UG-2008

MEDICAL

Test Admission Ticket No.	Question Booklet Version Code	Question Booklet Sr. No.
	B	2214
OMR Serial Number	(Write this Code on your OMR Answer Sheet)	(Write this number on your Answer Sheet)

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PHYSICS

1. When elastic gel is allowed to stand for a long time, it looses its liquid state and shrinks. This property is called
   A) dehydration
   B) evoparation
   C) shrinking
   D) syneresis

2. In the case of ordinary diode used in forward bias condition, at the junction,
   A) no radiation is emitted
   B) energy emitted will be in U-V region
   C) energy emitted will be in IR region
   D) energy emitted will be in X-ray region

3. A full adder consists of
   A) two half adders
   B) two half adders, with an OR gate
   C) two half adders with an AND gate
   D) two half adders with a NOT gate

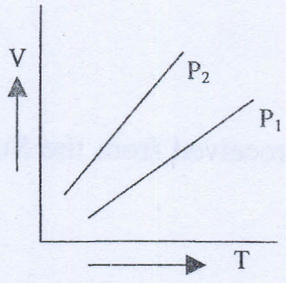
4. The difference in frequencies of series limit of Lyman and Balmer series is equal to
   A) 1^{st} line in Lyman series.
   B) 2^{nd} line in Balmar series.
   C) 2^{nd} line in Paschen series.
   D) 1^{st} line in Brackett series.

5. Quarks do ***not*** find place in case of
   A) Leptons
   B) Mesons
   C) nucleons
   D) Hyperons

SPACE FOR ROUGH WORK

6. Magnetic moment of a deuteron is
   A) negative and same as that of electron
   B) positive and same as that of proton
   C) negative and less than that of neutron
   D) positive and less than that of proton

7. Volume –Temperature graph at two different pressures for a perfect gas is as shown. Then the pressures are related as



   A) $P_1 > P_2$
   B) $P_1 = P_2$
   C) $P_1 < P_2$
   D) $P_1 = -P_2$

8. A gas with $\gamma = 1.5$ at 27°C is compressed adiabatically to one fourth of its initial volume. Consequent temperature is
   A) 327°C
   B) 600°C
   C) 427°C
   D) 300°C

9. The efficiency of Carnot's heat engine is 40 % when the temperature of source is 500 K. To increase the efficiency of engine to 60 %, sink temperature must be decreased by
   A) 300 K
   B) 200 K
   C) 100 K
   D) 150 K

SPACE FOR ROUGH WORK

10. A simple pendulum has a hollow metallic bob. It has the time period T_1. It is half filled with water. Time period now is T_2. It is then completely filled with water and the time period is T_3. Then
    A) $T_1 = T_3 < T_2$
    B) $T_1 = T_2 = T_3$
    C) $T_1 = T_2 < T_3$
    D) $T_1 > T_2 > T_3$

11. Ozone which absorbs and scatters U-V radiation received from the Sun is contained in
    A) Trophosphere
    B) Stratosphere
    C) Mesosphere
    D) Thermosphere

12. K.E of the projectile is E at the time of projection. Angle of projection is 45°. At maximum height, K.E is
    A) E
    B) $\frac{3E}{4}$
    C) $\frac{E}{2}$
    D) Zero

13. The greatest and the least values of the resultant of two forces are 10 N and 6 N. The magnitudes of the two forces are
    A) 7, 3
    B) 9, 1
    C) 4, 6
    D) 8, 2

SPACE FOR ROUGH WORK

14. A small mass m is moved slowly to a height R above the Earth surface. Radius of Earth is R. Work done in the process is

A) $\frac{1}{2}$mg R

B) mg R

C) –mg R

D) $\frac{-1}{2}$mg R

15. A swimmer under water observes a bird 0.6m away from the water surface. The actual distance of the bird from water surface is ($\mu_w = 4/3$)

A) 0.45 m

B) 0.4 m

C) 0.35 m

D) 0.8 m

16. For a prism, refractive index of its material is $\cot\frac{A}{2}$ The minimum angle of deviation is

A) 180 – A

B) 180 –2A

C) 90 – A

D) 90 + A

17. In the shift method to determine the focal length of a lens, m_1 & m_2 are the magnifications at two positions of the lens – separated by a distance x to get clear images on the screen. Focal length of lens is

