D. Momentum
15. A 1.75 m heighted weight-lifter raises weights with a mass of 50 kg to a height of 0.5m above his head. How much work is being done by him? ($g=10\text{ms}^{-2}$)
 A. 2125 J
 B. 2500 J
 C. 50 J
 D. 1225 J
16. What is the speed of 2.0 Kg metallic bob at mean position of a simple pendulum, when released from its extreme position 0.5m high? ($g=10\text{ms}^{-2}$)
 A. 3.16 ms^{-1}
 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. $1/4$
 C. $1/8$
 D. $1/6$

18. Which one of the following force is non-conservative force?
 A Frictional force
 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 18 Hours
 C 6 Hours
 D 12 Hours
20. 1 radian is equal to:
 A 57.1°
 B 57.2°
 C 57.3°
 D 57.4°
21. In transmission from grid station, power losses are minimized by:
 A Increasing current
 B Decreasing current
 C Increasing resistance
 D Increasing voltage
22. The domestic electricity supply has a frequency of:
 A 150 Hz
 B 100 Hz
 C 50 Hz
 D 25 Hz
23. PIV stands for:
 A Positive inverse voltage
 B Power integrated voltage
 C Peak inverse voltage
 D Peak integrated voltage
24. In full wave rectification, the diodes are used:
 A 1
 B 2
 C 3
 D 4
25. The wavelength associated with an electron is of the order of:
 A Visible light
 B X-rays
 C Radio waves
 D infrared
26. Which photon carries the most energy?
 A Blue
 B Violet
 C Red
 D Green

27. Which one of the following series lies in the ultraviolet?
- Balmer series
 - Pascher series
 - Lyman series
 - Bracket series
28. The main difference between X rays and Y rays is:
- Frequency
 - Wave length
 - Energy
 - Origin
29. There are initially 400 atoms in a radioactive sample. What would be the number of atoms after 3 half-life?
- 400
 - 200
 - 50
 - 25
30. While using radiation therapy, cancerous thyroid is treated with _____ radioisotope:
- Carbon
 - $^{235}\text{uranium}$
 - Thorium
 - Iodine-131
31. In capacitors, energy is stored in the form of:
- Gravitational energy
 - Kinetic energy
 - Electric intensity
 - Magnetic induction
32. Ohm time's farad is equivalent to:
- Time
 - Charge
 - Distance
 - Capacitor
33. One kilowatt-hour is commonly termed as one commercial unit of electric energy which is equal to :
- $3.6 \times 10^5 \text{ J}$
 - $3.6 \times 10^6 \text{ J}$
 - $3.6 \times 10^4 \text{ J}$
 - $3.6 \times 10^3 \text{ J}$
34. When a wire is compressed and it's radius becomes $2R$ then its resistance will be:
- $16 R$
 - $4 R$
 - $1 / 16 R$
 - $1 / 4 R$
35. One of the following is an Ohmic device:
- Filament bulb
 - Semiconductor diode
 - Transistor
 - Copper wire

36. The change in resistance -
 A. Non linear
 B. Curve
 C. Linear
 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 same
 D. Infinite
38. Magnetic flux is maximum when angle between magnetic field and vector area is:
 A. 0°
 B. 90°
 C. 180°
 D. 45°
39. Transformer is a device which steps up or steps down the input:
 A. Current
 B. Voltage
 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
 D. Intermediate value of current

CHEMISTRY

41. Alkyl Halides involving $-C-X$ bond breakage and $-C-Nu$ bond formation simultaneously would follow the mechanism:
 A. S_N1
 B. S_N2
 C. E_1
 D. E_2
42. Secondary alkyl Halide is:
 A. $\begin{array}{c} CH_3 \\ | \\ H-C-Cl \\ | \\ H \end{array}$
 B. $\begin{array}{c} H \\ | \\ H-C-Cl \\ | \\ H \end{array}$
 C. $\begin{array}{c} CH_3 \\ | \\ CH_3-C-Cl \\ | \\ H \end{array}$
 D. CH_3Cl

