

- The compound that cannot undergo addition reaction is:
 - Cyclopropane
 - Benzene
 - Butyne
 - None of the above
- Benzene gives more stable product when undergo:
 - Nucleophilic addition reaction
 - Oxidation reaction
 - Electrophilic substitution reaction
 - Electrophilic addition reaction
- For callus formation, auxin and cytokinin are required in which ratio?
 - Balanced
 - Only cytokinin required
 - Low auxin, very high cytokinin
 - Only auxin
- For which purpose myeloma cells (cancerous B lymphocytes) are used in the production of monoclonal antibodies?
 - Increased rate of cell division
 - Immunization with antigen
 - To avoid contamination
 - As nutrient in media
- DNA polymerase adds nucleotide to the 3' end of the primer so the direction of replication will be?
 - 5' to 3'
 - 3' to 5'
 - 3' end of the primer to 3' end of template strand
 - 3' end of template strand to the 3' end of the primer
- The range of projectile is the same for two angles which are mutually:
 - Perpendicular
 - Supplementary
 - Complementary
 - 270°
- A wave of amplitude 20 mm has intensity I_1 , another wave of the same frequency but of amplitude 5 mm has intensity I_2 , what is I_1/I_2 ?
 - 2
 - 4
 - 16
 - 256
- The resistance of a device is designed to change with temperature. What is device?
 - A light-dependent resistor
 - A potential divider
 - A semiconductor diode
 - A thermistor
- I enjoy _____ tennis.
 - to play
 - plays
 - playing
 - to playing
- Catalytic converter reduces the emission of
 - Unburnt hydrocarbons
 - CO
 - NO
 - All of the above
- What is the name of the carboxylic acid given below?

$$HOOC(CH_2)_4COOH$$
 - Propane dioic acid
 - Pentane dioic acid
 - Pentane dicarboxylic acid
 - Propane dicarboxylic acid
- OH^- (alcoholic) + $CH_3(CH_2)_2Br \rightarrow$ product the nature of OH^- in the above reaction is:
 - Nucleophile
 - Lewis base
 - Ligand
 - All of the above
- When the sperm count is high, inhibit hormone release increases which:
 - Inhibits anterior pituitary release of follicle stimulating hormone
 - Increase anterior pituitary release of follicle stimulating hormone
 - Inhibit release of luteinizing hormone
 - Increase release of luteinizing hormone
- Implantation of embryo takes place in which week of pregnancy?
 - 1st
 - 2nd
 - 3rd
 - 4th
- XX-XY types of sex determination pattern is present in which of the following organisms?
 - Humans
 - Butterflies
 - Grasshopper
 - Drosophila
- When will 1 C of charge pass a point in an electrical circuit?
 - When 1A moves through a voltage of 1V
 - When a power of 1 W is used for 1 s
 - When the current is 5 mA for 200 s
 - When the current is 10 A for 10 s
- A cell of internal resistant 2.0Ω and electromotive force (e.m.f.) 1.5 V is connected to a resistor of resistance 3.0Ω what is the potential difference across 3Ω resistor.
 - 5 V
 - 1.2 V
 - 0.9 V
 - 0.6 V
- In a stationary wave the distance between consecutive antinodes is 25 cm. if the wave velocity is 300 ms^{-1} then the frequency of the wave will be:
 - 150 Hz
 - 300 Hz
 - 600 Hz
 - 750 Hz

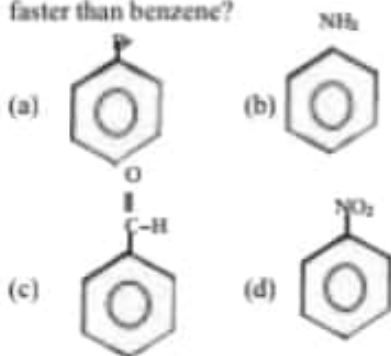
19. The path _____ paved, so we were able to walk through the path.
 (a) had been (b) was (c) has been (d) being
20. Choose the correct sentence.
 (a) Naila was so exhausted that she lain down for a nap.
 (b) Naila was so exhausted that she liad down for a nap.
 (c) Naila was so exhausted that she was lying down for a nap.
 (d) Naila was so exhausted that she will lay down for a nap.
21. The bond energy of a H_2 molecule $H_2 \rightarrow 2H$ is:
 (a) 436 KJ/mol (b) 40.7 KJ/mol
 (c) 272 KJ/mol (d) 436+Avogaras no KJ/mol
22. Considering the molecule, orbital theory (MOT) choose the correct relative energies order.
 (a) $\sigma_{1s} < \sigma_{1s}^* < \sigma_{2s} < \sigma_{2s}^* < \pi_{2p} < \pi_{2p}^* < \sigma_{2p} < \sigma_{2p}^*$
 (b) $\sigma_{1s} < \sigma_{1s}^* < \sigma_{2s} < \sigma_{2s}^* < \pi_{2p} < \pi_{2p}^* < \sigma_{2p} < \sigma_{2p}^*$
 (c) $\sigma_{1s} < \sigma_{1s}^* < \sigma_{2s} < \sigma_{2s}^* < \pi_{2p} < \pi_{2p}^* < \sigma_{2p} < \sigma_{2p}^*$
 (d) $\sigma_{1s} < \sigma_{1s}^* < \sigma_{2s} < \sigma_{2s}^* < \pi_{2p} < \pi_{2p}^* < \sigma_{2p} < \sigma_{2p}^*$
23. The oxidation of pent -2-one (2-pentanone) with nascent oxygen gives:
 (a) Propanal (b) Propanoic acid
 (c) Ethanoic acid (d) Pentanoic acid
24. If medulla oblongata of a person brain is damaged which of the following processes will be disturbed?
 (a) Thinking (b) Sleep
 (c) Thirst (d) Swallowing
25. Otitis media is an inflammation of which part of the body?
 (a) Brain (b) Middle ear
 (c) Lungs (d) Urinary tract
26. In which of the following disorder the structure and function of normal spinal cord is damaged?
 (a) Arthritis (b) Sciatica
 (c) Spondylosis (d)
27. A stationary nucleus has nucleon number A . The nucleus decays by emitting a proton with speed v to form a new nucleus with speed u . The new nucleus and the proton move away from one another in opposite direction. Which equation gives v in terms of A and u ?
 (a) $v = (A/4 - 1) u$ (b) $v = (A - 1) u$
 (c) $v = Au$ (d) $v = (A + 1) u$
28. a person, travelling on a motorway a total distance of 200 km, travels the first 90 km at an average speed of 80 km h^{-1} . Which average speed must be obtained for the rest of the journey if the person is to reach the destination in a total time of 2 hours 0 minutes?
 (a) 110 km h^{-1} (b) 122 km h^{-1}
 (c) 122 km h^{-1} (d) 126 km h^{-1}
29. An object of mass "m" travelling with speed "v" has a head-on collision with another object of mass "m" travelling with speed "v" in the opposite direction. The two objects stick together after the collision. What is the total loss of kinetic energy in the collision.
 (a) 0 (b) $\frac{1}{2}mv^2$ (c) mv^2 (d) $2mv^2$
30. He asked me what my name was and what I did.
 (a) He said to me, "What was my name and what did I do?"
 (b) He said to me, "What is your name and what do you do?"
 (c) He said to me, "What my name was and what I do?"
 (d) He said to me, "What his name was and what did he do?"
31. Four beakers containing ethanal, ethanol, propanone and phenol separately. Aqueous bromine was added to each beaker. A white ppt was produced in one beaker. This beaker contain:
 (a) Ethanol (b) Phenol (c) Ethanal (d) propanone
32. To differentiate between the white ppt of $AgCl$ and off-white ppt of $AgBr$ we use:
 (a) Dil. Solution of $NaOH$
 (b) Dil. Solution of $Pb(NO_3)_2$
 (c) Dil. Solution of NH_3
 (d) Dil. Solution of $FeCl_3$
33. $CH_3CH_2NH_2 + C_6H_5COCl \rightarrow$ product
 (a) Sheft's base (b) Diazonium salt
 (c) Amide (d) Imine + Amide
34. If the primer annealing temperature is increased to 94 . What will happen?
 (a) Annealing (b) Extension
 (c) No annealing (d) Primer-dimer formation
35. Choose acids that are showing leveling effect.
 i) HCl ii) HCl iii) HCl iv) HF
 (a) i & iv (b) i, iii & iv
 (c) iii & iv (d) i, ii, & iii