A) $\frac{x}{m_1 + m_2}$

B) $\frac{x}{(m_1 + m_2)^2}$

C) $\frac{x}{m_1 \sim m_2}$

D) $\frac{x}{(m_1 \sim m_2)^2}$

SPACE FOR ROUGH WORK

18. If α is the critical angle of incidence in a denser medium, β is the polarizing angle of incidence at its surface then

A) $\tan\alpha = \sin\beta$

B) $\sin\beta \tan\alpha = 1$

C) $\sin\alpha = \tan\beta$

D) $\tan\beta \sin\alpha = 1$

19. Two thin convex lenses having focal lengths f_1 and f_2 are kept coaxially separated by a distance such that resultant power is zero. Distance between the lenses is

A) $f_1 + f_2$

B) $(f_1 + f_2) / 2$

C) $f_1 - f_2$

D) $\sqrt{f_1^2 + f^2_2}$

20. A sound wave has a frequency of 500 Hz and velocity 350 m/s. Distance between consecutive particles having phase change of 60 degree is

A) 0.7m

B) 0.12m

C) 1.2m

D) 0.07m

21. Beats are the result of

A) diffraction

B) destructive interference

C) superposition of waves with slightly differing frequencies travelling in opposite directions

D) superposition of waves with slightly differing frequencies travelling in the same direction

SPACE FOR ROUGH WORK

22. Addition of 6kg wt. to the tension doubles the fundamental frequency emitted by a sonometer wire. Original tension in kg wt is

A) 8

B) 2

C) 6

D) 4

23. Two charges 5 μC and 15 μC are kept separated by a distance 1m. The ratio of forces acting on them will be

A) 1:3

B) 3:1

C) 9:1

D) 1:1

24. A charge q is placed at the centre of a line joining two charges Q, Q. System of these charges will be in equilibrium if q is

A) $\frac{-Q}{2}$

B) $-Q$

C) $\frac{-Q}{4}$

D) $\frac{Q}{2}$

25. A charged metal sphere B is kept inside a large hollow uncharged metal sphere A. They are electrically connected. Then

A) B retains all the charge

B) Charges flow from B to A until charges on them are equal

C) Charges flow from B to A until common potential is attained

D) All the charges move from B to A

SPACE FOR ROUGH WORK

26. A parallel plate capacitor 500 μF is charged to 100 V. Battery supply is cut off. Dielectric slab of thickness equal to the distance between the plates and dielectric constant 5 is introduced. Energy stored in the capacitor
    A) increases by 0.5J
    B) decreases by 0.5J
    C) decreases by 2J
    D) increases by 2J

27. Charges of Q, Q are placed at each of two opposite corners of a square. Charges of q, q are placed at other opposite corners. If the resultant electric force on Q is zero, then Q and q are related as
    A) $Q = +2\sqrt{2}\,q$
    B) $Q = -2\sqrt{2}\,q$
    C) $Q = -\sqrt{2}\,q$
    D) $Q = 2q$

28. A capacitor of capacity 500 μF is charged at the rate of 100 μC/s. Time taken for charging the capacitor to 20V is
    A) 100s
    B) 50s
    C) 25s
    D) 10s

29. With the introduction of a thin glass plate of refractive index μ and thickness t in the path of one of the interfering beams, central fringe shifts to the position occupied by N^{th} bright fringe. If λ is wave length of light used, thickness of the plate 't' is
    A) $\frac{(\mu-1)\lambda}{N^2}$
    B) $\frac{N\lambda}{(\mu-1)}$
    C) $\frac{(\mu-1)\lambda}{N}$
    D) $\frac{(\mu^2-1)\lambda}{N}$

SPACE FOR ROUGH WORK

30. In an interference experiment, the ratio of intensities of the bright to dark fringe is 16:1. The amplitudes of two superposing waves are in the ratio

A) 16:1

B) 4:1

C) 3:5

D) 5:3

31. Limit of resolution of microscope is x. The space between the object and objective is filled with medium of refractive index n. Resolving power of microscope is

A) $\frac{n^2}{x}$

B) $\frac{n}{x}$

C) $\frac{1}{nx}$

D) $\frac{1}{n^2x}$

32. In the case of diffraction through a single slit lights of wave lengths λ_1 and λ_2 are used. Second minimum due to λ_1 coincides with second secondary maximum due to λ_2. Then $\lambda_1 : \lambda_2$ is

A) 4:5

B) 2:5

C) 1:1

D) 5:4

33. Newton's rings in the reflected system consist of alternate bright and dark circular rings

A) with central bright spot, rings equally spaced

B) with central dark spot, rings equally spaced

C) with central bright spot, rings coming closer with increase in order

D) with central dark spot, rings coming closer with increase in order

SPACE FOR ROUGH WORK

34. Grating spectrum in 1st order and Prism spectrum of a given source are studied. Then
    A) Prism spectrum will be brighter.
    B) Grating spectrum will be brighter.
    C) Both Prism and Grating spectra are equally bright.
    D) which spectrum is brighter is decided by source intensity.

