

INSTRUCTIONS

- Students are requested to take care of the answer sheet. i.e. do not fold or damage it.
- Use only blue/black ball point pen to fill the circles.
- Cutting and erasing on this sheet is not allowed.

**DETAILS**

- No. of MCQs = 200
- Total Marks = 200
- No Negative Marks .
- Time = 9:00 to 11:30 am
- Best of Luck.

Name: _____

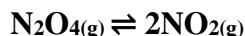
Roll No: _____

Date: 2nd May, 2021**Physics**

- The wave is generated by an oscillation in the vibrating body and propagation of wave through medium is by means of oscillation are:**
 - Electric and magnetic field
 - Mechanical waves
 - Water waves
 - None of these
- What properties are common in both sound waves and light waves?**
 - Diffraction
 - Interference
 - polarization
 - Both a & b.
- During an adiabatic expansion, the increase in volume is associated with:**
 - Decrease in pressure & decrease in Temperature
 - Increase in pressure & increase in temperature
 - Increase in pressure & decrease in temperature
 - Decrease in pressure & increase in temperature
- The specific heat of a gas at constant pressure is greater as compared to a constant volume because:**
 - Work is done in expansion of a gas at constant pressure
 - Work is done in expansion of a gas at constant volume
 - The attraction between the molecules increases at constant pressure
 - The molecular collision increases at constant pressure
- The bouncing back of a wave from the boundary of two different media is known as:**
 - Refraction
 - Transmission
 - Diffraction
 - Reflection
- Sound waves does not cast shadows because of.**
 - Rectilinear motion
 - No diffraction
 - No polarization
 - Maximum diffraction.
- For production of beats the two sources must have:**
 - Different frequencies and same amplitude
 - Different frequencies
 - Different frequencies, same amplitude & same phase
 - Different frequencies and same phase
- The change in internal energy does not depend upon the:**
 - Initial state of system
 - Path
 - Final state of system
 - None of these
- The conversion of water into steam at 100 °C is:**
 - An isochoric process
 - Isobaric change
 - Isochoric change
 - An adiabatic process
- Theoretically the efficiency of Carnot engine is 100 % when temperature of sink is:**
 - 0 °F
 - 0 K
 - 0 °C
 - 273 K
- Which of the following is the temperature at which the speed of sound becomes double as was at 27 °C?**
 - 273 °C
 - 0 °C

- (c) 927 °C
(d) 1027 °C
- 12. Heat cannot by itself flow from a body at lower temperature to a body at higher temperature is a statement as a consequence of:**
- (a) Conservation of mass
(b) Conservation of momentum
(c) First law of Thermodynamics
(d) Second law of Thermodynamics
- 13. For a gas $C_v = 3R/2$ then the gas consists of:**
- (a) Monoatomic entities
(b) Diatomic entities
(c) Polyatomic entities
(d) All of these are possible
- 14. In vibratory motion which parameter remains constant?**
- (a) P.E , Energy
(b) K.E, Energy
(c) Total energy
(d) Angular momentum
- 15. One spring has force constant 200 Nm, another has force constant 500 Nm. If they are joined in series, the force constant will be nearest to:**
- (a) 700 Nm
(b) 300 Nm
(c) 143 Nm
(d) 100 Nm
- 16. The body oscillates due to:**
- (a) Applied force
(b) Restoring force
(c) Frictional force
(d) Air pressure
- 17. In a simple harmonic motion the K.E and P.E are such that throughout the motion:**
- (a) K.E remains constant
(b) P.E remains constant
(c) KE/PE remains constant
(d) KE+PE remains constant
- 18. A simple harmonic oscillator has period T and energy E. The amplitude of the oscillator is doubled. Choose the correct answer:**
- (a) Period & energy get doubled
(b) Period gets doubled & energy remains the same
(c) Energy gets doubled & period remains the same
(d) Period remains the same & energy becomes four time .
- 19. The type of motion in which an oscillating disturbance is transmitted from one position to the next without the actual rectilinear translation of the particles of the medium is called:**
- (a) Periodic motion
(b) Rotatory motion
(c) Wave motion
(d) Rectilinear motion
- 20. In Doppler effect if listener moves towards a stationary source then:**
- (a) Observed frequency is greater than original frequency
(b) Observed frequency is less than original frequency
(c) Observed frequency is equal to original frequency
(d) Observed frequency is independent of original frequency
- ←—————→
- Chemistry**
- 21. The addition of NaCl to AgCl decrease the solubility of AgCl because:**
- (a) K_{sp} decreases
(b) Due to the common ion effect of Cl^- ions
(c) Solution becomes unsaturated
(d) Solution becomes super saturated
- 22. A certain Buffer solution contains equal concentration of X^- and HX. K_b for X^- is 10^{-10} . The pH of Buffer solution is:**
- (a) 4
(b) 10
(c) 9
(d) 5
- 23. The solubility product of a sparingly soluble salt AB at room temperature is 1.21×10^{-6} . Its molar solubility is:**
- (a) 1.21×10^{-6}
(b) 1.21×10^{-3}
(c) 1.1×10^{-4}
(d) 1.1×10^{-3}
- 24. Which of the following is correct?**
- (a) K_p will always have same unit
(b) K_c will always same unit
(c) K_p and K_c will never have same units
(d) K_p and K_c will have same units if $\Delta n \neq 0$
- 25. Does Le – Chatlier’s principle predict a change of equilibrium concentration for the following**

