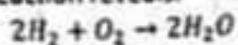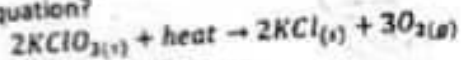1) Consider the reaction below, if 5 moles each of hydrogen and oxygen are reacted to form water, the reaction reveals:

$$2H_2 + O_2 \rightarrow 2H_2O$$

A) H_2 is excess reagent
B) O_2 is limiting reagent
C) H_2 is limiting reagent
D) Reaction has no limiting reagent

2) Oxygen can be prepared by the decomposition of potassium chlorate ($KClO_3$). How many moles of oxygen $O_{2(g)}$ can be formed by taking 12 moles of potassium chlorate ($KClO_3$) according to the following equation?

$$2KClO_{3(s)} + heat \rightarrow 2KCl_{(s)} + 3O_{2(g)}$$

A) 12 moles of oxygen
B) 15 moles of oxygen
C) 18 moles of oxygen
D) 21 moles of oxygen

3) 117.0g of $NaCl$ have:
A) 1.204×10^{24} formula units of $NaCl$
B) 12.04×10^{22} formula units of $NaCl$
C) 1.204×10^{23} molecules of $NaCl$
D) 6.023×10^{23} molecules of $NaCl$

4) The number of orientations of a sub-shell for which $n = 4$ and $l = 3$ will be:
A) 5
B) 3
C) 7
D) 1

5) Photon of the lowest wavelength is related to:
A) Balmer series
B) Pfund series
C) Bracket series
D) Paschen series

6) The maximum e/m ratio for positive rays is obtained when the discharge tube contain:
A) He
B) N_2
C) Ne
D) H_2

7) 1 atm of pressure is equal to all of the following except:
A) 760 cm Hg
B) 760 mm Hg
C) 760 torr
D) 101325 Pa

8) The volume of a given mass of an ideal gas at certain pressure is x at constant temperature. What will be its volume when the pressure is reduced to half:
A) $\frac{x}{2}$
✓ B) $2x$
C) $4x$
D) $\frac{x}{4}$

9) The volume occupied by 3.2 g of oxygen gas at S.T.P is:
A) $1.12\ dm^3$
B) $2.24\ dm^3$
C) $22.4\ dm^3$
D) $24\ dm^3$

10) All of the following crystal systems have $\beta = \gamma = 90°$ except:
A) Cubic
B) Orthorhombic
C) Tetragonal
D) Rhombohedral

11) Compound having lowest boiling point is:
A) Carbon tetrachloride
B) Ethyl alcohol
C) Benzene
D) Acetic acid

12) Which of the following can form Hydrogen bonding with each other?
A) Methanal & Ethanal
B) Propanone & ethyl methyl ketone
C) 3° Amine & H_2O
D) Acetone & Acetaldehyde

13) Identify the molecular formula of Furan:
A) C_3H_4O
B) C_5H_3O
C) C_4H_5O
D) C_4H_4O

14) Haber's process is used for the synthesis of ammonia. The optimum temperature for the Haber process is:
A) $35 - 50°C$
B) $130 - 150°C$
C) $400 - 450°C$
D) $500 - 600°C$

15) If ionic product is less than K_{sp} then:
A) Solution will be saturated
B) Precipitation will occur
C) Solution will be super saturated
D) No precipitation will occur

16) For $\Delta n = 0$
A) $K_p = K_n$
B) $K_p \neq K_n$
C) $K_p > K_n$
D) $K_p < K_n$

17) Reaction that follows third order kinetics is:
A) Decomposition of nitrogen dioxide
B) Decomposition of hydrogen iodide
C) Gas phase oxidation of nitric oxide
D) Formation of hydrogen iodide

18) As compared to exothermic reaction, formation of activated complex in endothermic reaction requires:
A) Greater E_a
B) Smaller E_a
C) Equal E_a
D) No E_a

19) SI unit of specific heat capacity is:
A) $Jg^{-1}K^{-1}$
B) JK^{-1}
C) $JmolK^{-1}$
D) kJ/mol

20) Processes involving solids and liquids have their:
A) $\Delta H = \Delta E + P\Delta V$
B) $\Delta H = P\Delta V$
C) $\Delta H = \Delta E$
D) $\Delta H = 0$

21) In redox reaction of SO_2 with $KMnO_4$ in acidic medium:
A) SO_2 oxidizes $KMnO_4$
B) SO_2 reduces $KMnO_4$
C) $KMnO_4$ is inert in acidic medium
D) SO_2 can't undergo redox reaction

22) Zinc displaces copper from its solution because:
A) Atomic no. of zinc is higher than that of copper
B) Zinc has higher reduction potential than copper
C) Zinc is more soluble
D) Zinc has smaller reduction potential than copper