36. The experiments by Hershey and Chase helped confirm that DNA was the hereditary material on the basis of the finding that:
- Radioactive phage were found in the pellet
 - Radioactive phage were found in the supernatant
 - Radioactive sulfur was found inside the cell
 - Radioactive phosphorus was found in the cell
37. How many nucleotides are 12 mRNA codons?
- 12
 - 24
 - 36
 - 48
38. Which of the following is a suitable vector to be incorporated with a large external DNA fragment?
- Small size vector
 - Large size vector
 - Large size vector with no origin of replication
 - Small size vector with no origin of replication
39. A value for the acceleration of free fall on Earth is given as $(10 \pm 2) \text{ m s}^{-2}$. Which statement is correct?
- The value is accurate but not precise.
 - The value is both precise and accurate.
 - The value is neither precise nor accurate.
 - The value is precise but not accurate.
40. Which experimental technique reduces the systematic error of the quantity being investigated?
- Adjust an ammeter to remove its zero error before measuring a current
 - Measuring several internodal distances on a standing wave to find the mean internodal distance
 - Measuring the diameter of a wire repeatedly and calculating the average
 - Timing a large number of oscillations to find a period
41. A metal sphere of radius r is dropped into a tank of water. As it sinks at speed v , it experiences a drag force F given by $F = k r v$, where k is a constant. What are the S.I base units of k ?
- $\text{Kg m}^2 \text{ s}^{-1}$
 - $\text{Kg m}^2 \text{ s}^{-2}$
 - $\text{Kg m}^3 \text{ s}^{-1}$
 - Kg m s^{-2}
42. Choose the correct sentence.
- How long are you wearing glasses?
 - How long do you wear glasses?
 - How long are you wear glasses?
 - How long have you been wearing glasses?
43. A Carnot engine working between 200 K and 400 K has work output of 600 J per cycle. How much heat energy is supplied to the engine from the source in each cycle.
- 1400 J
 - 1200 J
 - 1700 J
 - 1300 J
44. What happens when charge is placed on a soap bubble?
- It collapse
 - Its radius increases
 - Its radius decreases
 - None of the above
45. Choose the antonym for the word "ABROGATE"
- Transgress
 - Signify
 - Alleviate
 - Ratify
46. Which ion is stable in aqueous solution?
- Sc^{3+}
 - Li^{2+}
 - Ba^{3+}
 - Na^+
47. Colloidal particles can be separated by using:
- Ordinary filter paper
 - Coarse filter paper
 - Fine filter paper
 - Extremely fine filter paper
48. Consider the following reaction
- $$2\text{FeCl}_3 + 2\text{KI} \rightarrow 2\text{FeCl}_2 + 4\text{KI} + 2\text{I}_2$$
- Rate = $k[\text{FeCl}_3]^2[\text{KI}]^2$ choose the correct molecularly and order of the reaction respectively
- 2 and 2
 - 6 and 2
 - 8 and 3
 - 8 and 2
49. Which of the following nutrient is incorrectly paired with its function in plant?
- Iron – cytochromes and chlorophyll synthesis
 - Molybdenum – cell permeability
 - Cobalt – required by nitrogen fixers
 - Calcium – formation of cell wall
50. Which cells are responsible for the movement of sugar as per mass flow hypothesis?
- Tracheids, vessel elements
 - Tracheids, companion cells
 - Vessel elements, companion cells
 - Companion cell, sieve-tubes
51. After buying green bananas or unripe avocados, they can be kept in a brown bag to ripen. The hormone released by the fruit and trapped in the bag is probably:
- Abscisic acid
 - Cytokinin
 - Ethylene
 - Gibberellic acid
52. For the location/detection of a gene in a DNA library which of the following is used?
- Primer
 - Probe
 - Restriction enzyme
 - Taq polymerase
53. Under UV illumination, DNA bands are seen in agarose due to which of the following?
- Agarose
 - Charge of DNA
 - Fluorescent dye
 - Radioactive dye

