UG - 2017

Test Admission Ticket No.	Question Booklet Version Code	Question Booklet Sr. No.
	B (Write this Code on your OMR Answer Sheet)	2301 (Write this number on your Answer Sheet)

OMR Serial Number

Candidates Kindly Note

- There are totally 180 questions in this booklet.
- The question paper and OMR (Optical Mark Reader) Answer Sheet are issued separately at the start of the examination.
- **Please ensure to fill in the following on your OMR answer sheet in the relevant boxes :**
  - Name
  - Question Booklet Version Code
  - Question Booklet Serial Number
  - Test Admission Ticket Number
- Kindly sign on your OMR answer sheet, only in the presence of the invigilator.
- Candidate should carefully read the instructions printed on the Question Booklet and OMR Answer Sheet and make correct entries on the Answer Sheet. As Answer Sheets are designed for OPTICAL MARK READER (OMR) SYSTEM, special care should be taken to mark the entries accurately.
- Special care should be taken to fill your QUESTION BOOKLET VERSION CODE and SERIAL No. and TEST ADMISSION TICKET No. accurately. The correctness of entries has to be cross-checked by the invigilators.
- Mark your responses only as indicated on the OMR Answer Sheet.
- Choice and sequence for attempting questions will be as per the convenience of the candidate.
- Kindly **DO NOT** use whitener or scribble, make stray marks on this question booklet as well as on the OMR answer sheet.
- Fill the appropriate circle completely like this ● for answering the particular question with **BLACK/BLUE BALL POINT PEN** only. **USE OF PENCIL FOR MARKING IS PROHIBITED.**
- Before commencing the examination, please verify all the pages are printed correctly, if not please draw the attention of your room invigilator for further assistance.
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- **There will be no Negative Marking.**
- No Mark/s will be awarded for multiple marking (marking multiple responses) of any question.
- **On the OMR answer sheet, use of whitener or any other material to erase/hide the circle once filled is not permitted.**
- Avoid overwriting and/or striking of answer once marked. THINK BEFORE YOU INK.
- Immediately after the prescribed examination time is over, the OMR sheet is to be returned to the invigilator.

Physics

1. If *a and b* are distances of an object and its real image from the respective nearer principle focus of a convex lens then its focal length f is given by

   a) $a \sim b$
   b) $\sqrt{a^2+b^2}$
   c) $\sqrt{ab}$
   d) $a + b$

2. A ray of light incident normally on one face of prism of angle 45^0, just emerges out of the other face. The refractive index of the prism material is approximately

   a) 1.5
   b) 1.4
   c) 1.6
   d) 1.7

3. 10 cells each of e.m.f 2V internal resistance 1Ω are in series with a load of 90Ω. One cell is reversed. Ratio of currents drawn in the two cases is

   a) 5 : 4
   b) 3 : 2
   c) 10 : 9
   d) 8 : 5

4. Equivalent resistances of two resistors connected in series and in parallel are 10Ω and 1.6 Ω respectively. The resistances, in Ω, of resistors are

   a) 6 and 4
   b) 8 and 2
   c) 10 and 2
   d) 3 and 7

5. The potentiometer is balanced in an experiment to determine e.m.f of a cell, at that moment current flows

   a) only in the primary circuit.
   b) only in the secondary circuit.
   c) both in primary and secondary circuit.
   d) neither in primary nor in secondary circuit.

6. A carbon resistor is coded with blue, brown, black and silver bands. The resistance value in Ω corresponds to

   a) 610±5%
   b) 61±5%
   c) 61±10%
   d) 610±10%

7. In a meter bridge experiment P is kept in left gap, Q is kept in right gap, the balancing length is 0.4 m. When Q is shunted by 10Ω balancing point shifts by 0.1m. Resistance Q is

   a) 5 Ω
   b) 10 Ω
   c) 15 Ω
   d) 20 Ω

8. An unsupported conductor carries current from west to east. In order that, it does not fall under gravity external magnetic field on the conductor should act towards

   a) east.
   b) west.
   c) north.
   d) south.