23) The molecular shape of a molecule with three bonded atoms and one lone pair electron on the central atom will be:
A) Trigonal planar
B) Tetrahedral
C) Trigonal pyramidal
D) Linear

24) Molecule having the highest bond energy (Experimentally) is:
A) HCl
B) HF
C) HBr
D) HI

25) The bond length between double bonded carbon atoms is:
A) $1.34A°$
B) $1.10A°$
C) $1.54A°$
D) $1.82A°$

26) Choose the element that forms normal oxide only:
A) Li
B) Na
C) K
D) Rb

27) Element whose salts do not impart color to flame test is:
A) Be
B) Cs
C) Ca
D) K

28) Indicate superoxide in the following:
A) CaO
B) BaO_2
C) Na_2O_2
D) RbO_2

29) Which one of the following is covalent in nature?
A) Mg_3N_2
B) Be_3N_2
C) Ca_3N_2
D) Ba_3N_2

30) Which one has one unpaired electron in the valence shell?
A) Zn^{++}
B) Cu^+
C) Ti^{+3}
D) Fe^{+2}

31) The oxidation number of Cobalt in the given coordination complex is:
$[Co(H_2NCH_2CH_2NH_2)_3]_2(SO_4)_3$
A) III
B) II
C) IV
D) VI

32) Pyrole belongs to which class of compounds:
A) Hydrocarbons
B) Homocyclic
C) Alicyclic
D) Heterocyclic

33) Ethyl alcohol in the presence of H_2SO_4 at 170°C produces:
A) Ether
B) Ethene
C) Ester
D) Ethane

34) Lindlar's catalyst is used in hydrogenation of alkyne:
A) To increase activation energy
B) To enhance hydrogenation of alkene
C) To prevent hydrogenation of alkene
D) To start polymerization reaction

35) Which one of the following is not Meta directing group?
A) -COR
B) -NO₂
C) -CHO
D) -NR₂

36) Benzene-1,3-diol is also known as:
A) Catechol
B) Resorcinol
C) Hydroquinone
D) O-cresol

37) Identify the electrophile called as acylium ion:
A) R_3N^+
B) RCO^+
C) $RCOO^+$
D) RNO^+

38) Among the following hydrocarbons which one has acidic hydrogen?
A) C_2H_6
B) C_2H_4
C) C_2H_2
D) C_6H_6

39) Greater number of alkyl groups on substrate favours:
A) Substitution reaction
B) Elimination reaction
C) Oxidation reaction
D) Free radical reaction

40) S_N1 reactions mostly result in partial racemization, in partial racemization there is:
A) Inversion only
B) Retention only
C) Equal inversion and retention
D) More inversion than retention

41) Which of the following involve the same steps?
A) E1 and E2
B) E1 and S_N1
C) S_N1 and S_N2
D) E2 and S_N1

42) The correct sequence of electronic configuration is:
A) 4p 5s 4d 5p 6s 4f 5d
B) 4p 4s 4d 5p 5s 5f 6d
C) 4p 4s 4d 5p 5s 4f 5d
D) 4p 3s 4d 5p 6s 4f 5d

43) When phenol reacts with excess of bromine in aqueous solution it results in the formation of:
A) Ortho/para bromophenol
B) Meta-bromophenol
C) 2,4,6-Tribromophenol
D) 3,5-Dibromophenol

44) Propylene glycol and trimethylene glycol are:
A) Functional group isomers
B) Metamers
C) Position isomers
D) Tautomers

45) The reduction of Aldehydes and Ketones to alkanes in the presence of Zinc amalgam and HCl is called:
A) Clemmenson reduction
B) Williamson's synthesis
C) Wolf-Kishner reduction
D) Dow process

46) Aldehyde and Ketone on reaction with hydroxylamine form:
A) Hydrazine
B) Hydrazone
C) Oxime
D) Imine

47) Fehling's solution works on the principle of redox reaction which results in:
A) Reduction of Aldehydes
B) Oxidation of Copper (II)
C) Oxidation of Aldehyde
D) Oxidation of Ketone

48) In conversion of acid halides to ester, pyridine is used to:
A) Stabilize acid halides
B) Consume HCl formed in the reaction
C) Dehydrate alcohol
D) Dehydrogenate acid halides

49) Number of carbon atoms in valeric acid is:
A) 4
B) 5
C) 6
D) 7

50) The IUPAC name of formyl chloride is:
A) Chloro methanoic acid
B) Chloro methane
C) Methanoyl chloride
D) Chloro methanoate

51) The inhibition, in which the inhibitor does not combine directly with the enzyme but binds to the enzyme substrate complex is called:
A) Reversible inhibition
B) Competitive inhibition
C) Non-competitive inhibition
D) Uncompetitive inhibition