reaction if the gas mixture is compressed



- (a) Yes backward reaction is favoured
- (b) Yes forward reaction is favoured
- (c) No change
- (d) No information

26. Le – Chatelier’s principle is not applicable:

- (a) $\text{Fe}_{(s)} + \text{S}_{(s)} \rightleftharpoons \text{FeS}_{(s)}$
- (b) $\text{H}_{2(g)} + \text{I}_{2(g)} \rightleftharpoons 2\text{HI}_{(g)}$
- (c) $\text{N}_{2(g)} + 3\text{H}_{2(g)} \rightleftharpoons 2\text{NH}_{3(g)}$
- (d) $\text{N}_{2(g)} + \text{O}_{2(g)} \rightleftharpoons 2\text{NO}_{(g)}$

27. For the reaction $2\text{X}_{(g)} + \text{Y}_{(g)} \rightleftharpoons 2\text{Z}_{(g)}$ $\Delta H = -80$ kcal. The highest yield of Z at equilibrium occurs at:

- (a) 1000 atm and 500°C
- (b) 500 atm and 100°C
- (c) 1000 atm and 100°C
- (d) 500 atm and 100°C

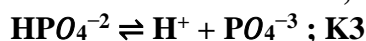
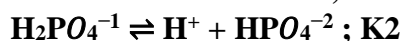
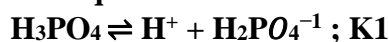
28. The Haber’s process for the manufacturing of NH_3 is usually carried out at about 500°C. If a temperature of 250°C is used instead of 500°C:

- (a) No NH_3 will be formed
- (b) The percentage of NH_3 in the equilibrium mixture would be too low
- (c) A catalyst would be of no use at all at this temperature
- (d) The rate of formation of NH_3 would be too slow

29. At a constant temperature the concentration of a reactant is increased at equilibrium, the equilibrium constant:

- (a) Increases
- (b) Decreases
- (c) Remain unaffected
- (d) First increases and then decreases

30. The equilibrium constant for the reaction are:



The equilibrium constant for $\text{H}_3\text{PO}_4 \rightleftharpoons 3\text{H}^+ + \text{PO}_4^{-3}$; is:

- (a) $k_1/k_2 \cdot k_3$
- (b) $k_2/k_1 \cdot k_3$
- (c) $K_1 + K_2 + K_3$
- (d) $K_1 \times K_2 \times K_3$

31. The most important Buffer in blood consists of:

- (a) HCl and Cl
- (b) H_2CO_3 and HCO_3^{-1}

- (c) H_2CO_3 and Cl^-
- (d) HCl and HCO_3^{-1}

32. What is the unit of k_p for the equilibrium system, $\text{N}_2\text{O}_{4(g)} \rightleftharpoons 2\text{NO}_{(g)}$

- (a) atm
- (b) atm^{-1}
- (c) atm^{-2}
- (d) None of these

33. For the reaction $2\text{NH}_3 \rightarrow \text{N}_2 + 3\text{H}_2$ Rate = $k[\text{NH}_3]^0$. The molecularity and order of reaction:

- (a) 2 and 3
- (b) 3 and 2
- (c) 1 and zero
- (d) 2 and zero

34. The unit of rate constant k for zero order kinetics is:

- (a) Mole liters⁻¹S⁻¹
- (b) Mold m⁻³ S⁻¹
- (c) Ms⁻¹
- (d) All of these

35. For the reaction, $\text{H}_2 + \text{Br}_2 \rightarrow 2\text{HBr}$ Rate = $k[\text{H}_2]^1 [\text{Br}_2]^{1/2}$ The order of reaction is:

- (a) $1 + 1/2$
- (b) $3/2$
- (c) 1.5
- (d) All of these

36. For a certain reaction the unit of rate constant is S⁻¹. The reaction is:

- (a) 1st order
- (b) 2nd order
- (c) 3rd order
- (d) Zero order

37. In a reaction with increase in concentration the rate is decrease. The order of reaction is:

- (a) 1st order
- (b) 2nd order
- (c) 3rd order
- (d) Negative order

38. Which factors affect the rate of reaction?

- (a) Nature of reactant
- (b) Surface area
- (c) Temperature
- (d) All of these

39. For a reaction $\text{A} \rightarrow \text{B}$ it is found that the rate of reaction increases 8 times when the concentration of A is doubled. The order in A for this reaction is:

- (a) 2

- (b) One
(c) Half
(d) 3
- 40. For a slow reaction the ratio of rate constant at 308 k and 318 k is generally:**
(a) 2
(b) 4
(c) 5
(d) 1
- 41. In the reaction $\text{CH}_4 + \text{Cl}_2 \xrightarrow{\text{Sunlight}} \text{CH}_3\text{Cl} + \text{HCl}$ The rate = $k[\text{CH}_4]^0 [\text{Cl}_2]^0$ The order is:**
(a) 1
(b) 2
(c) 3
(d) Zero
- 42. Which is false in the determination of reaction rates?**
(a) Reaction temperature
(b) Reaction concentration
(c) Specific rate constant
(d) Magnitude of equilibrium constant
- 43. Radio - active decay is the example of:**
(a) 1st order kinetics
(b) Zero order
(c) 2nd order
(d) 3rd order
- 44. In rate law the rate constant:**
(a) Temperature dependent
(b) Temperature independent
(c) Concentration dependent
(d) Pressure dependent
- 45. Which one is true?**
(a) Electron pair geometry of NH_3 is tetrahedral
(b) Molecular geometry of NH_3 is pyramidal
(c) The electron pair geometry of SnCl_2 is trigonal planner
(d) All of these
- 46. The total number of sigma bonds in benzene:**
(a) 12
(b) 6
(c) 8
(d) 10
- 47. In BeCl_2 the bond angle is:**
(a) 180°
(b) 120°
(c) 90°
(d) 60°
- 48. According to VESPR theory which one cannot be central atom?**
(a) F
(b) N
(c) O
(d) P
- 49. The bond energies of $\text{F}_2, \text{Cl}_2, \text{Br}_2$ and I_2 are 37, 58, 46 and 36 kcal respectively. The strongest bond formed is in:**
(a) F_2
(b) Cl_2
(c) I_2
(d) Br_2
- 50. The bond present in NH_4Cl ?**
(a) Ionic bond
(b) Covalent bond
(c) Coordinate covalent bond
(d) All of these.
- ←—————→
- Biology**
- 51. Which of the following has dominant gametophyte generation.**
(a) Bryophytes
(b) Pteridophytes
(c) Algae
(d) All.
- 52. Ferns dominated the earth during.**
(a) Permian period
(b) Triassic period
(c) Silurian period
(d) both a and b.
- 53. Cryptogames are.**
(a) Flowering plant
(b) Non Vascular plants
(c) Flowerless plants
(d) Lower vascular plants
- 54. Which of the following are flowerless plants.**
(a) Bryophytes and gymnospsm
(b) Gymnospsm
(c) Bryophytes, pteridophytes
(d) None of these .
- 55. On the basis of morphology all plants are divided into _____ categories.**
(a) 3
(b) 4
(c) 5
(d) 2
- 56. Phanerogames are.**
(a) Seedless plants
(b) Flowering plants
(c) Flowerless plants