9. Magnetic dipole moment of a current loop does not depend on

   a) current in the loop.
   b) number of turns.
   c) area of loop.
   d) magnetic field in which it is situated.

10. A moving electron enters a strong uniform magnetic field region acting at right angles to its initial direction of travel. Its trajectory will be

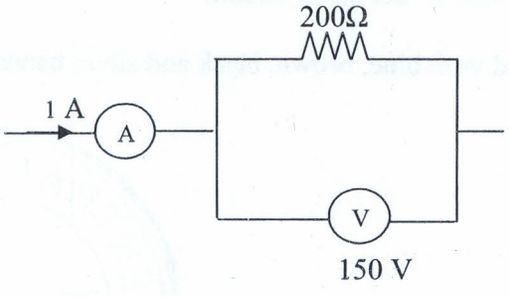
    a) a parabola.
    b) a straight line.
    c) an ellipse.
    d) a circle.

11. Two long, straight and parallel wires, separated by a certain distance carry currents in opposite directions. Force between them is

    a) attractive.
    b) repulsive.
    c) repulsive or attractive depending on the nature of medium between them.
    d) zero always.

12. If the ammeter and voltmeter readings are 1A and 150V respectively in the following circuit, the resistance of voltmeter is

    a) 300Ω
    b) 600Ω
    c) 450Ω
    d) 900Ω



13. Core of a transformer is laminated to reduce

a) hysteresis loss.
b) copper loss.
c) magnetic flux leakage loss.
d) eddy current loss.

14. A series LCR circuit has R = 1kΩ, L = 1H and C= 0.1μF. Quality factor of the circuit is approximately

a) 3.2
b) 1.6
c) 6.4
d) 2

15. Reduction factor of a tangent galvanometer is 0.8A. Current required to produce a deflection of 60^0 in this galvanometer is approximately

a) 1.4A
b) 1.6A
c) 0.4A
d) 1.2A

16. The process in which no heat enters or leaves the system is called

a) isothermal process.
b) isobaric process.
c) adiabatic process.
d) isochoric process.

17. The efficiency of a heat engine working between source at temperature T_1, and sink temperature T_2 is η. If both the temperatures are decreased by 100K, the new efficiency is

a) equal to η.
b) greater than η.
c) less than η.
d) greater or less than η depending on initial temperature.

18. An ideal gas at temperature T is compressed adiabatically such that its volume becomes $\frac{1}{4}$ of its original volume (γ =1.5). Change in temperature is

a) T
b) 2T
c) $\frac{T}{2}$
d) zero

19. Radiating power of a black body at temperature T_1 is E and it is 16E at temperature T_2. Then T_2 is

a) 16 T_1
b) 8 T_1
c) 4 T_1
d) 2 T_1

20. In a uniform circular motion of a particle, the quantity that remains constant is

a) velocity.
b) acceleration.
c) angular momentum.
d) kinetic energy.

21. With increase in temperature, the viscosity of

a) gases increases and liquids decreases.
b) gases decreases and liquids increases.
c) both gases and liquids decrease.
d) both gases and liquids increase.

22. Two bodies are projected from the same point with the same velocity, angles of projection being 60^0 and 30^0 to the horizontal.

a) range of the two projectiles will be same.
b) maximum height attained will be same.
c) both range and maximum height attained are same.
d) both range and maximum height attained are different.

23. Acceleration due to gravity of the earth has the highest value

a) at the centre of the earth.
b) on the surface of the earth .
c) at a height equal to radius of the earth.
d) at ozone layers surrounding the earth.

24. If the momentum of a body increases by 50%. Kinetic energy of the body

a) increases by 50%.
b) decreases by 50%.
c) increases by 125%.
d) increases by 100%.

25. Velocity of falling rain drops

a) increases continuously.
b) decreases continuously.
c) increases initially but reaches a maximum constant value.
d) decreases initially but reaches a minimum constant value.