43. R-X on reaction with alcohols forms:
- R-OH
 - ROR
 - R-X-OH
 - RH
44. IUPAC name of $C_6H_5O(CH_2)_3$ is:
- 2-Methyl-3-Hexanone
 - 2,5 - Dimethyl cyclohexanone
 - 3-Methyl cyclohexanone
 - 4-Methyl-3-hexanone
45. Phenol is known as:
- Carpolic acid
 - Carbonylic acid
 - Carbolic acid
 - Carbolylic acid
46. Phenol is more acidic than alcohols because of the following reason:
- Delocalization of negative charge in the OH group
 - Delocalization of positive charge in the OH group
 - Delocalization of negative charge on the carbon atom in ring
 - Delocalization of positive charge in the ring
47. The common name of following aldehyde is:
- $$\begin{array}{c}
 \text{Cl} - \text{CH}_2 - \text{CH} - \text{CHO} \\
 | \\
 \text{CH}_3
 \end{array}$$
- α - methyl - γ - chloro propionaldehyde
 - β - Chloro - γ - methyl propionaldehyde
 - β - chloro - α - methyl propionaldehyde
 - β - methyl - α - chloro propionaldehyde
48. Which of the following reagent is use to separate and purify carbonyl and non-carbonyl compounds?
- HCN
 - BrMgCH_3
 - NaHSO_3
 - H_2O
49. Secondary alcohol is the product of reduction of which carbonyl compound?
- $$\begin{array}{c}
 \text{O} \\
 || \\
 \text{CH}_3 - \text{C} - \text{H}
 \end{array}$$
 - $$\begin{array}{c}
 \text{O} \\
 || \\
 \text{CH}_3 - \text{C} - \text{CH}_3
 \end{array}$$
 - $$\begin{array}{c}
 \text{O} \\
 || \\
 \text{H} - \text{C} - \text{H}
 \end{array}$$
 - $$\begin{array}{c}
 \text{O} \\
 || \\
 \text{CH}_3 - \text{CH}_2 - \text{C} - \text{H}
 \end{array}$$
50. Which of the following is the strongest acid?
- Propanoic acid
 - Flouroethanoic acid
 - Trichloroethanoic acid
 - Nitroethanoic acid

51. Hydrolysis of acyl chloride results in the formation of:
 A Acid anhydride
 B Carboxylic acid
 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
53. Based on the physico-chemical properties, proteins may be classified into the following types:
 A Simple proteins
 B Compound proteins
 C Derived proteins
 D All of the above
54. Based on function, thyroxine can be classified as:
 A Hormonal protein
 B Structural protein
 C Transport protein
 D Genetic protein
55. L-Asparaginase enzyme has been used for the treatment of:
 A Jaundice
 B Blood cancer
 C Rickets
 D Heat disease
56. Potassium, Rubidium, Cesium react with oxygen to form which types of oxides?
 A Peroxide
 B Superoxide
 C Suboxide
 D Normal oxide
57. Magnesium reacts with Nitrogen to form:
 A Mg_2N_2
 B Mg_3N_2
 C MgN_2
 D MgN
58. Densities of alkali metals are low due to:
 A Weak intermolecular forces
 B Large atomic volume
 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+}
 B Ti^{3+}
 C V^{3+}
 D Zn^{2+}

Electronic configuration of chromium (Proton number 24) is:

- A. $[\text{Ar}] 3d^4 4s^2$
- B. $[\text{Ar}] 3d^5 4s^2$
- C. $[\text{Ar}] 3d^5 4s^1$
- D. $[\text{Ar}] 3d^5 4s^2$

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

- A. Cu
- B. Sc
- C. Zn
- D. Cr

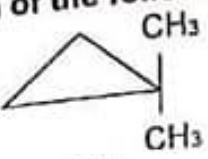
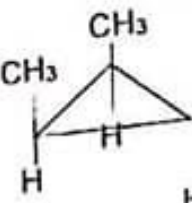
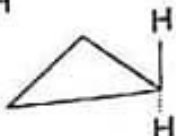

Select the Organic compound which belongs to Arene family:

- A. $\text{CH}_2 = \text{CH}_2$
- B. $\text{CH}_3 - \text{O} - \text{CH}_3$
- C. $\text{CH}_3 - \text{NH}_2$
- D. C_6H_6

The type of isomerism existing in a compound of molecular formula $\text{C}_2\text{H}_6\text{O}$ is:

- A. Functional group
- B. Position
- C. Chain
- D. Metamerism

Which of the following compounds show geometric isomerism?