35. For a doubly refracting crystal, difference in refractive indices of O ray and E ray is 0.012. Wavelength of light used is 600nm. Thickness of quarter wave plate is
    A) 10 μm
    B) 1.25 μm
    C) 12.5 μm
    D) 1μm

36. Resonant frequency of a series LCR circuit is 600 Hz. Quality factor is 2.5. Difference between half power frequencies will be
    A) 1500 Hz
    B) 600 Hz
    C) 150 Hz
    D) 240 Hz

37. Two wires A & B are of the same material. A is twice as long as B. Diameter of B is thrice as that of A. Their resistances are in the ratio (R_A:R_B)
    A) 18:1
    B) 1:18
    C) 9:2
    D) 2:9

38. Meissner effect in superconductors essentially means, superconductor in superconducting phase is a
    A) perfect ferromagnet
    B) perfect paramagnet
    C) perfect diamagnet
    D) perfect antiferomagnet

SPACE FOR ROUGH WORK

39. If V_1 and V_2 are the voltmeter readings taken across R_1 and R_2 connected in series ($R_2 > R_1$) individually, V is the supply voltage as measured using same voltmeter, then

A) $V=V_1+V_2$

B) $V>V_1+V_2$

C) $V<V_1+V_2$

D) $V=V_2-V_1$

40. When a current is passed through a T.G in good condition, the aluminium pointer reads 0° - 0°. This means that the coil is set

A) along B_H

B) perpendicular to B_H

C) inclined at 45° to B_H

D) along geographic N-S direction

41. A Galvanometer can measure current up to 20 mA. When a resistance of 3900 Ω is connected in series with it, maximum voltage of 80 V can be measured. Resistance of the Galvanometer is

A) 200Ω

B) 150Ω

C) 100Ω

D) 50 Ω

42. The susceptibility of a material is 49. Absolute magnetic permeability of the material is

A) 50 H/m

B) 2×10^{-5} H/m

C) $2\pi \times 10^{-5}$ H/m

D) $4\pi \times 10^{-7}$ H/m

SPACE FOR ROUGH WORK

43. A steady current is passed through a vertical spring from whose lower end a weight is suspended. The spring

A) further elongates

B) contracts

C) breaks down

D) remains undisturbed

44. Alternating voltage and current in a circuit are given by V=300 sin 314 t and I=10 sin $\left(314t+\frac{\pi}{3}\right)$. Then the average power consumed is

A) 0.5kw

B) 0.75kw

C) 1kw

D) 1.5kw

45. An alternating current of 50 Hz, peak value of current 2 A is passed through a coil of inductance 0.5H. Peak voltage induced in the coil is

A) 50 V

B) 100 V

C) 200 V

D) 400 V

46. A and B are two wires made of the same material. Radius of A is twice that of B. When the same current flows through them, drift velocities of electrons in them V_A and V_B are related as

A) $V_A = 4V_B$

B) $V_B = 4\,V_A$

C) $V_A = V_B$

D) $V_B = 2\,V_A$

SPACE FOR ROUGH WORK

47. (1) U-V rays, (2) Radio waves, (3) IR waves, (4) X rays are the different regions of electromagnetic spectrum. Arranging them in the increasing order of wavelength we have

A) 4, 1, 3, 2

B) 2, 3, 1, 4

C) 4, 3, 1, 2

D) 2, 4, 3, 1

48. Photons with energies twice and five times the work function of a metal are incident on its surface. Ratio of the velocities of photo electrons emitted in the two cases will be

A) 4:1

B) 1:4

C) 2:1

D) 1:2

49. Strong radiations from an electric arc in a quartz bulb are mainly a source of

A) X rays

B) γ rays

C) Visible light

D) U-V rays

50. The energy required to ionise an excited H-atom is

A) 3.4 eV or less

B) 3.4 eV or more

C) >10.2 eV

D) >12.1 eV

51. Radiations from a radioactive sample are moving upwards. A magnetic field acts from East to West. β rays are deflected towards

A) South

B) North

C) East

D) West

SPACE FOR ROUGH WORK

52. In a radioactive series $^{238}_{92}U$ changes to $^{206}_{82}Pb$ through n_1 α decay and n_2 β decay processes. Then