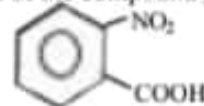
54. When a car travelling with constant velocity passes a stationary observer, the observer hears a change in the frequency of the sound emitted by the car. Which statement is correct?
- The change in frequency is greater as the car moves away than as it approaches.
 - The greater the speed of the car, the greater the change in observed frequency.
 - The observed frequency is lower as the car moves towards the observer and higher as the car moves away from the observer.
 - The volume of the sound heard by the observer does not change as the car approaches.
55. A parachutist is falling constant (terminal) velocity. Which statement is not correct?
- Gravitational potential energy is converted into kinetic energy of the air.
 - Gravitational potential energy is converted into kinetic energy of the parachutist.
 - Gravitational potential energy is converted into thermal energy of the air.
 - Gravitational potential energy is converted into thermal energy of the parachutist.
56. The time period of a simple pendulum is 2 seconds. If its length is increased by 4 times, then its period becomes:
- 16 s
 - 12 s
 - 8 s
 - 4 s
57. Choose the correct sentence.
- The village folk were present.
 - The village folk was present.
 - The village folks were present.
 - The village folks was present.
58. The number of chiral centres in a molecule of 5-bromo 3-chloro hexan-2-ol is /are:
- 1
 - 3
 - 2
 - 5
59. Which group when attached to benzene will increase its reactivity:
- $-NO_2$
 - $-NH_2$
 - $-C \equiv N$
 - $-COR$
60. The compound which is purely acidic is:
- $Mg(OH)_2$
 - $Al(OH)_3$
 - $Si(OH)_4$
 - None of the above
61. Which of the following is a non-sense codon?
- UGA
 - UAU
 - CAU
 - GAU
62. If a disorder is not present in a child family but the fetus itself is infected before birth, it is known as?
- Somatic mutation
 - Hereditary mutation
 - Germ line mutation
 - De novo mutation
63. What will happen if a nucleotide is deleted from a gene having 9 nucleotides in its transcriptional unit?
- Change in phenotype
 - No change in phenotype
 - Synthesis of 3 amino acids
 - Synthesis of 4 amino acids
64. Work function for a certain surface is 3.26 eV. Minimum frequency, light must have in order to eject electron from surface will be:
- $1.6 \times 10^{15} \text{ Hz}$
 - $3.2 \times 10^{15} \text{ Hz}$
 - $4.8 \times 10^{15} \text{ Hz}$
 - $7.87 \times 10^{14} \text{ Hz}$
65. The unit of Planck's constant is the same as that of:
- Angular momentum
 - Work
 - Force
 - Torque
66. A radioactive substance has a half-life of 60 minutes. During 3 hours, the percentage of the material that decayed would be:
- 12.5%
 - 87.5%
 - 8.5%
 - 25.1%
67. While the city has earned record revenue this year, _____ well behind in exports.
- it still lag
 - it still lags
 - it lag still
 - it lags still
68. The compound which can be hydrolyzed by means of water is:
- CCl_4
 - $SiCl_4$
 - CH_4
 - None of the above
69. Choose the correct statement about cycloalkanes:
- Cyclopropane and cyclobutane are liquids at room temperature
 - Cycloalkanes are insoluble in ethanol and ether but soluble in water
 - Their melting and boiling points show a gradual increase with increase in no. of carbon.
 - Both (b) & (c) are correct
70. Which one is a strong nucleophile:
- $C_2H_5 - O^-$
 - $H - O^-$
 - NH_3
 - $C_2H_5 - O^-$
71. Choose the correct arrangement of the various regions of the electromagnetic spectrum in terms of wave lengths.
- $IR > uv > visible > microwave > radio frequency$
 - $Microwave > IR > uv > visible > radio frequency$
 - $Radio frequency > microwave > IR > visible > uv$
 - $Visible > IR > uv > microwave > radiowave$
72. If one of the following component is missing bacteria can not increase the number of its plasmid copies?
- Antibiotic resistant gene
 - Origin of replication
 - Cloning site
 - Ligase enzymes