26. A soap bubble of radius R is blown so that its diameter is doubled. If T is the surface tension of soap solution, work done, at constant temperature is

a) $8\pi R^2T$
b) $12\pi R^2T$
c) $16\pi R^2T$
d) $24\pi R^2T$

27. Speed of sound at N.T.P. is 330 ms^{-1}. Its value in ms^{-1} at 2 atmospheric pressure and 546K is approximately

a) 467
b) 350
c) 660
d) 435

28. Second overtone in case of an open pipe is same as second overtone in case of closed pipe. Their lengths are in the ratio ($L_0 : L_c$)

a) 5 : 6
b) 6 : 5
c) 4 : 3
d) 3 : 4

29. A source of sound and listener are approaching each other with velocity 15 ms^{-1}. The frequency of the note emitted by source is 495Hz. The frequency as heard by listener is (velocity of sound in air = 345ms^{-1})

a) 495 Hz
b) 540 Hz
c) 580 Hz
d) 1080 Hz

30. Quality of a musical note depends on its

a) amplitude.
b) frequency.
c) velocity of sound in medium.
d) overtones present.

31. Lenz's Law is a consequence of law of conservation of

a) energy.
b) momentum.
c) charge.
d) angular momentum.

32. Current gain of transistor in CE circuit is 40. The ratio of emitter current to base current is

a) 40
b) 41
c) 42
d) 43

33. When p - n junction is reverse biased, the width of the depletion region

a) increases.
b) decreases.
c) becomes zero.
d) remains constant.

34. Force between two protons inside the nucleus

(i) obeys inverse square law.
(ii) is equal in strength to electromagnetic force between them.

a) Only (i) is true.
b) Only (ii) is true.
c) Both (i) and (ii) are true.
d) Both (i) and (ii) are false.

35. In 2 hours, $\frac{15}{16}th$ of the radioactive sample undergo disintegration, mean life of the sample in minutes is approximately

a) 28
b) 43
c) 56
d) 86

36. Specific binding energy for deuteron and an α particle are X_1 and X_2 respectively. The energy released in the reaction ${}_1^2H + {}_1^2H \rightarrow {}_2^4He$ will be

a) $4X_2 - X_1$
b) $2X_2 - X_1$
c) $4(X_2 - X_1)$
d) $2(2X_2 - X_1)$

37. A logic gate whose output will be in logic 1 state only when the two inputs present are dissimilar is called

a) XOR
b) OR
c) NAND
d) NOR

38. Force on an electron in the n^{th} Bohr orbit is proportional to

a) n^4
b) $\frac{1}{n^4}$
c) n^2
d) $\frac{1}{n^2}$

39. Kinetic energy of electron E when incident wavelength is λ_1. To increase the kinetic energy of electron to 2E, incident wavelength must be λ_2. Relation between them is

a) $\lambda_2 = 2\lambda_1$.

b) $\lambda_2 = \frac{\lambda_1}{2}$.

c) λ_2 is slightly less than $\frac{\lambda_1}{2}$.

d) λ_2 is slightly greater than $\frac{\lambda_1}{2}$.

40. In Raman spectrum, spectral line having frequency greater than incident frequency is called

a) Rayleigh line.
b) Stoke line.
c) Anti-stoke line.
d) Mie line.

41. In an electron microscope, if the accelerating potential is increased from 20 kV to 80 kV, resolving power of the microscope R becomes

a) R^2
b) 2R
c) 4R
d) $\frac{R}{4}$

42. Proton is a

a) lepton.
b) boson.
c) hyperon.
d) fermion.

43. For electrons in n = 3 state, excitation energy is (energy of electron in ground state of H atom = $-13.6\ eV$)

a) 0.65 eV
b) 0.85 eV
c) 0.65 eV
d) 1.5 eV

44. Dimension of Planck's constant is the same as that of

a) linear momentum.
b) angular momentum.
c) power.
d) energy.

45. Ratio of short wave length limits of Lyman and Balmer series is

a) 1 : 4
b) 4 : 1
c) 5 : 27
d) 27 : 5

46. Solar spectrum appears as

a) line absorption spectrum, on normal days.
b) line absorption spectrum, only on days of total solar eclipse.
c) line emission spectrum, on normal days.
d) band absorption spectrum, on days of total solar eclipse.