A) $n_1 = 8;\ n_2 = 6$

B) $n_1 = 6;\ n_2 = 6$

C) $n_1 = 6;\ n_2 = 8$

D) $n_1 = 8;\ n_2 = 8$

53. Count rate from 100 cc of a radioactive liquid is 3000/min. Some of this liquid is discarded. The count rate of remaining liquid after 2 half lives is 300/min. The volume of discarded liquid is

A) 20 cc

B) 40 cc

C) 60 cc

D) 80 cc

54. If R_A and R_B are the radii of two nuclei with mass numbers 8 and 27, $R_A : R_B$ is equal to

A) 8: 27

B) 27: 8

C) 2: 3

D) 3: 2

55. A full wave rectifier using two diodes, is used to rectify ac voltage V = 10Sin (628t). Number of half sine pulses obtained per sec at the output will be

A) 50

B) 100

C) 200

D) 25

56. Radiations having wavelengths 400nm and 600nm pass through a gas. Intensity of scattered radiation will be in the ratio

A) 81:16

B) 16:81

C) 4:9

D) 9:4

SPACE FOR ROUGH WORK

57. If $\lambda_1, \lambda_2, \lambda_3$ are the wavelength of Rayleigh line, Stokes line and anti-Stokes line in Raman spectrum, then

A) $\lambda_1 = \lambda_2 = \lambda_3$

B) $\lambda_1 < \lambda_2 < \lambda_3$

C) $\lambda_1 > \lambda_2 > \lambda_3$

D) $\lambda_2 > \lambda_1 > \lambda_3$

58. In Dunnington's method of determining e/m of electron, the deflecting field used is

A) weak dc magnetic field only

B) strong dc magnetic field only

C) both electric and magnetic fields which are strong

D) only weak ac electric field

59. In the case of a prism, as the angle of deviation decreases, the difference between angles of incidence and emergence

A) increases

B) decreases

C) remains constant

D) increases or decreases depending on the nature of prism material

60. A material selected to prepare a resistance coil must have (α is the temperature coefficient of resistance of material of wire and σ is the specific resistance of the material of wire)

A) low σ high α

B) high σ low α

C) low α low σ

D) high α high σ

SPACE FOR ROUGH WORK

CHEMISTRY

61. A mixture of phenol and chlorobenzene can be separated using
A) alcohol
B) dilute HCl
C) dilute NaOH
D) ether

62. Which one of the following is the weakest acid
A) p- nitrobenzoic acid
B) p- chlorobenzoic acid
C) benzoic acid
D) p- toluic acid

63. When 1- chloropropane and 2- chloropropane are allowed to react with metallic sodium in ether we get,
A) 2- methyl pentane
B) pentane
C) 3- methyl pentane
D) hexane

64. Which one of the following forms an yellow oily liquid with nitrous acid
A) aniline
B) dimethyl aniline
C) methyl aniline
D) trimethyl amine

65. The number of isomers formed by 2- butene are,
A) 2
B) 3
C) 4
D) 5

SPACE FOR ROUGH WORK

66. –I effect is shown by,
    A) $(CH_3)_3$-C-
    B) $(CH_3)_2$-CH-
    C) $-NO_2$
    D) C_2H_5-

67. Picric acid is
    A) 2,4,6 trinitrophenol
    B) 1,3,5 trinitrophenol
    C) 2,4,6 trinitrotoluene
    D) 1,2,3 trinitroglycerine

68. In SN^2 mechanism the most reactive one is,
    A) isopropyl chloride
    B) ethyl bromide
    C) 2- chlorobutane
    D) tertiary butylbromide

69. An example for an acidic amino acid is,
    A) tyrosine
    B) lysine
    C) aspartic acid
    D) serine

70. The number of isomeric amines formed by C_3H_9N are
    A) 3
    B) 2
    C) 4
    D) 5

71. A mixture of equal quantities of (+) and (-) enantiomeric compounds are called,
    A) homogenous mixture
    B) equilibrium mixture
    C) racemic mixture
    D) resonance hybrid

SPACE FOR ROUGH WORK

72. Acid hydrolysis of sucrose is called
    A) racemisation
    B) epimeristaion
    C) inversion
    D) mutarotation

73. Addition compound with sodium bi-sulphite is not formed by,
    A) acetone
    B) acetophenone
    C) acetaldehyde
    D) benzaldehyde