73. Identify the mismatch pair in the following.
- Cyanobacteria- primary producer
 - Grasshopper-primary consumer
 - Fungi-decomposer
 - Zooplankton-secondary consumer
74. What will happen if a vector (plasmid) is cut with a different restriction enzyme which cuts the external DNA to be incorporated in the vector (plasmid)?
- Ligation
 - No ligation
 - Tight ligation
 - Cloning
75. The acceleration of free fall on the Moon is one-sixth of that on Earth. On Earth, it takes time "t" for a stone to fall from rest a distance of 2 m on the moon. What is the time taken of stone to fall from rest a distance of 2m on the moon?
- 6t
 - t/6
 - $t\sqrt{6}$
 - $\frac{t}{\sqrt{6}}$
76. Before a thunderstorm, the hairs on your head sometimes stand on end. A hair with mass 0.50 mg and charge 1.0 pC is supported by a force due to an electric field. Ignore any forces other than the weight of the hair and the electric force. What is the electric field strength?
- $4.9 \times 10^3 \text{ N C}^{-1}$
 - $4.9 \times 10^5 \text{ N C}^{-1}$
 - $4.9 \times 10^6 \text{ N C}^{-1}$
 - $4.9 \times 10^8 \text{ N C}^{-1}$
77. Two lamps are connected in series to a 250 v power supply. One lamp is rated 240 v, 60 w and the other is rated 10 v, 2.5 w. Which statement most accurately describes what happens?
- Both lamps light at less than their normal brightness.
 - Both lamps light at their normal brightness.
 - Only the 240v lamp lights
 - The 10v lamp blows.
78. Every person must learn _____.
- that how wisely his time can be used.
 - to make wise use of this time.
 - that his time needs a wise uses.
 - to using his time in a wisely manner.
79. In movies during fighting a blood red solution is using as an artificial blood. Which of the following complex ion is used for this solution?
- $[\text{Fe}(\text{H}_2\text{O})_6]^{+2}$
 - $[\text{Co}(\text{NH}_3)_4(\text{H}_2\text{O})_2]^{+2}$
 - $[\text{Fe}(\text{SCN})(\text{H}_2\text{O})_5]^{+2}$
 - $[\text{Fe}(\text{H}_2\text{O})_6]^{+3}$
80. The compound which can form hydrogen bond with water is:
- $\text{CH}_3\text{-O-CH}_3$
 - $\text{CH}_3\text{-CH}_2\text{-OH}$
 - $\text{CH}_3\text{-CH}_2\text{-NH}_2$
 - None of the above
81. The compound with most exothermic lattice energy is:
- CaCl_2
 - K_2O
 - CaO
 - BaCl_2
82. Sarcolemma is the membrane around?
- Bone
 - Joints
 - Muscle fiber
 - Heart
83. The deficiency of calcitonin result in ?
- Bone formation
 - Kidney stone
 - Hyperthyroidism
 - Hypothyroidism
84. In which of the following the female workers are sterile?
- Ants
 - Honeybee
 - Baboon
 - Parrots
85. If in a situation some bacteria infected by a certain. Phages had somehow developed the ability to make a particular amino acid that was not in their genes before. What would be the possible explanation to this new ability?
- Introduction
 - Transformation
 - Transduction
 - Conjugation
86. Identify in which of the following the genetic information is catalyzed using reverse transcriptase?
- Protein \rightarrow DNA
 - RNA \rightarrow DNA
 - DNA \rightarrow RNA
 - RNA \rightarrow Protein
87. Which one is not a opportunistic disease related to HIV infection.
- Destruction of body immune system
 - Recurrent pneumonia
 - Pulmonary tuberculosis
 - Toxoplasmosis
88. A tuning fork A produces 4 beats / second with another tuning fork B of frequency 280.Hz.When fork A is loaded with a little wax, the beat frequency change to 2. The frequency of fork A before loading is:
- 292 Hz
 - 284 Hz
 - 290 Hz
 - 288 Hz
89. The sound wave of frequency more than 20 khz are termed as:
- Supersonic
 - Audible
 - Infrasonic
 - Ultrasonic
90. The refractive index is equal to the tangent of the angle of polarization. It is called:
- Brewster's Law
 - Malu's Law
 - Bragg's Law
 - Grimaldi's Law
91. "He is busy. Would you like to leave a message?" said the assistant.
- The assistant told that he is busy and asked me to leave a message.
 - The assistant told that he was busy and ask me to leave a message.
 - The assistant told that he was busy and asked me to leave a message.

- (d) The assistant told that he was busy and asked me to leave a message?
92. The less energetic and more stable compound among the following is:
 (a) Cyclobutane (b) Hex-1-ene
 (c) Cyclopropane (d) Propene
93. Amorphous solids are made by fusing silicates with:
 (a) Boric acid (b) Aluminum oxide
 (c) Phosphorus pent oxide (d) All of the above
94. What is the product when chlorine gas is passed over element silicon in powdered state on heated it produce colorless liquid having formula?
 (a) SiCl_2 (b) SiCl_4 (c) Si_2Cl_6 (d) SiCl
95. Compound resistant to thermal decomposition is:
 (a) Li_2CO_3 (b) NaNO_3 (c) $\text{Ba}(\text{NO}_3)_2$ (d) Na_2CO_3
96. If CO_2 level increase from the normal level, what will happen?
 (a) Decrease in sea level (b) Increase in sea level
 (c) Longer winter season (d) Daytime will increase
97. Approximately how much calories of free energy is stored in plant biomass for every mole of $\text{C}_6\text{H}_{12}\text{O}_6$ fixed during photosynthesis?
 (a) 110 (b) 112 (c) 114 (d) 116
98. Which of the following vaccine has least side effects
 (a) Attenuated vaccine (b) Killed vaccine
 (c) Subunit vaccine (d) Toxoid vaccine
99. The energy stored in the spring of watch is:
 (a) Kinetic energy (b) Electric energy
 (c) Elastic potential energy (d) Solar energy
100. The kinetic energy and potential energy of a particle executing simple harmonic motion will be equal for the displacement (where x_0 is the amplitude)
 (a) $x_0\sqrt{\frac{2}{3}}$ (b) $\frac{x_0}{2}$ (c) $\frac{x_0}{\sqrt{2}}$ (d) $x_0\sqrt{2}$
101. If x-component of a vector is $\sqrt{3}$ and y-component is 1, then the angle made by the vector along x-axis is:
 (a) 60° (b) 30° (c) 45° (d) 90°
102. Which compound will undergo substitution reaction faster than benzene?



103. The IUPAC name of the compound given below:



- (a) M- nitrobenzene acid
 (b) O- nitrobenzene methanoic acid
 (c) O- nitrobenzoic acid
 (d) None of the above
104. The first organisms that oxygenated the atmosphere:
 (a) Cyanobacteria (b) Phototrophic organisms
 (c) Anaerobic organisms (d) All of the above
105. What event is thought to have contributed to the evolution of eukaryotes?
 (a) Global warming (b) Glaciation
 (c) Volcanic activity
 (d) Oxygenation of the atmosphere
106. Which of these locomotor organs would likely be the shortest?
 (a) A flagellum (b) A cilium
 (c) An extended pseudopod (d) A pellicle
107. In young's double slit experiment with sodium light, the slits are 0.589 m apart. What is the angular width of the third maximum given $\lambda = 589 \text{ nm}$
 (a) $\sin^{-1}(3 \times 10^{-6})$ (b) $\sin^{-1}(3 \times 10^{-5})$
 (c) $\sin^{-1}(0.33 \times 10^{-6})$ (d) $\sin^{-1}(0.33 \times 10^{-5})$
108. Which of the following cannot be polarized?
 (a) Radio waves (b) Ultraviolet rays
 (c) X-rays (d) Ultrasonic waves
109. When a ray of light enters a glass slit from air:
 (a) Its wavelength decreases
 (b) Its wavelength increases
 (c) Its frequency increases
 (d) Its frequency decreases
110. Choose the antonym of the word "UNTENABLE"
 (a) Tender (b) Sheepish
 (c) Supportable (d) Tremulous
111. Coagulation of proteins may be caused by:
 (a) Heat (b) Change in PH
 (c) Heavy metal salts (d) All of the above
112. Kolbe's electrolysis of sodium butyrate $\text{CH}_3\text{CH}_2\text{CH}_2\text{COONa}$ gives:
 (a) C_6H_{12} (b) C_6H_{14} (c) C_5H_{10} (d) C_5H_{12}
113. Chlorine gas dissolve in water to some extent to give:
 (a) Yellow colored solution
 (b) Greenish colored solution