- (d) Non vascular plant.
- 57. Indeterminate growth occur in.**
- (a) Animals
 - (b) Plants
 - (c) Microbe
 - (d) All
- 58. Heteromorphic alternation of generation occur in.**
- (a) Bryophytes
 - (b) Pteridophytes
 - (c) Ulva
 - (d) Both a and b.
- 59. Isomorphic alternation of generation occur in.**
- (a) Ulva
 - (b) Ectocarpus
 - (c) both a and B
 - (d) Bryophyte.
- 60. The dominant generation in bryophytes is.**
- (a) Diploid gametophyte
 - (b) Haploid sporophyte.
 - (c) Diploid sporophyte
 - (d) Haploid gametophyte.
- 61. Which one is liver worts.**
- (a) Sphagnum
 - (b) Funaria
 - (c) Anthoceros
 - (d) Marchantia.
- 62. Which one is dioecious plant.**
- (a) Polytrichum
 - (b) Funaria
 - (c) Marchantia.
 - (d) Both a and c.
- 63. When both sex organ occur in the same plant so such plant is known as.**
- (a) Monoecious
 - (b) Hermaphrodite.
 - (c) Dioecious
 - (d) Both a and b.
- 64. Rhizoid is the character of.**
- (a) Sphagnum
 - (b) Anthoceros
 - (c) Rhynia
 - (d) All.
- 65. The lid like structure upon the capsule is known as.**
- (a) Paraphysis
 - (b) Operculum
 - (c) Peristome
 - (d) Protonema.
- 66. Which one is generally known as peat moss.**
- (a) Funaria
 - (b) Polytrichum
 - (c) Sphagnum
 - (d) All.
- 67. Dominant generation is pteridophytes is.**
- (a) Diploid sporophyte
 - (b) Haploid sporophyte.
 - (c) Diploid gametophyte
 - (d) None of these.
- 68. Which one vascular plants has no roots and leaves.**
- (a) Psilopsida
 - (b) Lycopsida
 - (c) Sphenopsida
 - (d) Pteropsida.
- 69. The leafless branches of selaginella is known as.**
- (a) Rhizome
 - (b) Rhizophore
 - (c) Stipe
 - (d) Both a and b.
- 70. The gametophyte of marchantia is.**
- (a) Monoecious
 - (b) Hermaphrodite
 - (c) Dioecious
 - (d) Both a and b.
- 71. The stem of which plant has ridges and furrows.**
- (a) Selaginella
 - (b) Rhynia
 - (c) Equisetum
 - (d) Adiantum.
- 72. Which one is heterogeneous group.**
- (a) Psilopsida
 - (b) Lycopsida
 - (c) sphenopsida
 - (d) Pteropsida.
- 73. Irregular gametophyte plant body which is also named as prothallus is character of.**
- (a) Adiantum
 - (b) Selainella
 - (c) Rhynia
 - (d) Equisetum.
- 74. Development of embryo is partial in.**
- (a) Pinus
 - (b) Wolfia
 - (c) Pea
 - (d) Onian.
- 75. Single fertilization is the character of.**
- (a) Bryophytes

- (b) Pteridophytes
(c) Gymnosperm
(d) All.
- 76. Seed habit of gymnosperm and angiosperm is due to.**
(a) Heterospory
(b) Pollen tube formation
(c) Intergumented mega sporangium
(d) All.
- 77. The function of antipodal cell is.**
(a) Involved in fertilization
(b) Releasing chemicals
(c) Nutritive
(d) Act as endosperm.
- 78. The inflorescences in euphorbia is.**
(a) Uniparous cyme
(b) Biparous cyme
(c) Multiparous cyme
(d) Typical raceme.
- 79. The animals of phylum porifera are.**
(a) Colonial
(b) Simple multicellular
(c) Complex multicellular
(d) Both a and b.
- 80. True coelom is formed by the splitting of.**
(a) Ectoderm
(b) Endoderm
(c) Mesoderm
(d) Gut.
- 81. Water enter to the body of sponges by.**
(a) Spiracles
(b) Ostia
(c) Osculum
(d) Madreporite.
- 82. Which one of the following is also known as cnidarian?**
(a) Aschelminthes
(b) Platyhelminthes.
(c) Coelenterata
(d) Annelida.
- 83. Polyp is.**
(a) nutritive zooid
(b) Gastrozooid
(c) Sexual Zooid
(d) a & b.
- 84. Branch intestine and sac like digestive system is the character of.**
(a) Coelenterata
(b) Annelida
(c) Mollusca
(d) Platyhelminthes.
- 85. Which one is pseudo coelomate animal.**
(a) Planaria
(b) Earthworm
(c) Snail
(d) Ascaris.
- 86. Which one cause sleeplessness and loss of appetite in children.**
(a) Tape worm
(b) Ascaris
(c) Pinworm
(d) All.
- 87. Which one is correctly match.**
(a) Arthropod — Glochidium larva
(b) Mollusc — Trochophore larva
(c) Echinoderm — Tornaria larva
(d) Hernichordate — Tornaria larva.
- 88. Tunicin is the character of.**
(a) Cephalochordate
(b) Urochordata
(c) Hemichordata
(d) Craniata.
- 89. Ichthyology is the study of.**
(a) Amphibia
(b) Pices
(c) Reptiles
(d) Birds.
- 90. Pteromygon marinus is the scientific name of.**
(a) Sharks
(b) Lamprey
(c) Hag Fish
(d) None.
- ←—————→
- English**
- 91. apple a day keeps the doctor away.**
(a) An
(b) The
(c) A
(d) Zero article.
- 92. Mount Everest is in Himalayas**
(a) A
(b) The
(c) ----
(d) An.
- 93. President of the United States was elected last year**
(a) The