74. Schiff's reagent contains,
    A) pyrogallol
    B) resorcinol
    C) rosanoline hydrochloride
    D) cresol

75. Glucose reduces Fehling's solution to a red precipitate of,
    A) cupric oxide
    B) cuprous oxide
    C) cupric hydroxide
    D) cupric carbonate

76. Linkage present in sucrose is,
    A) 1, 4 linkage
    B) 2, 6 linkage
    C) 1, 5 linkage
    D) 1, 2 linkage

77. An example for aralkyl halide is,
    A) chlorobenzene
    B) benzyl chloride
    C) benzoyl chloride
    D) benzal chloride

SPACE FOR ROUGH WORK

78. An aqueous solution of an amino acid contains,

A) anions

B) cations

C) dipolar ions

D) complex ion

79. Peptides are identified by,

A) Molisch's test

B) Acrolein test

C) Fehling's test

D) Biuret test

80. Given the pK_b values, which one of the following is the strongest base,

A) 3.56

B) 2.72

C) 4.85

D) 6.57

81. In a reversible reaction, just before attaining the chemical equilibrium,

A) Velocity of the forward reaction is equal to the velocity of the backward reaction

B) Velocity of the forward reaction increases

C) Velocity of the forward reaction decreases

D) Velocity of the backward reaction decreases

82. The amount of sodium hydroxide present in $2dm^3$ of 0.4 M solution is,

A) 16 g

B) 64 g

C) 8 g

D) 32 g

SPACE FOR ROUGH WORK

83. 25 cc of NaOH neutralises with 20 cc of 0.15 N HNO_3. The mass of NaOH present in 500 cc of the given solution is

A) 1.2 g

B) 2.4 g

C) 3.6 g

D) 4.8 g

84. For velocity constant, the Arrhenius equation is,

A) $Ae^{E/2RT}$

B) $Ae^{E/RT}$

C) $Ae^{-E/2RT}$

D) $Ae^{-E/RT}$

85. In the neutralisation of KOH and HNO_3, ΔH is,

A) –53.7 KJ

B) +53.7 KJ

C) –57.3 KJ

D) +57.3 KJ

86. For the reaction, $PCl_{3(g)} + Cl_{2(g)} \rightleftharpoons PCl_{5(g)}$,

A) $\Delta H = \Delta E + RT$

B) $\Delta H = \Delta E + 1/RT$

C) $\Delta H = \Delta E - RT$

D) $\Delta E = \Delta H[RT]$

87. Which one of the following statement is **WRONG**. Velocity constant of a reaction,

A) depends upon the initial concentration of the reactants

B) is a measure of the velocity of the reaction

C) depends upon the temperature

D) remains constant though the velocity of the reaction goes on decreasing

SPACE FOR ROUGH WORK

88. The least elevation of boiling point is shown by,
    A) KCl
    B) $MgCl_2$
    C) Glucose
    D) $AgNO_3$

89. For a reaction in which ΔH and ΔS are positive, the reaction will be spontaneous when the,
    A) temperature is very low
    B) temperature is very high
    C) temperature is normal
    D) temperature is 273 K

90. The decomposition of hydrogen iodide on the surface of gold is an example for,
    A) first order reaction
    B) zero order reaction
    C) second order reaction
    D) pseudo first order reaction

91. A first order reaction is half completed in 30 minutes. The velocity constant of the reaction is,
    A) 23.1 min^{-1}
    B) 2.31 min^{-1}
    C) 0.0231 min^{-1}
    D) 0.231 min^{-1}

92. The quantity of electricity required to deposit 5.4 g of silver on silver electrode during electrolysis is,
    A) 1 Faraday
    B) 0.05 Faraday
    C) 0.5 Faraday
    D) 0.1 Faraday

SPACE FOR ROUGH WORK

93. Which one of the following statement is **WRONG**. Ionisation of an electrolyte in solution depends upon,

A) temperature

B) concentration

C) pressure

D) common ion effect

94. The solubility product of AB type salt is 10^{-6} at 298 K. The solubility of the salt is,

A) 10^{-2} M

B) 10^{-4} M

C) 10^{-1} M

D) 10^{-3} M

95. Henderson equation for an acid buffer is

A) $pH = pk_a \text{ X } \log \frac{[Salt]}{[Acid]}$

B) $pH = pk_a - \log \frac{[Salt]}{[Acid]}$

C) $pH = pk_a + \frac{[Salt]}{[Acid]}$

D) $pH = pk_a + \log \frac{[Salt]}{[Acid]}$

96. An example for an acid buffer is,

A) HCl and NaCl

B) H_3PO_4 and NaH_2PO_4

C) NH_4OH and NH_4Cl

D) NH_4OH and CH_3COOH

SPACE FOR ROUGH WORK

97. Which one of the following has the highest pH value
A) 0.1 M HCl
B) 0.01 M HCl
C) 0.001 M HCl
D) 0.0001 M HCl

98. The standard reduction potentials of the elements I, II, III and IV are –0.44V, +0.8V, -0.76V and +0.34V respectively. The most electronegative element is
A) IV
B) III
C) II
D) I