- (c) Bluish colored solution (d) Colorless solution
114. One of the following statement is true regarding Basidiomycota:
- (a) They are most important source of antibiotics
 (b) They have known sexual stage
 (c) Hyphae fuse to give rise to dikaryotic mycelium
 (d) The vast majority of spores are formed asexually
115. The sprouting gametophyte of a moss consists of a filamentous, branched structure called:
- (a) Mycelium (b) Hyphae (c) Protonema (d) Bud
116. Which seedless plant is a renewable source of energy ?
- (a) Club mass (b) Horsetail
 (c) Sphagnum moss (d) Fern
117. Light of waves $500 \times 10^{-9} \text{m}$ falls normally on a plane diffraction grating having 8×10^3 lines per cm. The minimum number of images seen is:
- (a) 3 (b) 4 (c) 5 (d) 1
118. The speed of sound in air at NTP 300 m/s. If the air pressure become 4 times then the speed of the sound will be:
- (a) 150m/s (b) 300m/s (c) 600 m/s (d) None
119. Standing waves are produced in 10m long stretched string. If the string vibrates in 5 segments and wave velocity is 20m s^{-1} . Its frequency is:
- (a) 2 Hz (b) 4 Hz (c) 5 Hz (d) 10 Hz
120. Why did your supervisor take such a strong disciplinary action when you were innocent ?
- (a) Why has such a strong disciplinary action taken by your supervisor when you were innocent?
 (b) Why was such a strong disciplinary action being taken by your supervisor ?
 (c) Why was such a strong disciplinary action taken by your supervisor when you were innocent?
 (d) Why such a strong disciplinary action was taken by your supervisor when you were innocent?
121. Ka values of some compound are given below select the correct order of acidic strength:
- (a) $\text{ROH} > \text{H}_2\text{O} > \text{C}_2\text{H}_5\text{OH} > \text{RCOOH}$
 (b) $\text{C}_2\text{H}_5\text{OH} > \text{H}_2\text{O} > \text{ROH} > \text{RCOOH}$
 (c) $\text{RCOOH} > \text{C}_2\text{H}_5\text{OH} > \text{H}_2\text{O} > \text{ROH}$
 (d) $\text{RCOOH} > \text{ROH} > \text{C}_2\text{H}_5\text{OH} > \text{H}_2\text{O}$
122. The compound which cannot be hydrolyzed by water is:
- (a) $\text{CH}_3 - \text{CH}_2 - \text{C} - \text{Br}$
 (b) $\text{CH}_3 - \text{CH}_2 - \text{O} - \text{CH}_2 - \text{CH}_3$
 (c) $\text{CH}_3 - \text{CH}_2 - \text{C} - \text{NH}_2$ (d) None of the above
123. $\text{KOH alcoholic} + \text{CH}_3\text{C}(\text{CH}_3)_2\text{CH}_2\text{Br}_{(a)} \rightarrow$ The reactants in the condition given will undergo:
- (a) Nucleophilic substitution reaction
 (b) Elimination reaction
 (c) Nucleophilic addition (d) None of the above
124. Phosphorus (white) catches fire in air and burns with the formation of white smoke the product formed is:
- (a) Phosphorus (iii) oxide
 (b) Phosphorus (v) oxide
 (c) Phosphorus (ii) oxide (d) Both (a) & (b)
125. Coordination number six complexes having d^2sp^3 hybridization exist in:
- (a) Tetrahedral shape (b) Square planar shape
 (c) Trigonal bipyramidal shape (d) Octahedral shape
126. What types of hybridization is/ are present in Hex-4-ene 1-yne:
- (a) sp^2 (b) sp (c) sp and sp^2 (d) sp , sp^2 , sp^3
127. In order to see various aspects of specimen a three dimensional image of the object can be produced using:
- (a) Compound microscope
 (b) Dark-field microscope
 (c) Transmission electron microscope
 (d) Scanning electron microscope
128. The usual position of the two centrioles in relation to each other is at right angle in:
- (a) Higher plant cell (b) Lower plant cells
 (c) Animal cells (d) Both (b) & (c)
129. In saturated fatty acids more hydrogen are not accommodated because of:
- (a) Presence of single bonds between carbon atoms
 (b) Presence of Double bonds between carbon atoms
 (c) Presence of triple bonds between carbon atoms
 (d) Absence of bond between carbon atoms
130. A particle executes SHM along a straight line. Its amplitude is A. The potential energy of the particle is equal to the kinetic energy, when the displacement of the particle from the mean position is:
- (a) Zero (b) $\pm A/2$ (c) $\pm A/\sqrt{2}$ (d) 2A
131. In S.H.M., the fraction of kinetic energy to total energy when displacement is one-half of the amplitudes is:
- (a) $\frac{1}{8}$ (b) $\frac{1}{2}$ (c) $\frac{1}{4}$ (d) $\frac{3}{4}$
132. Laplace corrected Newton's formula for the velocity of sound in gases, because the sound propagates:
- (a) As longitudinal waves (b) Adiabatically
 (c) Isothermally (d) Under isobaric conditions
133. Rhizobium belongs to:
- (a) Beta-protobacteria (b) Gama-protobacteria
 (c) Alpha-protobacteria (d) Delta-protobacteria
134. Poisonous red-tides in coastal area are caused by the blooms of:
- (a) Euglenoids (b) Rhodophyta
 (c) Diatoms (d) Dinoflagellates
135. Two bodies are dropped from different heights h_1 and h_2 . The ratio of the times taken by them to reach the ground will be
- (a) $h_2^2 : h_1^2$ (b) $h_1 : h_2$
 (c) $\sqrt{h_1} : \sqrt{h_2}$ (d) None of them