- (b) A
(c) ---
(d) An
94. We spent a lot of time swimming in sea on holiday.
(a) ---
(b) A
(c) The
(d) An
95. London is on River Thames
(a) ---
(b) A
(c) the
(d) An
96. She did MA in French literature.
(a) An
(b) A
(c) ---
(d) The.
97. It's most expensive hotel in town.
(a) ---
(b) A
(c) The
(d) An
98. His birthday is on fourth of May.
(a) A
(b) The
(c) An
(d) ---
99. I bought umbrella last week.
(a) An
(b) A
(c) ---
(d) The
100. roses are my favorite flowers.
(a) ---
(b) The
(c) A
(d) an
101. The only sport I enjoy is rugby.
(a) ---
(b) The
(c) A
(d) an
102. I him yesterday.
(a) See
(b) Saw
(c) Seen
(d) Have seen.
103. He just called me.
(a) Has

- (b) Have
(c) Had
(d) Will,
104. This time tomorrow, I..... on the beach.
(a) Am lying
(b) Will lie
(c) Will be lying
105. She said that shehelp me.
(a) Will
(b) Shall
(c) Would
106. I can't run because I my leg.
(a) Have broken
(b) Broke
(c) Had broke.
107. I the bell six times but no one opened the door.
(a) Was ringing
(b) Have rung
(c) Rang
108. Gigantic means.
(a) Large
(b) Mammoth
(c) All of these
109. Placidly means
(a) Prehensile
(b) Sophisticated
(c) Brilliant
(d) All of these
110. Stupid means.
(a) Blockheaded
(b) Brainless
(c) Obtuse
(d) All of these.



Physics

111. The rapid escape of air from a burst tyre is an example of:
(a) Isothermal
(b) Adiabatic
(c) Isobaric
(d) Isochoric
112. The bicycle pump works on the basis of:
(a) 1st law of thermodynamics
(b) 2nd law of thermodynamics
(c) Law of conservation of energy
(d) Law of entropy.

- 113. When light passes from air into glass ($n= 1.5$). What happen to its frequency wave length and velocity?**
- All decreases by a factor of 1.5
 - Frequency and velocity decreases by a factor of 1.5
 - Frequency and wavelength decreases by a factor of 1.5
 - Wavelength and velocity decreases by a factor of 1.5
- 114. The principle of young's double slits experiment is based on the division of**
- Amplitude
 - Frequency
 - Velocity
 - Wavelength
- 115. A standing boy is swinging and He sits down his time period will be.**
- Increases
 - Decreases
 - No changes
 - None
- 116. If both closed and open organ pipe have same frequencies think ratio of their lengths.**
- 1 : 1
 - 1 : 2
 - 2 : 1
 - 1 : 4
 - 4 : 1
- 117. How is the interference pattern if the young double slit experiment affected was performed in still water than in air.**
- Few fringes will be visible
 - Fringes will be broader
 - Fringes will be narrower
 - No fringes will be observe
- 118. The temperature of sink of car not engine is 27C. Efficiency of engine is 25% then find the temperature of source.**
- 227C
 - 327C
 - 27C
 - 127C
- 119. The ratio of the specific heat of a gas at constant volume to its specific heat at constant pressure is**
- 1
 - Less than 1
 - More than 1
 - None
- 120. Which of the following can not be polarize.**
- X-rays
 - Light rays
 - Water waves
 - Sound waves
- 121. The intensity of a wave is proportional to the square of:**
- Amplitude
 - Time
 - Intensity
 - None of these
- 122. For higher resolution, in a diffraction grating, one needs to have:**
- Large number of ruling
 - Small number of ruling
 - No rulings at all
 - None of these
- 123. Interference fringes are of:**
- Unequal width
 - Equal width
 - Variable width
 - None of these
- 124. When the water waves reach an obstacle in a medium , they bend around the obstacle into the region behind it , this is evidence of phenomena of :**
- Refraction
 - Diffraction
 - Reflection
 - Super position
- 125. What will be the speed of the transverse wave in a string if the tension in the string remains constant and The diameter is doubled:**
- remains constant
 - Becomes half
 - becomes double
 - Becomes four times
- 126. In a transverse wave the distance between the crest and the adjacent trough is**
- $\lambda/2$
 - $\lambda/4$
 - λ
 - 2λ
- 127. Wave transport energy without transporting**
- Power
 - Work
 - Matter
 - None
- 128. The speed of sound in hydrogen is _____ times its speed in oxygen**
- Two
 - Three
 - Four
 - Sixteen
- 129. for a monoatomic gas $C_v=(3/2)R$, therefore gamma for this is:**