- A. 
- B. 
- C. 
- D. 

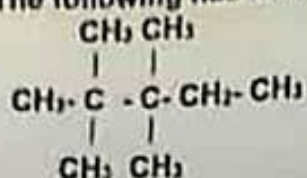
Generic formula of cycloalkane is?

- A. $\text{C}_n\text{H}_{2n+2}$
- B. C_nH_{2n}
- C. $\text{C}_n\text{H}_{2n-1}$
- D. $\text{C}_n\text{H}_{2n-2}$

Electrophile in sulphonation of benzene is:

- A. HSO_4^-
- B. H_2SO_4
- C. SO_3
- D. HSO_3^-

67. The following has IUPAC name of:



- A. 2,3 - tetramethyl butane
 - B. 2,2,3,3 - tetramethyl pentane
 - 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
 - C. Halogenation
 - D. Nitration
69. In alkanes, each Carbon has hybridization:
- A. sp^3
 - B. sp
 - C. sp^2
 - D. dsp
70. When CH_3 is attached with the benzene ring, it makes the ring:
- A. Good electrophile
 - B. Good nucleophile
 - C. Resonance hybrid
 - D. Extraordinary stable
71. Which of the following reaction has greater K_p than K_c ($K_p > K_c$)?
- A. $2 \text{NO} + \text{Cl}_2 \rightleftharpoons 2 \text{NOCl}$
 - B. $2 \text{SO}_2 + \text{O}_2 \rightleftharpoons 2 \text{SO}_3$
 - C. $2 \text{NOCl} \rightleftharpoons 2 \text{NO} + \text{Cl}_2$
 - D. $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$
72. The equation $\text{N}_{2g} + 3\text{H}_{2g} \rightleftharpoons 2\text{NH}_{3g}$ represents:
- A. Contact process
 - B. Haber's process
 - 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
 - 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

For the reaction $A(g) \rightarrow \text{products}$
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

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
- D. Zero order of reaction

76. The thermal energy at constant pressure is called:

- A. Enthalpy
- 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
- D. Covalent solids

79. One calorie is equal to:

- A. 4.18 KJ
- B. 4.18 J
- C. 0.418 KJ mol⁻¹
- D. 0.418 KJ

80. The oxidation state of "S" in the $(S_2O_7)^{2-}$ is:

- A. +4
- B. +6
- C. -2
- D. +2

81. The common oxidation number of halogens is:

- A. -1
- B. +1
- C. -2
- D. 0

82. During oxidation process, oxidation number of an element:

- A. Decreases
- B. Increases
- 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

84. Which of the following hybrid orbitals has maximum s-character?
- sp^3 -hybrid orbital
 - sp^2 -hybrid orbital
 - sp -hybrid orbital
 - dsp^2 -hybrid orbital
85. The first ionization energy is maximum for:
- Na
 - Mg
 - Al
 - K
86. The efficiency of chemical reaction can be expressed as:
- Theoretical yield
 - Actual yield
 - % yield
 - Maximum yield
87. In a vessel, 10 g N_2 , 10g H_2 and 10g O_2 are present. Which one will have least number of atoms?
- H_2
 - N_2
 - O_2
 - Both H_2 & N_2
88. The empirical formula of Glucose $C_6H_{12}O_6$ is:
- $C_6H_{12}O_6$
 - CHO
 - CH_2O
 - CH_2O_2
89. The relationship between quantum number n and l is:
- $n = l - 1$
 - $l = n - 2$
 - $l = n - 1$
 - $n = l - 2$
90. Quantum number values for '2p' orbitals are:
- $n=2, l=1$
 - $n=1, l=2$
 - $n=1, l=0$
 - $n=2, l=0$
91. Which pair has 1 electron in its 's' orbital?
- Li & Fe
 - Na & Cr
 - K & Mn
 - H & He
92. Which of the following has the lowest e/m ratio?
- Li^{+2}
 - H^{+1}
 - He^{+}
 - Be

9. If the potential at a point which is 1m from a charge is 1volt, then a point which is 2m from the same charge will be:
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The newton-second is unit of:

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- Power
- Impulse
- Momentum

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- 2125 J
- 2500 J
- 50 J
- 1225 J

What is the speed of 2.0 Kg metallic bob at mean position when released from a height of 1.0 m?