136. A bullet of mass m moving with a velocity v is fired into large wooden block of mass M . of the bullet remains embedded in the wooden block, the velocity of the system will be:
- (a) $\frac{M}{M+m} v$ (b) $\frac{m}{M+m} v$
 (c) $\frac{M}{M-m} v$ (d) $\frac{m}{M-m} v$
137. A particle is moving with a constant speed along a straight line. A force is NOT required to:
- (a) Increase Speed
 (b) Decrease the momentum
 (c) Change the direction
 (d) Keep it moving with uniform velocity
138. He is grieving _____ his deceased father.
 (a) at (b) for (c) on (d) over
139. Which of the following atoms in the given oxidation state have the highest electro negativity.
- (a) Mo (ii) (b) Mo (iii)
 (c) MO (v) (d) Mo (vi)
140. The existence of He_2 is not possible because
- (a) It would be disproportion
 (b) It would be radio active
 (c) It violate the Pauli Exclusion principle
 (d) No H – H bond would form
141. Choose the anisotropic behavior
- (a) Coefficient of thermal expansion
 (b) Lattice energy
 (c) Viscosity
 (d) Infrared Spectroscopy
142. *Acetabularia mediterranea* is:
- (a) A fungus (b) An algae
 (c) A protozoan (d) A prokaryote
143. Excess of Ag_2CrO_4 was dissolved in distilled water its solubility was found to be $1.3 \times 10^{-4} \text{ mol dm}^{-3}$ what is the solubility product:
- (a) $K_{sp} = [1.3 \times 10^{-4}]^2 [1.3 \times 10^{-4}]$
 (b) $K_{sp} = [2.6 \times 10^{-4}]^2 [1.3 \times 10^{-4}]$
 (c) $K_{sp} = [1.3 \times 10^{-4}] [1.3 \times 10^{-4}]^2$
 (d) $K_{sp} = [1.3 \times 10^{-4}]^2 [1.3 \times 10^{-4}]^2$
144. Double fertilization occurs in:
- (a) Pinus (b) Ferns
 (c) Marchantia (d) Maize
145. Most conspicuous sea weeds are:
- (a) Red algae (b) Blue algae
 (c) Green algae (d) Brown algae
146. An acinus is composed of:
- (a) 10-20 Acinats (b) 20-40 Acinats
 (c) 20-30 Acinats (d) 30-40 Acinats
147. A circular disc of mass M and radius R is rotating about its axis with uniform speed v its kinetic energy is:
- (a) Mv^2 (b) $\frac{1}{2} Mv^2$
 (c) $\frac{1}{4} Mv^2$ (d) $\frac{1}{8} Mv^2$
148. Moment of inertia of an object does not depend upon:
- (a) Mass of object (b) Mass distribution
 (c) Angular Velocity (d) Axis of rotation
149. A body of mass 10Kg is hanging from a spring balance inside a lift. If the lift falls with an acceleration 10ms^{-2} , then what will be the reading of spring balance:
- (a) Zero (b) 2.5 Kg
 (c) 5 Kg (d) 10 Kg
150. That a driver swerves in order to avoid an accident can be proven by examining the marks on the pavements.
- (a) Stops quickly (b) Turns sharply
 (c) Hits something else (d) Goes backward
151. A container is having mixture of gases, 20% ammonia, 30% hydrogen and 50% oxygen under 50a.t.m pressure choose the correct partial pressure respectively.
- (a) 10 atm, 25 atm, 15 atm (b) 10 atm, 15 atm, 25 atm
 (c) 25atm, 10 atm, 15 atm (d) 15 atm, 25 atm, 10 atm
152. A man walks for some time with velocity v due east. Then he walks for same time with velocity v due north. The average velocity for the man is:
- (a) $2v$ (b) $\sqrt{2}v$ (c) v (d) $\frac{v}{\sqrt{2}}$
153. The sum of 2 forces acting at a point 16N. if the resultant force is 8N and its direction is perpendicular to minimum force, then the force is;
- (a) 6N and 10N (b) 8N and 8N
 (c) 4N and 12N (d)
154. A body walks to his school at a distance of 6Km with a speed of 3Km/h and walks back with a constant speed of 2Km/h. his average speed for round trip in Km/h is:
- (a) 2.5 (b) 2.4 (c) 5 (d) 2.3
155. Though Aleem is poor, _____ he is honest.
- (a) but (b) nevertheless
 (c) yet (d) still
156. Which cation is unstable in aqueous solution?
- (a) Sb^{3+} (b) Bi^{3+}
 (c) Sn^{3+} (d) Fe^{3+}
157. Choose the incorrect statement about corrosion.
- (a) Corrosion cannot be eliminated completely.
 (b) Employing modern techniques corrosion can be completely eliminates.
 (c) Corrosion process can be slowed down by certain methods.
 (d) The presence of acidic oxide in the environment can accelerate the process of corrosion.
158. AlBr_3 which is used in the alkylation of benzene possess the properties of:
- (a) A catalyst (b) A Lewis Acid
 (c) An electron deficient specie
 (d) All of the above.
159. 2-FADH₂ can yield energy:
- (a) 4 ATP (b) 8 ATP
 (c) 6 ATP (d) 10 ATP
160. ABO blood group is an example of:
- (a) Multiple alleles and incomplete dominance