52) Trypsinogen can be activated by the action of:
A) Amylase
B) HCl
C) Glucokinase
D) Enterokinase

53) Crystal having orthorhombic crystal system is:
A) $PbCrO_4$
B) $BaSO_4$
C) ZnO
D) $K_2Cr_2O_7$

54) Alkoxy carbonyl functional group is present in:
   A) Ether
   B) Aldehyde
   C) Carboxylic acid
   D) Ester

55) Statements:
   Some teachers are students. All students are girls. No student is a boy.
   Conclusions:
   I. Some teachers are boys.
   II. Some girls are teachers.
   III. Some girls are students.
   A) Only I follows
   B) Only I, II and III follow
   C) Only II follows
   ✓D) Only II and III follow

56) Complete the following series:
   KCD, LEF, MGH, _____, OKL.
   A) NQM
   B) PJI
   ✓C) NIJ
   D) NJI

57) Read the following statements and decide about the arguments.
   Statement: Does Pakistan need so many plans for development?
   Arguments:
   I. Yes. Nothing can be achieved without proper planning.
   II. No. Too much time, money and energy is wasted on planning.
   A) Only I is True.
   B) Only II is True.
   C) Either I or II is True.
   ✓D) Neither I nor II is True.

58) Methyl tetrachloride (MTC) is a chemical found in some pesticides, glues, and sealants. Exposure to MTC can cause people to develop asthma. In order to halve the nation's asthma rate, the government plans to ban all products containing MTC.
   The government's plan to halve the nation's asthma rate relies on which of the following assumptions?
   A) Exposure to MTC is responsible for no less than half of the nation's asthma cases
   B) Products containing MTC are not necessary to the prosperity of the country's economy
   C) Asthma has reached epidemic proportions
   D) MTC products are helpful for asthma

59) Statements:
   I. Importance of yoga and exercise is being realized by all sections of the society.
   II. There is an increasing awareness about health in the society particularly among middle ages group of people.
   A) Statement I is the cause and statement II is its effect.
   B) Statement II is the cause and statement I is its effect.
   C) Both the statements I and II are independent causes.
   D) Both the statements I and II are effects of independent causes.

60) Statement: The rates of interest on Post Office recurring deposit accounts have been increased with effect from 1st March. This has been done to attract more deposits.
   Course of Action
   I. Efforts should also be made to make the public aware about this increase in the rate of interest.
   II. If the deposits don't increase in next six months, the rate of interest should be further increased.
   A) Only conclusion I follows
   B) Only conclusion II follows
   C) Neither I nor II follows
   D) Both conclusions I and II follows

61) Equal forces F act on isolated bodies A and B. The mass of B is 1/5 times that of A. The magnitude of the acceleration of A is:
   A) 1/5 times that of B
   B) 1/3 times that of B
   C) the same as B
   D) nine times that of B

62) A body is moved through a displacement of 15m towards North, the total displacement will be zero when body covered the same displacement towards:
   A) North
   B) South
   C) West
   D) East

63) When the range of a projectile is equal to one fourth of the height then which one is true:
   A) $Tan\theta = 10$
   B) $Tan\theta = 12$
   C) $Tan\theta = 16$
   D) $Tan\theta = 1$

64) A body is moving with momentum of 100 kg m/s. What is the magnitude of force required to stop this body in 25 sec?
   A) 4 N
   B) 25 N
   C) 100 N
   D) 2500 N

65) Doubling the initial velocity of a projectile while keeping all other parameters the same, the height reached by the projectile increases by:
   A) two times
   B) three times
   C) four times
   D) remains the same

66) Neglecting the effect of air resistance how long a stone takes to dropped off a 125m high building lands on the ground, take g=10m/s²:
   A) 3 sec
   B) 4 sec
   C) 18 sec
   D) 5 sec

67) The weight of a body is 120 N and it is lifted to height 10 m, work done on the body is:
   A) 120 J
   B) 100 J
   C) 1000 J
   D) 1200 J

68) A 200 N force acts on 8 kg crate that starts from rest. At the instant the object has gone 2m, the rate at which the force is doing work is:
   A) 2.5W
   B) 25W
   C) 75W
   D) 2000W

69) Which of the following bodies has the largest kinetic energy?
   A) Mass 3M and speed V
   B) Mass 3M and speed 2V
   C) Mass 3M and speed 3V
   D) Mass M and speed 4V

70) A 2kg object is released from rest 8 m above the surface of Earth. During the fall work done against air resistance is 60 J. Just before it hits the surface its speed is: (Hint: take g=10m/sec²)
   A) 10m/sec
   B) 36 m/sec
   C) 40 m/sec
   D) 45 m/sec