99. Conjugate base of OH^- is,
A) H_2O
B) H^+
C) H_3O^+
D) O^{--}

100. Siderite is,
A) Sulphide ore
B) oxide ore
C) carbonate ore
D) halide ore

101. An example for a ferromagnetic metal is,
A) cobalt
B) chromium
C) copper
D) manganese

102. An example for a negative ligand is,
A) nitro
B) nitronium
C) carbonyl
D) nitrosonium

SPACE FOR ROUGH WORK

103. Oxalato ion is,
A) monodentate ligand
B) bidentate ligand
C) tridentate ligand
D) polydentate ligand

104. Cuprammonium ion is having,
A) tetrahedral structure
B) octahedral structure
C) square planar structure
D) linear structure

105. Hydrometallurgy is used in the extraction of,
A) gold
B) magnesium
C) copper
D) zinc

106. Poling is used in the purification of,
A) gold
B) copper
C) lead
D) aluminium

107. An example for cationic complex is,
A) potassium ferro cyanide
B) sodium argento cyanide
C) potassium mercuric iodide
D) cuprammonium sulphate

108. Electrometallurgy is used in the extraction of,
A) zinc
B) magnesium
C) tin
D) lead

SPACE FOR ROUGH WORK

109. Carnallite is,
A) oxide ore
B) sulphide ore
C) carbonate ore
D) halide ore

110. Which one of the following is non paramagnetic
A) N_2
B) N_2^{2+}
C) O_2^{2-}
D) N_2^{2-}

111. Which one of the following is most electronegative in character
A) nitrogen
B) oxygen
C) bromine
D) silicon

112. An element having atomic number 21 is
A) an alkaline earth metal
B) inert gas
C) inner transition element
D) transition element

113. Number of ions produced by $[Pt(NH_3)_6\ Cl_2]Cl_2$ in solution is
A) 3
B) 4
C) 5
D) 6

114. In the periodic table, aluminium belongs to,
A) s-block
B) p-block
C) d-block
D) f-block

SPACE FOR ROUGH WORK

115. The electronic configuration of the element having atomic number 16 is,
A) $1s^2 2s^2 2p^6 3s^2 3p^2 4s^2$
B) $1s^2 2s^2 2p^6 3s^2 3d^4$
C) $1s^2 2s^2 2p^6 3s^2 3p^2 3d^2$
D) $1s^2 2s^2 2p^6 3s^2 3p^4$

116. Nessler's reagent is
A) $H_2[HgI_4]$
B) $K_2[HgI_4]$ in basic medium
C) $K_2[HgI_4]$ in strong HCl
D) $K_2[HgI_4]$ in neutral medium

117. The volume of 0.1N HCl which reacts completely with 1 gram of calcium carbonate is,
A) 100 cc
B) 400 cc
C) 200 cc
D) 300 cc

118. 2.5% carbon is present in,
A) steel
B) pig iron
C) wrought iron
D) stainless steel

119. Reduction of organic cyanides gives,
A) carboxylic acid
B) acid amide
C) primary amine
D) acid azide

120. The metal which dissolves in dilute sulphuric acid is,
A) copper
B) silver
C) aluminium
D) gold

SPACE FOR ROUGH WORK

BIOLOGY

121. Turgor is exhibited by

A) Paramecium

B) Amoeba

C) Alga

D) Virus

122. The period of time granted for a patent is,

A) 20 years

B) 5 years

C) 50 years

D) 100 years

123. Oxides of Nitrogen and Hydrocarbons released by automobiles interact to form

A) SO_2

B) carbon monoxide

C) PAN and Ozone

D) nitric acid

124. Surgical removal of testes is called

A) vasectomy

B) tubectomy

C) castration

D) gastrectomy

125. _____ of the brain contains centers to control heart beat and breathing

A) cerebellum

B) cerebrospinal fluid

C) cerebral hemisphere

D) medulla oblongata

SPACE FOR ROUGH WORK

126. Which one of the following helps as an organ for nutrition, respiration, excretion and hormone production for the developing embryo?