- (a) 3/5
- (b) 5/3
- (c) 4/15
- (d) 2/3

130. what is the correct relation between the fundamental frequency of open (f₁) and closed pipe (f₂)

- (a) f₁ = 2 f₂
- (b) f₂ = 2f₁
- (c) f₁ = f₂
- (d) f₁ = 1/f₂

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Chemistry

131. The number of pi bonds in acetylene?

- (a) 2
- (b) 3
- (c) 4
- (d) 6

132. According to VSEPR theory, how many electron pairs are present in the valence shell of carbon in CO₂?

- (a) 4
- (b) 3
- (c) 2
- (d) 6

133. In KMnO₄ manganese undergoes:

- (a) Sp³ hybridization
- (b) Sp² hybridization
- (c) Sp hybridization
- (d) All of these

134. Which hybridization occurs in oxygen of CO₂?

- (a) Sp²
- (b) Sp³
- (c) Sp
- (d) dSp²

135. C – Br bond length is 1.93 Å and C – Cl bond length is 1.76 Å. What is the C – I bond length?

- (a) 2.14 Å
- (b) 0.93 Å
- (c) 0.54 Å
- (d) None of these

136. The hybridization in HCl molecule is:

- (a) Sp³
- (b) Sp²
- (c) Sp
- (d) dSp²

137. Choose the endothermic process:

- (a) Decomposition of lime stone
- (b) Combustion of methane
- (c) Freezing of water

(d) Deposition

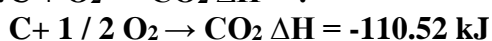
138. Emission of rays from radio - active elements is:

- (a) Spontaneous process
- (b) Non spontaneous process
- (c) Un predictable process
- (d) All of these

139. Which one is not state of function?

- (a) ΔT
- (b) ΔH
- (c) ΔP
- (d) All of these

140. C + O₂ → CO₂ ΔH = ?



- (a) -393.5 kJ
- (b) +393.5 kJ
- (c) -40 kJ
- (d) None of these

141. Which one is endothermic?

- (a) Ionization energy
- (b) Electrolysis
- (c) Thermal decomposition of LiCO₃
- (d) All of these

142. Hess's law of heat summations is:

- (a) Law of conservation of energy
- (b) Really another way of stating that energy can neither be created nor destroyed
- (c) Helpful in calculating heat of reaction which is impossible in practice
- (d) All of these

143. Hess's law is used in determination of:

- (a) Heat of formation
- (b) Heat of reaction
- (c) Heat of transition
- (d) All of these

144. The reaction Cl_(g) + 1e⁻ → Cl_(g) is:

- (a) Exothermic
- (b) Endothermic
- (c) Both (a) & (b)
- (d) None of these

145. Born Haber cycle is used to determine lattice energy of:

- (a) Molecular solid
- (b) Ionic solids
- (c) Covalent solids
- (d) Metallic solids

146. All of the following are electrolytes except:

- (a) HCl
- (b) NaOH
- (c) H₂SO₄
- (d) Urea

147. The reaction CH₄ + 2O₂ → CO₂ + 2H₂O is:

- (a) Oxidation
- (b) Reduction
- (c) Redox
- (d) None of these

148. In reaction $2\text{NaOH} + \text{Cl}_2 \rightarrow \text{NaCl} + \text{NaClO} + \text{H}_2\text{O}$. Chlorine act as:

- (a) Oxidizing agent
- (b) Reducing agent
- (c) Both (a) & (b)
- (d) None of these

149. How many electrons are lost by iron atom in the reaction $4\text{Fe} + 3\text{O}_2 \rightarrow 2\text{Fe}_2\text{O}_3$