71) The speedometer of a car shows 36 km/hr. The angular speed of the wheels having 0.5 m radius is:
   A) 5 rad/sec
   B) 10 rad/sec
   C) 15 rad/sec
   D) 20 rad/sec

72) The angular speed in radian/hour for daily rotation of our earth is?
   A) $\pi/12$
   B) 12π
   C) 24π
   D) $\pi/24$

73) A fly wheel rotates at constant speed of 600 rpm. The angle described by the shaft in radian in one second is:
   A) 100π
   B) 20π
   C) 0
   D) 20

74) The angular speed of the second hand of a watch is:
   A) $(\pi/1800)$ rad/sec
   B) $(\pi/60)$ rad/sec
   C) $(\pi/30)$ rad/sec
   D) (2π) rad/sec

75) A stretched string vibrates with frequency f, when tension in the string is T, for what value of tension, the frequency of the same string is doubled?
   A) 2T
   B) 4T
   C) 8T
   D) 16T

76) The longitudinal waves travel more slowly in _____ than in _____
   A) Solids, gases
   B) Solids, liquid
   C) Gases, solids
   D) Liquid, gases

77) Sinusoidal water waves are generated in a large ripple tank. The waves travel at 25cm/s and their adjacent crests are 5.0cm apart. The time required for each new whole cycle to be generated is:
   A) 100sec
   B) 4.0sec
   C) 2.0sec
   D) 0.2sec

78) The distance between adjacent node and anti-node is equal to:
   A) λ
   B) $\frac{\lambda}{2}$
   C) 2λ
   D) $\frac{\lambda}{4}$

79) A string clamped at its both ends, vibrates in four segments (loops). The length of string is 150 cm. The wavelength of the wave is:
   A) 33.3 cm
   B) 66.7 cm
   C) 150 cm
   D) 75 cm

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80) The square root of the ratio of elasticity to mass density is equal to:
A) Force
B) Product of frequency and wavelength
C) Co-efficient of Viscosity
D) Refractive index

81) If the pressure of air enclosed in a long tube is increased 10 times, then speed of sound will:
A) Increase
B) Decrease
C) Remain constant
D) Become zero

82) The expression, $C_p - R$ is equal to:
A) C_v
B) R
C) $C_p - C_v$
D) $R + C_v$

83) In a certain process, 200J of heat energy is supplied to a system and at the same time 50J of work is done by the system. The increase in the internal energy of the system is:
A) 25J
B) 100J
C) 150J
D) 250J

84) Work done during isochoric process is:
A) Negative
B) Maximum Negative
C) Maximum Positive
D) Zero

85) Two charges of magnitude $q_1 = 1\mu c$ and $q_2 = 5\mu c$, are separated at a distance $r = 1 \times 10^{-3}m$ apart, the ratio of the magnitude of the forces acting on them will be:
A) 1:5
B) 1:25
C) 1:3
D) 1:1

86) For 0.5 Siemens of conductance, resistance will be:
A) 1Ω
B) 2Ω
C) 20Ω
D) 10Ω

87) 1 volt x 1 ampere is equal to:
A) 1 coulomb
B) 1 newton
C) 1 watt
D) 1 hp

88) A wire of length L has resistivity ρ. If the wire is divided in two halves, then resistivity of each halve is:
A) $\rho/2$
B) ρ
C) 2ρ
D) $\rho/3$

89) In how many hours a 1000-watt AC will consume one unit of electricity?
A) 0.5 hr.
B) 1 hr.
C) 1.5 hr.
D) 2 hr.

90) Of the following, the copper conductor that has the least resistance must be:
A) thick, short and cool
B) thin, long and hot
C) thick, long and hot
D) thin, short and cool

91) A certain x-ray tube requires a current of 5 mA at a voltage of 60 kV. The rate of energy dissipation (in watts) is:
A) 560
B) 300
C) 200
D) 800

92) Ampere-Second is the unit of:
A) Power
B) Charge
C) Potential difference
D) Current

93) The magnitude of the magnetic flux through area A has exactly the same value at angles:
A) 0 and 180°
B) 90° and 180°
C) 180° and 270°
D) 270° and 360°

94) A hydrogen atom that has lost its electron is moving east in a region where the magnetic field is directed from south to north. It will be deflected:
A) Up
B) Down
C) North
D) South

95) When the magnetic force acts on a charge particle, change occurs in:
A) Magnitude of velocity only
B) Magnitude and direction of velocity
C) Only the direction of velocity
D) Neither direction nor magnitude of velocity

96) A constant magnetic field of 5T is passing through a static conducting loop of area 0.8m², the induced emf is:
A) 4 V
B) 10 V
C) Zero
D) 32 V