102. Choose the correct spelling:
A Exanluated
B Axanluated
C Accenchuated
D Accentuated
103. Choose the correct spelling:
A Cotioned
B Cautioned
C Causchuned
D Coschuned
104. Choose the correct spelling:
A Eccentric
B Eckentric
C Akcantric
D Accentric
105. Choose the correct spelling:
A Dafinite
B Defanit
C Dafanite
D Definite
106. The Headmaster _____ to speak to you.
A Wants
B Is wanting
C Was wanting
D Want
107. Choose the correct option:
Knowledge and wisdom _____ no time for connection.
A Has
B Have
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 letters finds you in good of high spirits.
C. I hope letter finds you in best of your spirit.
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 writen by Swift.
B. Gulliver travels was writen to Swift.
C. Gulliver's Travels was writen at Swift.
D. Gullivers' travel was written by Swift.
110. Fill in the blank with appropriate article as required.
_____ umbrella is of no avall against a thunderstorm.
A The
B A
C An
D No article required

11. 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.
- D. I wish I was a millionaire.

112. Pick the correct option:

- A. No star is brighter than the moon.
- 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.
- C. Had he lived in England he had missed his family.
- D. Had he live in England he will missed his family.

'She always carried an umbrella'. The sentence indicates _____ tense.

- A. Present Simple
- B. Past Simple
- C. Past Perfect
- D. Present Perfect

115. Ahmed _____ me for a long time.

- A. Know
- B. Have known
- C. Knows
- D. Knew

116. Pick the correct option:

His first innings consists of four 6s and three 4s.

- A. His first inning's consists of four 6 and three 4.
- B. His first innings consists of four 6's and three 4's.
- C. His first inning consists of four 6's and three 4's.
- D. His first inning's consist of four 6's and three 4's.

117. Choose the correctly punctuated sentence:

- A. What a fall was there, my countrymen! Long live the king!
- B. What a fall was there! my countrymen. Long live the king!
- C. What a fall was there, my countrymen. Long live the king.
- D. What a fall was there, my countrymen, long live the King.

118. Choose the correct option:

- A. He and I was playing.
- B. He and I were playing.
- C. He and I were being playing.
- D. He and I was being playing.

119. Choose the correct option:

- A. Every one of the prisons are full.
- B. Every one of the prisons had full.
- C. Every one of the prisons have full.
- D. Every one of the prisons is full.

- A. Has called
- B. Have called
- C. Have been called
- D. Has been called

BIOLOGY

121. When the temperature of the surrounding rises, body responds by:
- A. Vasoconstriction
 - B. Vasodilation
 - 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 tubule
 - C. Loop of Henle
 - D. Distal convoluted tubule
123. In humans, the temperature regulation control center is located in:
- A. Kidneys
 - B. Brain
 - 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
125. The active uptake of sodium in the ascending limb or thick loop of Henle is promoted by the action of:
- A. Aldosterone
 - B. Thyroxine
 - C. ADH
 - D. Cortisone
126. Which one of the following muscles are considered as "Voluntary Muscles"?
- A. Smooth muscles
 - B. Cardiac muscles
 - C. Skeletal muscles
 - D. Glandular muscles
127. Which one of the following are "myogenic" type of muscles?
- A. Glandular muscles
 - B. Cardiac muscles
 - C. Skeletal muscles
 - D. Smooth muscles
128. What do we call the cell surface membrane of a muscle fibre?
- A. Sarcolemma
 - B. Plasma membrane
 - C. Sarcoplasm
 - D. Myofibrils