A) placenta
B) yolk sac
C) amnion
D) umbilical cord

127. The acid rain is due to

A) presence of CO_2 in the atmosphere
B) presence of large quantity of SO_2 in the atmosphere
C) ozone layer depletion
D) presence of CFC in the atmosphere

128. Natural selection of peppered moth was a consequence of

A) green revolution
B) global warming
C) industrialisation
D) deforestation

129. A flower with inferior ovary is known as

A) epigynous
B) perigynous
C) hypogynous
D) protogynous

130. Intervertebral disc is formed of _____ cartilage

A) hyaline
B) elastic
C) fibrous
D) calcified

SPACE FOR ROUGH WORK

131. Coralloid root is characteristic of

A) Leguminous plant

B) Cycas

C) Fern

D) Moss

132. Gametes of Aa/Bb individual will be,

A) Aa, Bb only

B) AB, ab only

C) AB, ab, aB only

D) AB, Ab, aB, ab only

133. Elongation of genetically dwarf plants can be achieved with the help of

A) Auxin

B) Cytokinin

C) Gibberellin

D) IAA

134. Phosphorylation was discovered by,

A) Arnon

B) Robert Hill

C) Calvin

D) Ruben and Komen

135. Syngenecious condition is found in

A) Tridax

B) Cucurbita

C) Hibiscus

D) Crotalaria

SPACE FOR ROUGH WORK

136. The random changes in the frequency of alleles in a small population (genetic drift) is called

A) Sewall Wright effect

B) Haldane effect

C) Hardy-Weinberg effect

D) Hugo de Vries effect

137. Gametophytic generation is dominant in

A) Pteridophyta

B) Bryophyta

C) Angiosperms

D) Gymnosperms

138. Tyloses are,

A) Extension of xylem parenchyma into trachea

B) Deposits on sieve plates

C) Deposits on sclerenchyma fibre

D) Deposits on sieve pores

139. One of the following can lead to the formation of gametes with 'XX' or 'XY' constitution

A) Non - disjunction

B) Non - synopsis

C) Mitotic crossing over

D) Sex - linkage

140. With reference to nitrogenous bases of DNA, which one of the following is NOT correct?

A) $A + C = T + G$

B) $A + G = T + C$

C) $G = C$

D) $C = T$

SPACE FOR ROUGH WORK

141. Hypothalamus is associated with

A) apetite

B) motor coordination

C) intelligence

D) sensory processing

142. The Cri du – chat syndrome is due to deletion in the short arm of _____ chromosome

A) 5^{th}

B) 15^{th}

C) X

D) 21^{st}

143. Which one of the following is NOT an exocrine gland?

A) liver

B) sweat gland

C) adrenal gland

D) salivary gland

144. A technique employed to transfer DNA bands from a gel to nitrocellulose matrix is,

A) Southern blot

B) Northern blot

C) Western blot

D) Eastern blot

145. The formation of blood cells in bone marrow is called

A) erythroblastosis

B) haemolysis

C) haemopoiesis

D) thrombopoiesis

SPACE FOR ROUGH WORK

146. POMATO is

A) a haploid plant

B) a plant obtained from protoplast hybridization

C) a plant obtained by organ culture

D) a plant developed by grafting

147. Duramen is a product of

A) phellogen

B) vascular cambium

C) apical meristem

D) phelloderm

148. Okazaki fragments are produced in_____ mode of DNA replication

A) semiconservative

B) semi cyclic

C) conservative

D) dispersive

149. The isotope of carbon used extensively in photosynthesis studies is,

A) ^{13}C

B) ^{14}C

C) ^{15}C

D) ^{16}C

150. Which of the following DOES NOT contain DNA?

A) chromosomes

B) ribosomes

C) chloroplast

D) mitochondria

SPACE FOR ROUGH WORK

151. The non-digestive enzyme which occurs in succus entericus is

A) sucrase

B) maltase

C) lipase

D) enterokinase

152. If a portion of DNA base sequence is GAT, the anticodon sequence complimentary to m–RNA of this sequence is,

A) GAT

B) CUA

C) GAU

D) GUA

153. Find the biodiversity 'hot spot'

A) Gir Forest

B) Kaziranga National Park

C) North Andamans

D) Western Ghats

154. By the introduction of three extraneous genes _____ new variety rice was produced

A) IR8