97) Magnetic flux linked with a conducting loop "A" is increased at the rate of 15 weber/second and in another conducting loop "B" is decreased at the rate of 15 weber/second, the magnitude of induced emf of:
A) Loop A will be equal to loop B
B) Loop A is smaller than loop B
C) Loop B is smaller than loop A
D) Both will be zero

98) For induced emf to be produced in a coil, the magnetic flux linked with a coil must:
A) only decrease
B) only increase
C) be constant
D) be changed

99) For half wave rectification, the number of diode needed in a circuit is:
A) 1
B) 2
C) 3
D) 4

100) The frequency of a light beam "A" is half of that of light beam "B". The ratio E_A/E_B of photons energies is:
(Hint: where E_A & E_B are the respective energies of light Beam "A" & "B")
A) 1/2
B) 1/4
C) 1
D) 2

101) The wavelength of photon "A" is half the wavelength of photon "B". The energy of a photon "A" is:
A) half the energy of a photon B
B) one-fourth the energy of a photon B
C) equal to the energy of photon B
D) twice the energy of photon B

102) If frequency of light is greater than threshold frequency then in photoelectric effect the number of electrons increases with increase in _____ of light:
A) frequency
B) kinetic energy
C) intensity
D) momentum

103) The shortest wavelength associated to Paschen series is:
A) $\lambda = \frac{6}{R_H}$
B) $\lambda = \frac{9}{R_H}$
C) $\lambda = \frac{13}{R_H}$
D) $\lambda = \frac{4}{R_H}$

104) The ratio of shortest wavelength to longest of Lyman series is:
A) R_H
B) 4/3
C) 3/4
D) 4

105) Half-life of a radioactive element is 100 days. How much quantity of the 88 g of such element will remain after three half-lives?
A) 8 g
B) 10 g
C) 11 g
D) 44 g

106) Radioactive ^{90}Sr has a half-life of 30 years. What percent of a sample of ^{90}Sr will remain after 90 years?
A) 0%
B) 12.5%
C) 50%
D) 75%

107) At the end of 15min, 1/32 of a sample of radioactive polonium remains. The corresponding half-life is:
A) 0.469min
B) 32min
C) 15min
D) 3min

108) Two equal and opposite charges of 10 C are separated at a distance of 10 cm, the electric potential at mid-point between the charges is:
A) 20 V
B) 10 V
C) 5 V
D) 0 V

109) The force of repulsion between two alike charges is 10N in vacuum. When a material of $\varepsilon_r = 2$ is placed between them, new force will be:
A) 20 N
B) 15 N
C) 10 N
D) 5 N

110) The slope of the charge-time graph for a charging capacitor gives:
A) Current
B) Voltage
C) Force
D) Energy

111) Two small charged objects attract each other with a force F when separated by a distance d. If the charge on each object is reduced to one-fourth of its original value and the distance between them is reduced to d/2 the force becomes:
A) F/16
B) F/8
C) F/4
D) F/2

112) If both the plate area and the plate separation of a parallel-plate capacitor are doubled, the capacitance is:
A) doubled
B) halved
C) unchanged
D) tripled

113) A 20µF capacitor is charged to 200 V. Its stored energy is:
A) 4000 J
B) 4 J
C) 0.4 J
D) 2000 J

114) The primary winding of a transformer has a 120 V AC supply. What is the value of secondary voltage if the turn ratio is 20. (Hints: turn ratio $= N_s/N_p$)
A) 2400 V
B) 1200 V
C) 24000 V
D) 200 V

115) I like ____ blue T-shirt over there better than ____ red one.
[Choose the correct articles]
A) no article, the
B) the, the
C) the, a
D) a, the

116) All you think and hanker ____ is government service.
[Choose the correct preposition]
A) on
B) for
C) at
D) upon

117) Choose the correct sentence.
A) I have always and I am always your friend.
B) I have always and am still your friend.
C) I have always been and I have still your friend.
D) I have always been and still am your friend.

118) The director as well as the manager of the hotel ____ attending the meeting.
A) is
B) are
C) were
D) has

Read the passage and answer the question given at the end.
For my 25th birthday, my uncle gave me a gift card to go skydiving at a special place near Miami. I was happy because I wanted to do something wild. On the day of my jump, I could not take breakfast because of the nerves. Before I knew the danger involved in it, I was on the plane with a parachute on my back. After the fall, I could feel adrenaline running through me. Then the parachute opened, and I was floating freely, like a bird. Those wonderful moments helped me to realize that I am the kind of person who can take risks in life.