129. Which of the following neurotransmitters function, both as neurotransmitter and hormones, decreasing our perception of pain?
- Epinephrine
 - Serotonin
 - Dopamine
 - Endorphins
130. Which body function is controlled through positive feed-back mechanism?
- Labor contractions
 - Body temperature
 - Insulin production
 - Thyroxin release
131. Which one of the following is common to all neurons?
- A cell body which contains a nucleus
 - A thick myelin sheath
 - Presence of node of Ranvier
 - 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:
- Axons
 - Dendrites
 - Myelin sheath
 - Schwann cell
133. A _____ is a junction between two neurons or between a motor neuron and a muscle cell:
- Impulse
 - Synapse
 - Axon
 - 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?
- Ovulation
 - Menstrual cycle
 - Uterine cycle
 - Embryo formation
135. Which of the following diseases is sexually transmitted?
- Tuberculosis
 - AIDS
 - Dengue Fever
 - Cholera
136. Which of the following hormones of the pituitary gland regulate the menstrual cycle?
- Follicle Stimulating Hormone and estrogen
 - Luteinizing hormone and estrogen
 - Follicle Stimulating Hormone and Luteinizing hormone
 - Estrogen and progesterone
137. Haemophilia A and B, color blindness and testicular feminization are example of:
- X-linked dominant trait
 - Y-linked recessive trait
 - Y-linked inheritance
 - Pseudoautosomal trait

138. Which traits are most likely to affect men than women?
A. X linked recessive
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
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
D. Phenotype
141. In which type of cells, cell wall is not present?
A. Plant cells
B. Fungal cells
C. Bacterial cells
D. Liver cells
142. 70S sized ribosomes are found in the cells of:
A. Algae
B. Fungi
C. Protozoans
D. Bacteria
143. According to the fluid mosaic model of cell membrane, which zone is embedded inside?
A. Hydrophobic
B. Hydrophilic
C. Globular
D. Filamentous
144. The membrane separating the vacuole from cytoplasm is called:
A. Cristae
B. Cisternae
C. Tonoplast
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
146. Which of the following organelles are involved in the synthesis of plant cell wall?
A. Endoplasmic reticulum
B. Golgi complex
C. Lysosomes
D. Peroxisomes

- Which property of water helps to maintain the integrity of membranes?
- Specific heat capacity
 - Hydrogen bonding
 - Cohesion and adhesion
 - Hydrophobic exclusion
- Water act as universal solvent because of:
- Heat of vaporization
 - Hydrogen bonding
 - High polarity
 - Cohesion and adhesion
- Lipids store double amount of energy as compared to carbohydrates because of:
- High proportion of Oxygen
 - High C-O ratio
 - Low proportion of Carbon
 - High proportion of C-H
- Which of the following is an unsaturated fatty acid?
- Oleic acid
 - Palmitic acid
 - Butyric acid
 - Acetic acid
- Mono-saccharides have a general formula represented by:
- $C_n(H_2O)_n$
 - $C(H_2O)_n$
 - $C_2(H_2O)_n$
 - $C^n(H_2O)_n$
- NAD is an example of:
- Mononucleotide
 - Dinucleotide
 - Tri nucleotide
 - Tetranucleotide
- Lock and Key Model for enzyme action proposed by Emil Fischer suggests that:
- Enzymes are unbiased for the substrate
 - Enzymes can modify their active sites
 - Enzymes are restricted to one reaction type
 - An enzyme can catalyze variety of reactions
- Most enzymes have an optimum temperature of around:
- 30 °C
 - 40 °C
 - 50 °C
 - 20 °C
- Enzymes work by lowering the _____ of the reactions they catalyse:
- Kinetic energy
 - Activation energy
 - Heat energy
 - Potential energy