- (b) Codominance and incomplete dominance
(c) Incomplete dominance only
(d) Multiple alleles and condominance
161. In a mating between two individuals that are heterozygous for a recessive lethal allele. What genotypic ratio (homozygous dominant: heterozygous: homozygous recessive) would you expect to observe in the offspring?
(a) 1:2:1 (b) 3:1:1
(c) 1:2:0 (d) 0:2:1
162. How much kinetic energy will be gained by an α -particle ion going from a point at 70 V to another point at 50 V?
(a) 40 eV (b) 40 KeV
(c) 40 MeV (d) Zero
163. The potentials of the two plates of a capacitor are +10V and -10V. The charge on one of the plates is 40C. The capacitance of the capacitor is:
(a) 2 F (b) 4 F
(c) 0.5 F (d) 0.25 F
164. In a simple electrical circuit, the current in a resistor is measured as (2.50 ± 0.05) mA. The resistor is marked as having a value of $4.7 \Omega \pm 2\%$. If these values were used to calculate the power dissipated in the resistor, what would be the percentage uncertainty in the value obtained?
(a) 2% (b) 4% (c) 6% (d) 8%
165. Choose the synonym for the word "ABRIDGE".
(a) To make a bridge (b) Shorten
(c) Magnify (d) Diver
166. Choose the true product of the following reaction?
 $\text{CH}_3\text{C} \equiv \text{N} + 2\text{H}_2\text{O} + \text{HCl} \rightarrow$
(a) $\text{CH}_3\text{COOH} + \text{NH}_3$
(b) $\text{CH}_3\text{COOH} + \text{NH}_4\text{Cl}$
(c) $\text{CH}_3\text{COCl} + \text{NH}_3$
(d) CH_3CONH_2
167. Which polyatomic anion is unstable in solution.
(a) BO_2^- (b) SnO_3^{2-} (c) $\text{S}_2\text{O}_8^{2-}$ (d) MnO_4^{2-}
168. Choose the molecule that could not be represented by single electronic structure formula:
(a) CH_4 (b) H_2O (c) SO_2 (d) O_2
169. Alkene + $\text{O}_3 \rightarrow$ Ozonide + $\text{Zn} + \text{H}_2\text{O}$ Propanone \rightarrow Propanal the IUPAC name of the alkene is:
(a) Hex-2-ene (b) Hex-3-ene
(c) 2-methyl pent-1-ene (d) 2-methyl pent-2-ene
170. If a new born baby possesses, carboxy hemoglobin instead of oxhymoglobin, the condition may be;
(a) Embolism (b) Artherosclerosis
(c) Cyanosis (d) Arteriosclerosis
171. Of 100 ml of Arterial blood, oxygen provided to the tissues is:
(a) 2 ml (b) 3 ml
(c) 4 ml (d) 5 ml
172. Nervous system that prepares itself fight of flight:
(a) Para Sympathetic (b) Sympathetic
(c) Somatic (d) Peripheral
173. In a stream lined flow, the velocity of the liquid in contact with the containing vessels is:
(a) Zero (b) Minimum but not zero
(c) Large (d) Infinite
174. Eight drops of water, each radius 2 min are falling through air at a terminal velocity of 8cm s^{-1} . If they coalesce to form a single drop, the terminal velocity of the combined drop will be:
(a) 8cm s^{-1} (b) 16cm s^{-1}
(c) 24cm s^{-1} (d) 32cm s^{-1}
175. The frequency of a second's pendulum is:
(a) 1 Hz (b) 2 Hz
(c) 5 Hz (d) None of the above
176. It is a general perception that doctors have callous disregard for the feelings of others, (The underlined word nearly means).
(a) Respectable (b) Careful
(c) Unfeeling (d) Sensitive
177. The ratio of the electric force between two protons to that between two electrons is of the order of:
(a) 10^{42} (b) 10^{39} (c) 10^{36} (d) 1
178. When 10^{12} electrons are received from a neutral metal sphere. The charge on the sphere becomes:
(a) $0.16\mu\text{C}$ (b) $-0.1\mu\text{C}$
(c) $0.32\mu\text{C}$ (d) $-0.32\mu\text{C}$
179. An electric charge in an accelerated motion produce:
(a) An electric field only (b) A magnetic field only
(c) Electromagnetic radiation only (d) All of the above
180. Choose the synonym for the word "ATTENUATE".
(a) Appear (b) Be absent
(c) Weaken (d) Testify
181. At standard conditions 45 liters of oxygen gas weights about 6g, where as 45 liters of hydrogen weights only about 4g. Which gas diffuses faster? Calculate how much faster.
(a) Hydrogen $4\gamma\text{O}_2$ (b) Hydrogen $2\gamma\text{O}_2$
(c) Oxygen, $8\gamma\text{Hz}$ (d) Oxygen, $3\gamma\text{Hz}$
182. Arrange the following oxide of chromium in increasing acidic character:
(a) $\text{CrO} > \text{Cr}_2\text{O}_3 > \text{CrO}_3$ (b) $\text{CrO}_3 > \text{Cr}_2\text{O}_3 > \text{CrO}$
(c) $\text{Cr}_2\text{O}_3 > \text{CrO} > \text{CrO}_3$ (d) $\text{CrO}_3 > \text{CrO} > \text{Cr}_2\text{O}_3$
183. Choose Mercaptans of the following:
(a) $\begin{array}{c} \text{R} \\ \diagdown \quad \diagup \\ \text{S} \\ \diagup \quad \diagdown \\ \text{R} \end{array}$ (b) $\begin{array}{c} \text{R} \\ \diagdown \quad \diagup \\ \text{S} \\ \diagup \quad \diagdown \\ \text{H} \end{array}$ (c) $\begin{array}{c} \text{R} \\ \diagdown \quad \diagup \\ \text{O} \\ \diagup \quad \diagdown \\ \text{R} \end{array}$ (d) $\begin{array}{c} \text{R} \\ \diagdown \quad \diagup \\ \text{H} \\ \diagup \quad \diagdown \\ \text{H} \end{array}$
184. If black and white true breeding mice are mated and the result is all gray offspring, what inheritance pattern would this be indicative of?
(a) Dominance (b) Codominance
(c) Multiple Alleles (d) Incomplete Dominance
185. The rules forbid passengers to cross the railway line.