119) The author learns from the experience of skydiving that:
A) Skydiving is dangerous.
B) Miami is a good place for skydiving.
C) He is capable of doing risky things in life.
D) Skydiving made him so nervous that he could not take breakfast in the morning.

120) The novice teacher was excited about her first teaching job.
[The word closest in meaning to the underlined word is]
A) Experienced
B) Beginner
C) Erudite
D) Stern

121) Choose the correct spelling:
A) Loqacious
B) Loquetious
C) Loqucious
D) Loquacious

122) If I were younger, I ____ around the world.
A) will travel
B) would have travelled
C) would travel
D) travel

123) The flower girl sold him flowers.
[The underlined word is]
A) Direct object
B) Indirect object
C) Complement
D) Predicate

124) Identify the past simple tense in the following.
A) We have been reading in the classroom since morning.
B) He had broken this window.
C) They spoke in Urdu to the waitress.
D) She is enjoying the weather on the roof.

125) Something odd was happening all around the world.
[Identify the underlined clause]
A) Subordinate clause
B) Independent clause
C) Dependent clause
D) Relative clause

126) We met rather few people who spoke English.
[The sentence is]
A) Complex
B) Simple
C) Compound
D) Compound complex

127) Identify the sentence with correct punctuation and capitalization.
A) The automobile dealer handled three makes of cars: Toyota, Suzuki, and Honda.
B) The automobile dealer handled three makes of cars; Toyota, Suzuki, and Honda.
C) The automobile dealer handled three makes of cars: toyota, suzuki, and honda.
D) The automobile dealer handled three makes of cars, Toyota, Suzuki, and Honda.

128) Which of the following sentences is in correct order?
A) We up right drove to Karachi in two days.
B) We to Karachi drove in two days right up.
C) We right drove to Karachi up in two days.
D) We drove right up to Karachi in two days.

129) You can either come with me now nor walk home later.
[The word which does not fit in the sentence is]
A) Can
B) Either come
C) Now
D) Nor

130) I just don't want to get out off bed today.
[Find an error in the sentence if any]
A) Get out
B) Just
C) Off
D) No error.

Read the passage and answer the questions given at the end (Q131-132)
Efforts should be made to control the use of tobacco in the campuses of educational institutions because it is gateway to drug abuse. Most of the youths usually start with soft drugs like cigarettes, chhaliya, gutka, naswar and pan, and then move to hard drugs like heroin, opium, cocaine, ice and sheesha, etc. People who start smoking cigarettes or drink alcohol at a young age are much more likely to experiment with illegal drugs than people who do not smoke or drink.

131) According to the paragraph:
A) Educational institutions are gateways to the control of tobacco
B) Youths who start with soft drugs are likely to experiment with illegal drugs
C) People who do not smoke or drink are less likely to experiment with illegal drugs
D) People who start smoking at a young age are less likely to experiment with illegal drugs

132) Smoking cigarettes or drinking alcohol leads to:
A) Legal drugs
B) Illegal drugs
C) Soft drugs
D) The use of tobacco in educational institutions

133) Which of the following statements is not correct about alveoli:
A) Alveoli form the gas exchange surface
B) The wall of each alveolus is 0.1 cm thick
C) Alveoli has a dense network of capillaries
D) Collagen and elastin present in alveoli allow it to expand and recoil easily during breathing

134) Which of the following connective tissues consist of cells known as chondrocytes:
A) Myocardium
B) Cartilage
C) Bone
D) Periosteum

135) The joint present between wrist bones is:
A) Fibrous joint
B) Cartilaginous joint
C) Hinge joint
D) Ball and socket joint

136) A sarcomere is the region of a myofibril between two successive:
A) I-line
B) A-Line
✓C) Z-line
D) M-line

137) The size of synaptic cleft (the gap separating nerve cells) in electrical synapse is:
A) 0.2 nm
B) 2 nm
C) 20 nm
D) 200 nm

138) The activities like sleeping, walking and dreaming are controlled by which part of brain:
A) Pons
B) Cerebellum
C) Olfactory bulb
D) Hippocampus

139) The hormone "calcitonin" is secreted by:
A) Thyroid gland
B) Parathyroid gland
C) Pancreas
D) Adrenal gland

140) Fallopian tube is also known as:
A) Oviduct
B) Ovaries
C) Uterus
D) Cervix

141) The syphilis is a _____ disease:
A) Bacterial
B) Fungal
C) Protozoic
D) Viral

142) The most common symptom of gonorrhea in males is:
A) Skin rash on neck
B) Joint pain
C) Painful urination
D) Chancre

143) G. J. Mendel chose _____ as an experimental plant for his study:
A) Medicago sativa
B) Pisum sativum
C) Delonix regia
D) Lens culinaris