B) Rohini

C) Golden rice

D) Basmati

155. One of the following aids in immunity

A) RBC

B) Peyer's patches

C) Eosinophils

D) Goblet cells

SPACE FOR ROUGH WORK

156. Which of the following enzymes are known as molecular scissors?

A) Ligases

B) Hydrolases

C) RNA polymerases

D) Restriction endonucleases

157. Which of the following is a gaseous plant growth regulator?

A) Ethylene

B) Auxin

C) GA

D) ABA

158. The Rh factor in man is associated with

A) surface of lymphocytes

B) surface of RBC

C) blood serum

D) surface of thrombocytes

159. An example for a secondary meristem is

A) cork cambium

B) intercalary meristem

C) apical meristem

D) promeristem

160. The left lung in man has

A) 3 lobes

B) 2 lobes

C) 4 lobes

D) 6 lobes

SPACE FOR ROUGH WORK

161. Which one of the following is NOT a sacred species?

A) *Ficus relegiosa*

B) *Oscimum sanctum*

C) *Naja naja*

D) *Waltheria indica*

162. Father and mother of a child with blood group 'O' CANNOT belong to one of the following groups

A) AB & O

B) A & B

C) B & B

D) A & A

163. Which one of the following DOES NOT involve osmosis?

A) water passing from one xylem element to the other

B) water passing from soil to root hair

C) water passing into mesophyll cell from xylem

D) water passing from root hair cell to cortical cell

164. Graafian follicle secretes _____ hormone

A) ecdyson

B) leutinizing hormone

C) relaxin

D) estrogen

165. Which one of the following is NOT related to transpiration?

A) absorption and distribution of minerals

B) circulation of water

C) cooling effect

D) bleeding

SPACE FOR ROUGH WORK

166. Opium is extracted from the seeds of

A) *Papaver somniferum*

B) *Theobroma cocoa*

C) *Nicotiana tobaccum*

D) *Datura stramonium*

167. The ions involved in stomatal regulation is of

A) iron

B) magnesium

C) zinc

D) potassium

168. Synthesis of yolk is known as

A) proteogenesis

B) glycogenesis

C) oogenesis

D) vitellogenesis

169. Attractive force of cell walls for water molecules is called

A) cohesion

B) osmosis

C) plasmolysis

D) adhesion

170. Gall stones cause

A) diabetes

B) haemolytic jaundice

C) viral jaundice

D) obstructive jaundice

SPACE FOR ROUGH WORK

171. Number of carbon atoms present in Citric acid, Oxaloacetic acid and Pyruvic acid are _____, _____ and_____ respectively

A) 6, 3 and 3

B) 6, 4 and 3

C) 5, 4 and 3

D) 6, 4 and 2

172. The third cleavage in the zygote of frog is

A) longitudinal

B) latitudinal

C) equatorial

D) meridional

173. Which of the following reaction correctly represents photosynthesis?

A) $12\,H_2O + 12\,CO_2 \rightarrow C_6H_{12}O_6 + 6\,O_2 + 6\,H_2O$

B) $12\,H_2O + 12\,CO_2 \rightarrow C_6H_{12}O_6 + 6\,CO_2$

C) $12\,H_2O + 6\,CO_2 \rightarrow C_6H_{12}O_6 + 6\,O_2 + 6\,H_2O$

D) $6\,H_2O + 6\,CO_2 \rightarrow C_6H_{12}O_6 + 6\,O_2$

174. *Fasciola hepatica* lives in which part of the body of sheep?

A) blood

B) meninges

C) bile duct

D) intestine

175. 3 Phosphoglyceric acid is reduced to 3 Phosphoglyceraldehyde by

A) $NADH_2$

B) ATP

C) $FADH_2$

D) $NADPH_2$, ATP & Enzyme

SPACE FOR ROUGH WORK

176. Proteins present in silk fibers are

A) chondrin and mucin

B) collagen and elastin

C) fibrin and sericin

D) fibroin and sericin

177. Cytochromes in plant cells function mainly as

A) oxygen acceptor

B) CO_2 acceptor

C) electron acceptor

D) H_2O acceptor

178. Oxytocin induces the contraction of

A) pregnant uterus

B) urinary bladder

C) cardiac muscles

D) skeletal muscles

179. The chamber having the thickest wall in the heart of man is

A) right atrium

B) right ventricle

C) left atrium

D) left ventricle

180. Respiratory organs in terrestrial insects are

A) lungs

B) tracheae

C) gills

D) ctenidiae

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