- (a) Passengers were forbidden by the rules to cross the railway line.
 (b) Passengers are being forbidden by the rules to cross the railway line.
 (c) Passengers are forbidden by the rules to cross the railway line.
 (d) Passengers are forbid by the rules to cross the railway line.
186. Many hexaaqua complex ions can undergo reaction with water as given below: The reaction is classed as:
 (a) Redox reaction (b) Acid base reaction
 (c) Decomposition reaction (d) Substitution reaction
187. Propene react with hypochlorous acid to form

$$\begin{array}{c} \text{CH}_3 - \text{CH} - \text{CH} \text{OH} \\ | \\ \text{Cl} \end{array}$$
 (a)
$$\begin{array}{c} | \\ \text{Cl} \\ \text{CH}_3 - \text{CH} - \text{CH} \text{Cl} \\ | \\ \text{OH} \end{array}$$
 (b)
 (c)
$$\begin{array}{c} | \\ \text{Cl} \\ \text{CH}_3 - \text{CH} - \text{CH} \text{Cl} \end{array}$$
 (d)
$$\begin{array}{c} | \quad | \\ \text{OH} \quad \text{OH} \\ \text{CH}_3 - \text{CH} - \text{CH} \end{array}$$
188. Which of the following radiations cannot cause excitation in a molecule:
 (a) Red Colour (b) Green Colour
 (c) Ultra Violet (d) None of the above
189. Which of the following do not play a role in intracellular movement?
 (a) Microfilaments and intermediate filaments
 (b) Microfilaments and microtubules
 (c) Intermediate filaments and microtubules
 (d) Only microfilaments
190. Which statement about thylakoids in eukaryotes is not correct?
 (a) Thylakoids are assembled into stacks
 (b) Thylakoids exist as a maze of folded membranes.
 (c) The space surrounding thylakoids is called stroma
 (d) Thylakoids contain chlorophyll
191. The three non infective genes in HIV are:
 (a) gag, pol, rev (b) gag, pol, vpr
 (c) gag, pol, vpr (d) gag, pol, crv
192. A bomb explodes on the moon. How long will it take for the sound to reach the earth:
 (a) 10 sec (b) 1000 sec
 (c) 1 day (d) None of the above
193. Macronutrients are:
 (a) K-Mg-N-P (b) Cu-Mg-Mn-S
 (c) Mn-S-P-Cu (d) Mg-Mn-Ca-P
194. Shagnum is also called as:
 (a) Sphenopsida (b) Peat moss
 (c) Club moss (d) Maiden hair ferns
195. A body of mass 2 Kg collides with a wall with speed 100ms^{-1} and rebounds with the same speed the force exerted on the wall is $2 \times 10^4 \text{ N}$. The time of contact is:
 (a) 1/50 Sec (b) 1/25 Sec
 (c) 1/60 Sec (d) 1 Sec
196. An engine pumps out 40 Kg of water in one second. The water comes out vertically upwards with a velocity of 3ms^{-1} , the power of engine in kilowatt is:
 (a) 1.2 kw (b) 12 kw
 (c) 120 kw (d) 1200 kw
197. Two boys weighing in the ration 4:5 goes up stair taking time in the ratio 5:4. The ratio of their power is:
 (a) 1 (b) 16/25 (c) 25/16 (d) 4/5
198. A thrifty buyer purchases fruits and vegetables in season.
 (The underlined word nearly means)
 (a) Careful (b) Professional
 (c) Disinterested (d) Healthy
199. 10.0dm³ gas cylinder containing mixture of various gases 50cm³ of nitrogen gas is in the mixture what is the concentration of N₂ gas in part per billion (ppb):
 (a) $\frac{50}{1000} \times 10^9$ (b) $\frac{50}{10000} \times 10^8$
 (c) $\frac{50}{10000} \times 10^6$ (d) $\frac{50}{1000} \times 10^6$
200. Consider the following reactions.
 i. $\text{C}_2\text{H}_4(\text{g}) + \text{H}_2(\text{g}) \rightarrow \text{C}_2\text{H}_6(\text{g})$
 ii. $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightarrow 2\text{NH}_3(\text{g})$
 Choose the catalysts employed for the reaction.
 (a) Ni for both the reactions (i) and (ii)
 (b) Fe₂O₃ for both the reactions (i) and (ii)
 (c) Ni for reaction (i) and Fe₂O₃ for (ii)
 (d) Fe₂O₃ for the reaction (i) and Ni for (ii)

ANSWER KEY MEDICAL 2017

1.	A	2.	C	3.	A	4.	B	5.	A
6.	C	7.	C	8.	D	9.	C	10.	A
11.	A	12.	B	13.	A	14.	D	15.	A
16.	C	17.	C	18.	C	19.	A	20.	C
21.	A	22.	A	23.	C	24.	D	25.	B
26.	B	27.	D	28.	D	29.	C	30.	B
31.	B	32.	C	33.	A	34.	C	35.	D
36.	D	37.	C	38.	A	39.	C	40.	A
41.	C	42.	D	43.	B	44.	B	45.	D
46.	B	47.	D	48.	C	49.	B	50.	D
51.	C	52.	B	53.	D	54.	B	55.	A
56.	D	57.	A	58.	C	59.	A	60.	C
61.	A	62.	A	63.	A	64.	D	65.	A
66.	A	67.	B	68.	D	69.	D	70.	A
71.	C	72.	B	73.	D	74.	D	75.	C
76.	D	77.	D	78.	B	79.	C	80.	B
81.	C	82.	C	83.	B	84.	A	85.	C
86.	B	87.	A	88.	B	89.	D	90.	A
91.	C	92.	D	93.	B	94.	B	95.	C
96.	C	97.	C	98.	B	99.	C	100.	C
101.	A	102.	B	103.	B	104.	D	105.	D
106.	A	107.	A	108.	D	109.	A	110.	C
111.	C	112.	C	113.	B	114.	C	115.	C
116.	C	117.	A	118.	D	119.	C	120.	C
121.	B	122.	B	123.	B	124.	D	125.	D
126.	C	127.	D	128.	D	129.	C	130.	C
131.	D	132.	B	133.	C	134.	D	135.	C
136.	B	137.	D	138.	A	139.	A	140.	C
141.	A	142.	B	143.	B	144.	B	145.	B
146.	B	147.	C	148.	B	149.	A	150.	B
151.	B	152.	B	153.	A	154.	A	155.	C
156.	D	157.	D	158.	B	159.	A	160.	D
161.	A	162.	A	163.	A	164.	C	165.	B
166.	A	167.	C	168.	C	169.	B	170.	C
171.	D	172.	A	173.	B	174.	D	175.	D
176.	C	177.	D	178.	A	179.	D	180.	C
181.	C	182.	B	183.	B	184.	D	185.	C
186.	C	187.	B	188.	D	189.	D	190.	C
191.	D	192.	D	193.	A	194.	B	195.	A
196.	A	197.	B	198.	A	199.	C	200.	C