156. First stable compound during Calvin Cycle is:
 A. 3-phosphoglycerate
 B. Glyceraldehyde 3 - Phosphate
 C. 1,3 bisphosphoglycerate
 D. Ribulose biphosphate
157. What is the function of Ribulose?
 A. Intermediates in photosynthesis
 B. Respiratory Fuel
 C. Intermediates in cellular respiration
 D. Component of DNA and RNA
158. Which of the following processes does NOT need Pyruvic Acid as a substrate?
 A. Alcoholic fermentation
 B. Calvin cycle
 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
 D. Ferredoxin
160. In electron transport chain, ATP synthesis takes place when electrons move from:
 A. Primary Electron Acceptor (PEA) to Plastoquinone (Pq)
 B. Plastoquinone (Pq) to cytochromes
 C. Cytochrome to Plastocyanin (Pc)
 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
 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 particular trait
 B. Partner of gene pair
 C. The form of appearance of a trait
 D. The position of a gene on the chromosome
163. In complete dominance:
 A. Different alleles of a gene are both expressed in heterozygous condition
 B. One allele (R) is completely dominant over the other (r) and the presence of the recessive allele is functionally hidden, so the heterozygote (Rr) has the same round phenotype as (RR) homozygote
 C. The phenotype of the heterozygote is intermediate between phenotypes of the two homozygotes
 D. Gene mutations may produce many different alleles of a gene

- Which one of the following is found in both messenger RNA and DNA of a mammalian cell?
- Double helical structure
 - Ribose sugar
 - Thymine
 - Sugar – phosphate backbone
165. The cells in our body are all genetically identical, apart from the:
- Somatic cells
 - Reproductive cells
 - Muscle fibres
 - White blood cells
166. Transcription is the process in which an RNA copy of the DNA sequence and coding the gene is produced with the help of an enzyme called:
- DNA polymerase
 - RNA polymerase
 - DNA transcriptase
 - RNA transcriptase
167. The particular array of chromosomes that an individual possesses is called its:
- Genotype
 - Phenotype
 - Karyotype
 - Allele
168. During meiosis, the homologous chromosomes come together and form pairs. this process is called:
- Linkage
 - Synapsis
 - Pairing
 - Crossing over
169. At what phase the DNA content of a cell is doubled?
- Prophase
 - Interphase
 - Anaphase
 - Telophase
170. Which statement correctly describes the transcription of DNA?
- It produces amino acids
 - It produces messenger RNA
 - It results in increased DNA synthesis
 - 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":
- Darwin's theory of evolution
 - Lamarckism
 - Neo-darwinism
 - Endosymbiont theory
172. The organs which are similar in function but differ in structure are called:
- Analogous organs
 - Homologous organs
 - Convergent evolution
 - Divergent evolution

173. _____ occurs because natural selection gives some alleles a better chance of survival than others:
- A Fitness
 - B Evolution
 - 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
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
 - 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
 - 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
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)
 - 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
180. Which of the following is not necessary for PCR to occur?
- A dATP
 - B Primers
 - C DNA fragments
 - D Ribonucleotides
181. The end product of glycolysis in anaerobic respiration is:
- A Ethanol and Carbon dioxide
 - B Lactate
 - C Pyruvate
 - 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
 - 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
184. A complete, mature and infectious virus particle is known as:
- A. Venome
 - B. Genome
 - C. Virion
 - 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
 - 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
 - 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 material
 - D All of the above
188. Red algae do not contribute towards:
- A Making coral reefs
 - B Forming limestone deposits
 - C Making fertilizers
 - 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
190. The directional movement toward or away from the stimulus is called:
- A Tropism
 - B Orientation
 - C Taxis
 - D Non orientation

191. Photophosphorylation takes place in the _____ of the chloroplasts:
A. Stroma
B. Granum
C. Inner membrane
D. Outer membrane
192. Select an anamniote from the following:
A. Snake
B. Parrot
C. Frog
D. Crocodile
193. In roots the, apoplast pathway of water is disrupted when water reaches:
A. Plasmodesmata
B. Endodermis
C. Cortex
D. Pith
194. Regarding structure of the human heart, Chordae tendinae are present in:
A. Atria
B. Pulmonary valve
C. Ventricles
D. Aortic valve
195. The only vein in the human body carrying oxygenated blood is:
A. Femoral
B. Pulmonary
C. Renal
D. Iliac
196. The cells which play very important role in developing immunity are :
A. Monocytes
B. Neutrophils
C. Lymphocytes
D. Thrombocytes
197. Which of the following blood vessels have the highest pressure of blood?
A. Aorta
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
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
200. Antibodies are manufactured in:
A. T Lymphocytes
B. Red Blood Cells
C. Platelets
D. B Lymphocytes

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