- (a) 3
- (b) 6
- (c) 12
- (d) None of these

150. In which one of hydrogen acts as oxidizing agent?

- (a) $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$
- (b) $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$
- (c) $2\text{Na} + \text{H}_2 \rightarrow 2\text{NaH}$
- (d) All of these

151. In basic medium the coefficient of Zn, NO_3^- and OH in the following balanced equation respectively are $\text{Zn} + \text{NO}_3^- \rightarrow \text{Zn}^{+2} + \text{NH}_4^+$

- (a) 4,1,7
- (b) 7,4,1
- (c) 4,1,10
- (d) 1,4,10

152. Oxidation states of all of the atoms in potassium triiodide are:

- (a) $+1/3, -1/3, -1/3, -1/3$
- (b) $+1, +1/3, -1/3, -1/3$
- (c) $+1, -1, -1, -1$
- (d) $+1, -1, 0, 0$

153. In acid medium the reaction taking is place is: $\text{MnO}_4^- \rightarrow \text{Mn}^{+2}$ this reaction is:

- (a) Oxidized by 3 electrons
- (b) Reduced by 3 electrons
- (c) Oxidized by 5 electrons
- (d) Reduced by 5 electrons

154. SHE can act as:

- (a) Cathode
- (b) Anode
- (c) Both (a) & (b)
- (d) None of these

155. Which one is anodic reaction?

- (a) $\text{Zn} \rightarrow \text{Zn}^{+2} + 2e^-$
- (b) $\text{Cu}^{+2} + 2e^- \rightarrow \text{Cu}$
- (c) $2\text{H}^+ + 2e^- \rightarrow \text{H}_2$
- (d) All of these

156. $\text{Zn}^{+2}/\text{Zn} E^\circ_{\text{cell}} = -0.76 \text{ V}$

$\text{Fe}^{+2}/\text{Fe} E^\circ_{\text{cell}} = -0.44 \text{ V}$

If Zn is connected with iron then:

- (a) Zinc will acts as anode
- (b) Iron will acts as cathode
- (c) Zinc will acts as cathode
- (d) Both A & B

157. What is the oxidation state of hydrogen in NaBH_4 ?

- (a) Zero
- (b) -1
- (c) +1
- (d) None of these

158. The stronger the oxidizing agent the greater may be its:

- (a) Standard reduction potential
- (b) Standard oxidation potential
- (c) Ionic nature
- (d) None of these

159. Which is not true for SHE:

- (a) The hydrogen ion concentration is 1M
- (b) Temperature is 25°C
- (c) Pressure of hydrogen gas is 1 atm
- (d) Its contains metallic conductor which does not absorb hydrogen

160. The number of electrons lost by Cl in the reaction: $\text{Cl}^- \rightarrow \text{ClO}_3^-$

- (a) 1
- (b) 2
- (c) 5
- (d) 6



Biology

161. Summer sleep is known as.

- (a) Hibernation
- (b) Aestivation
- (c) Winter sleep
- (d) All.

162. Single occipital condyle is the character of.

- (a) Mammals
- (b) Reptiles
- (c) Birds
- (d) Amphibia.

163. Functional third eyelid, the nictating membrane is the character of.

- (a) Birds
- (b) Pisces
- (c) Mammals
- (d) Reptiles.