144) When round and yellow color seeded plant (RrYy) is self-crossed the number of plants with round and yellow color seeds obtained is _____ in 32 plants:
A) 18
B) 9
C) 3
D) 1

145) In crossing over, exchange of maternal and paternal chromatid parts occurs while homologous chromosomes are paired during:
A) Prophase of meiosis I
B) Prophase of meiosis II
C) Metaphase of meiosis I
D) Metaphase of meiosis II

146) Drosophila melanogaster is the scientific name of:
A) House fly
B) Fruit fly
C) Flash fly
D) Sand fly

147) A condition that renders the individual less able to form blood clot is:
A) Alport's syndrome
B) Coffin-Lowry syndrome
C) Hemophilia
D) Thalassemia

148) Intra-specific struggle refers to:
A) Competition between members of the same species
B) Competition between members of different species
C) Environmental struggle
D) Prey or predation

149) Identify fossil bird among the following:
A) Equus
B) Python
C) Archaeopteryx
D) Dawn horse

150) Which of the following organelle is regarded as self-replicating organelle:
A) Endoplasmic reticulum
B) Golgi bodies
C) Mitochondria
D) Vacuole

151) The prokaryotic cell wall composed of:
A) Cellulose
B) Chitin
C) Murein
D) Pectin

152) _____ is found in the exoskeleton of crabs.
A) Cellulose
B) Chitin
C) Murein
D) Hemi-cellulose

153) Choose the unsaturated fatty acid among the following:
A) Palmitic acid
B) Arachidic acid
C) Stearic acid
D) Oleic acid

154) The conjugated molecule that is primarily present in egg albumin is:
A) Lipoprotein
B) Nucleoprotein
C) Glycolipid
D) Glycoprotein

155) FSH (Follicle Stimulating Hormone) stimulates spermatogenesis by stimulating _____ cells to complete the development of sperms.
   A) Leydig
   B) Inhibin
   C) Sertoli
   D) TSH

156) The process of photophosphorylation takes place in:
   A) Nucleolus
   B) Chloroplast
   C) Nucleus
   D) Golgi bodies

157) Which of the following hormones is released by the posterior lobe of pituitary gland?
   A) Antidiuretic hormone
   B) Growth hormone
   C) Estrogen
   D) Prolactin

158) Which of the following agents can easily pass through filter paper?
   A) Bacteria
   B) Fungi
   C) Yeast
   D) Virus

159) HIV belongs to a special class of virus known as:
   A) Retrovirus
   B) Flavivirus
   C) Novavirus
   D) Tetarvirus

160) The capsule of a bacterial cell is a sticky gelatinous structure made up of protein and:
   A) Lipid
   B) Carbohydrate
   C) Nucleotide
   D) Alcohol

161) The transgenic plants, such as golden rice are produced primarily with the help of:
   A) Escherichia coli
   B) Proteus mirobilis
   C) Agrobacterium tumerfaciens
   D) Ralstonia solanacearum

162) Which of the following chemicals is used to preserve biological specimens:
   A) Formalin
   B) Glutaraldehyde
   C) Ethylene Oxide
   D) Iodine

163) Coral reefs are the characteristic feature of phylum:
   A) Porifera
   B) Coelenterata
   C) Arthropoda
   D) Platyhelminthes

164) According to sliding filament hypothesis, the release of _____ ions from the sarcoplasmic reticulum causes the reorientation of certain components in thin filament, permitting them to bind with extension from the thick myosin filaments:
   A) Sodium
   B) Calcium
   C) Magnesium
   D) Potassium

165) The green glands found in arthropods are concerned with:
   A) Excretion
   B) Respiration
   C) Digestion
   D) Circulation

166) The Purkinji fibers are the specialized fibers found in:
   A) Human heart
   B) Human lungs
   C) Human stomach
   D) Human brain

167) The largest body of lymphoid tissue in the human body is:
   A) Tonsils
   B) Pancreas
   C) Spleen
   D) Thymus

168) The immune cells that clean up pus as a part of the healing process is:
   A) Natural killer cell
   B) Macrophages
   C) Antibodies
   D) Neutrophils

169) Lipid synthesis occurs in which one of the following organelle of the cell?
   A) Ribosome
   B) Golgi bodies
   C) Mitochondria
   D) Endoplasmic reticulum

170) The testes are male gonads which are situated outside the abdomen within a skin pouch called:
   A) Vas deferens
   B) Epididymis
   C) Scrotum
   D) Vasa efferentia

171) The term polydipsia refers to:
   A) A condition in which abnormally large volume of urine is produced
   B) A condition of excessive thirst
   C) A condition of excessive hunger
   D) A condition in which the concentration of blood decreases in the body

172) Lactose is composed of:
 A) Glucose + Fructose
 B) Glucose + Galactose
 C) Glucose + Glucose
 D) Fructose + Galactose

173) Saprophytic bacteria are:
 A) Autotrophs
 B) Decomposers
 C) Parasites
 D) Photosynthetic

174) In human heart right atrium communicates with right ventricle through:
 A) Inter-auricular septum
 B) Ventricular septum
 C) Tricuspid valve
 D) Bicuspid valve

175) The first segment of the small intestine is:
 A) Duodenum
 B) Jejunum
 C) Ileum
 D) Colon

176) Which one of the following factors does not affect the rate of enzyme action?
 A) Temperature
 B) Substrate concentration
 C) Enzyme concentration
 D) Water concentration

177) Light reaction occurs in the ____ of chloroplast:
 A) Outer membrane
 B) Inner membrane
 C) Granum
 D) Stroma

178) How many pieces of ribonucleic acid (RNA) make up the genome of influenza virus?
 A) 4
 B) 6
 C) 8
 D) 10

179) In Mendelian cross for heterozygous flower (P_p), what is the probability that the dominant allele will be in sperm and the recessive in the egg:
 A) 0.05
 B) 0.5
 C) 0.25
 D) 0.75

180) Mastication causes exocrine glands under the tongue and in the back of mouth to secrete a watery liquid called:
 A) Bolus
 B) Bile
 C) Pancreatic juice
 D) Saliva

181) In phylum Aschelminths (Nematoda), nervous system consists of a nerve ring which encircles the ____ and sends its branches in different parts of the body.
 A) Lips
 B) Teeth
 C) Stomach
 D) Pharynx

182) Salmonella typhi causing typhoid and Clostridium tetoni causing tetanus are which type of bacteria?
 A) Bacilli
 B) Spirilla
 C) Cocci
 D) Comma

183) Who formulated the principle that 'ontogeny recapitulates phylogeny':
 A) Von bear
 B) Haeckel
 C) Herbert Spencer
 D) Darwin

184) Aquatic mammals belong to the order ____
 A) Cetacea
 B) Pholidota
 C) Chiroptera
 D) Proboscidea

185) All of the following paired organs/structures have homology except:
 A) Human hand: Bat's wing
 B) Bat's wing: Wings of butterfly
 C) Horse front leg: Front flappers of whale
 D) Wings of bird: Wings of flying lizards

186) The head of some phages are icosahedral, which means that the head possess:
 A) 6 sides
 B) 10 sides
 C) 15 sides
 D) 20 sides

187) In sickle cell, haemoglobin molecule, glutamic acid, is replaced by:
 A) Proline
 B) Glutamine
 C) Valine
 D) Glycine

188) Where do phospholipids arrange themselves in a cell?
 A) Inside the nucleus
 B) Inside the cytoplasm
 C) In the plasma membrane
 D) Inside the mitochondrial matrix

189) Which type of nerve impulse occurs in non-myelinated neuron fibers?
A) Saltatory impulse
B) Continuous impulse
C) Rapid Impulse
D) Jumping impulse

190) In alcoholic fermentation _____ ATP molecules are produced from 1 glucose molecule:
A) 2
B) 18
C) 32
D) 36

191) Amino acids mainly differ from each other by the difference in their:
A) R-group
B) Amino group
C) Carboxyl group
D) Hydrogen of alpha carbon

192) All of the following are related to enzymes except:
A) Speed up reaction
B) Remain unchanged after reaction
C) Increase the activation energy
D) Possess the active site

193) The cytoplasm contain(s):
A) Cell organelle only
B) Insoluble waste only
C) Storage products only
D) Cell organelle, insoluble waste & storage products

194) Tay-sach's disease particularly results from the malfunctioning of:
A) Cell membrane
B) Nucleus
C) Lysosomes
D) Vacuole

195) Enzymes present in mammals work best at about:
A) 20 °C
B) 30 °C
C) 40 °C
D) 50 °C

196) An example of competitive inhibitor molecule is:
A) Insecticides
B) Sulphonamide
C) Cyanide
D) Metal ions

197) The ATP formed in the preparatory phase of glycolysis is (are):
A) 1
B) 2
C) 4
D) 0

198) Mitochondria is usually absent in:
A) Muscle cells
B) Cardiac cells
C) Mature RBC's
D) WBC's

199) _____ consists of units called dictyosomes.
A) Ribosomes
B) Lysosomes
C) Glyoxisomes
D) Golgi complex

200) The optimal pH of lipase (pancreas) is:
A) 4.0 – 5.0
B) 1.5 – 1.6
C) 8.0
D) 6.1 – 6.8

THE END

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Incorrect way of filling: ⊖ ⊗ ✓ Ⓓ

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