164. Which one flightless bird.

- (a) Ostrich
- (b) EMU

- (c) Kiwi
(d) All.
- 165. Ovo-viviparous belong to.**
(a) Prototheria
(b) Monotremata
(c) Metatheria
(d) Both a and b.
- 166. Gastrovascular cavity of coelenterate perform.**
(a) Excretion
(b) Digestion
(c) Respiration
(d) All.
- 167. Water enter to the water vascular system in echinoderms by.**
(a) Madreporite
(b) Spiracles
(c) Osculum
(d) Ostia
- 168. Ambulacral system is the character of.**
(a) Porifera
(b) Echinoderm
(c) Arthropod
(d) All.
- 169. Taxols which is used in the treatment of breast cancer obtain from.**
(a) Taxus baccata
(b) Atropa beladona
(c) English yew
(d) Both a & c.
- 170. Endosperm of angiosperm is.**
(a) Haploid
(b) Diploid
(c) Triploid
(d) Polyploid.
- 171. Secondary macro nutrient are.**
(a) N,P,K
(b) Fe, Cl, P
(c) Ca, Fe, K
(d) Ca, Mg, S.
- 172. Grass clippings and tree leaves is the best source of.**
(a) Primary Macronutrient
(b) Secondary Macronutrient
(c) Micro-nutrient
(d) All.
- 173. All are living cells except.**
(a) Sieve tubes
(b) Companion cell
(c) Parenchyma cells
(d) Tracheids.
- 174. The oozing of water in droplet form the leaves of plants are known as.**
(a) Transpiration
(b) Guttation
(c) Hemorrhaging
(d) Ascent of sap.
- 175. The authentic force for the ascent of sap is.**
(a) Root Pressure
(b) Guttation
(c) Imbibition
(d) Transpiration Pull.
- 176. Sunken stomata is the character of.**
(a) Vallisneria
(b) Rhizophora
(c) Acacia
(d) Peach.
- 177. Linum usitatissimum is the botanical name of.**
(a) Flax
(b) Hemp
(c) Ramie
(d) Jute.
- 178. Inhibition of lateral buds cause by.**
(a) Gibberellin
(b) Cytokinin
(c) ABA
(d) Auxin
- 179. Hormone which is produce during the time of stress in plant is.**
(a) Ethlene
(b) Vernalin
(c) ABC
(d) Gibberellin.
- 180. Muscles of mastication are.**
(a) Masseter
(b) Temporalis
(c) Both a & b
(d) Quadrante muscle.
- 181. Lingual lipase is secreted by.**
(a) Ebner gland
(b) Salivary gland
(c) Gastric Gland
(d) Intestinal wall.
- 182. Which one is exocrine gland.**
(a) Salivary gland
(b) Ebner Gland
(c) Islets of Langerhans
(d) Both a & b
- 183. Which one is hunger hormone.**

- (a) Gastrin
(b) Histamin
(c) Ghrelin
(d) Somato-stain.
- 184. Ghrelin is secreted From.**
(a) Fundus
(b) Cardiac end
(c) Pyloric end
(d) Body of stomach.
- 185. Digestion of lipid completed in.**
(a) Duodenum
(b) jejunum
(c) Ileum
(d) Caecum.
- 186. Per day secretion of pancreatic fluid is.**
(a) 400-500
(b) 500-900
(c) 500-800
(d) 800-1100.
- 187. What produces systolic blood pressure/**
(a) Contraction of the right atrium
(b) Contraction of the right ventricle
(c) Contraction of the left atrium
(d) Contraction of the left ventricle.
- 188. Human heart is.**
(a) Myogenic
(b) Neurogenic
(c) Cardiogenic
(d) Digenic
- 189. Typical lub-dub sounds heard in heart in heartbeat are due to.**
(a) Closing of bicuspid and tricuspid valves.
(b) Closing of semilunar valves
(c) Blood under pressure through aorta.
(d) Closure of bicuspid- tricuspid valves followed by semilunar valves.
- 190. Bicuspid valve connects.**
(a) Left atrium and left ventricle
(b) Left atrium and right ventricle
(c) Right atrium and left ventricle
(d) Right atrium and right ventricle
- 191. Pacemaker is situated in heart.**
(a) In the wall of right atrium
(b) On interauricular septum
(c) On interventricular septum
(d) In the wall of left atrium.
- 192. Lymph returns-----to blood.**
(a) Oxygen
(b) Carbon dioxide
(c) Interstitial fluid
(d) White blood cells.
- 193. Lymph most closely resembles which of the following?**
(a) Blood
(b) Urine
(c) Water
(d) Interstitial fluid
- 194. Which of these factors has little effect on blood flow in arteries?**
(a) Total cross sectional area of vessels
(b) Blood pressure
(c) Skeletal muscle contraction
(d) Heartbeat.
- 195. The Sino Atrial node (SA node).**
(a) Regulates the rhythm of contraction
(b) Is also called AV node
(c) Regulates the rate of contraction
(d) Is also called bundle of His.
- 196. T and B cells are.**
(a) lymphocytes
(b) Macrophages
(c) Natural killer cells
(d) Red blood cells
- 197. Plasma cells are.**
(a) The same as memory cells
(b) Formed from blood plasma
(c) B cells that are actively secreting antibody
(d) Inactive T cells carried in the plasma.
- 198. Antibodies combine with antigens.**
(a) At variable regions
(b) At constant region
(c) Only if macrophages are present
(d) Both A and C are correct.
- 199. In addition to be immune system, we are protected from disease by.**
(a) Normal body temperature
(b) Hormones
(c) Antigens
(d) Mucous membrane and cilia
- 200. when one receives a booster shot for polio which type of cell is most directly stimulated?**
(a) killer T-cell
(b) memory cells
(c) phagocytes
(d) suppressor cells.



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