47. A spherical gaussian sphere surrounds a static point charge Q. Total flux across the sphere is Φ. The volume of the sphere is doubled. Then, total flux across this sphere is

a) 3Φ
b) 2Φ
c) $\Phi/2$
d) Φ

48. The forces between two point charges kept separated in free space by a distance x_1 and in a medium at a distance x_2 are same. The dielectric constant of the medium (K) is

a) $\left(\frac{x_1}{x_2}\right)^2$
b) $\left(\frac{x_2}{x_1}\right)^2$
c) $\left(\frac{x_2}{x_1}\right)$
d) $\left(\frac{x_1}{x_2}\right)$

49. The region within a charged conducting sphere will have

a) both nonzero electric field and electric potential.
b) only nonzero electric field.
c) only electric potential varying with distance from the centre.
d) only electric potential which is every where same as that on the surface.

50. A dielectric parallel plate capacitor is connected to a DC source and the dielectric slab is pulled out. Then,

a) some extra charges are pulled out of the battery.
b) some charges are returned to the battery.
c) potential drop across the capacitor is reduced.
d) energy of the charged capacitor is unaltered.

51. In the case of a charged capacitor, the ratio of the energy stored in the capacitor to the energy supplied is

    a) 1/2
    b) 2
    c) 1
    d) 2/3

52. Capacitor of capacitance $10\,\mu F$ charged to 50 volts is connected in parallel to an uncharged capacitor $50\,\mu F$. The loss in the energy of the system in mJ is

    a) 10.4
    b) 5.2
    c) 20.8
    d) 2.6

53. In Young's double slit experiment, a thin glass plate of thickness t, refractive index n is introduced (λ is the wavelength of light used). The pattern shifts by N fringes. The thickness of the glass plate is

    a) $\frac{N\lambda}{(n-1)}$
    b) $\frac{N\lambda}{2(n-1)}$
    c) $\frac{N\lambda}{n}$
    d) $\frac{2N\lambda}{(2n-1)}$

54. In the reflected system the diameters of dark Newton's rings are proportional to

    a) square of the natural numbers.
    b) square of the odd natural numbers.
    c) square root of natural numbers.
    d) square root of odd natural numbers.

55. As the screen is moved away from an illuminated single slit causing diffraction, the linear width of the central maximum (X) and its angular width (θ) change as under

    a) Both X and θ increase.
    b) Both X and θ decrease.
    c) X increases and θ decreases.
    d) X increases and θ remains same.

56. When unpolarised light is incident on a surface at the polarising angle,

(i) Reflected light will have optical vibrations perpendicular to plane of incidence.
(ii) Refracted light will have optical vibrations both parallel and perpendicular to plane of incidence.

    a) Both (i) and (ii) are true.
    b) Only (i) is true.
    c) Only (ii) is true.
    d) Both (i) and (ii) are false.

57. Plane polarised light is incident on a quarter wave plate such that optical vibration make an angle 45° with axis of plate. The emerging light is

a) partially polarised .
b) plane polarized.
c) elliptically polarized.
d) circularly polarised

58. A point object is viewed normally through a rectangular glass slab of thickness 15 cm ($n_g = 1.5$) and a column of water of length 12 cm ($n_w = 4/3$), the object appears to have raised by

a) 19 cm
b) 8 cm
c) 12 cm
d) 15 cm

59. Statements concerning optical fibres are: (n = refractive index)

(i) They are made of low n material covered by high n material.
(ii) Communication using optical fibres is fast and economical.

a) Only (i) is correct.
b) Only (ii) is correct.
c) Both (i) and (ii) are correct.
d) Both (i) and (ii) are wrong.

60. An equiconvex lens of focal length 0.2 m is divided into two parts by a plane perpendicular to the principal axis passing through its optic centre. The power of each part is

a) 5 D
b) 10 D
c) 2.5 D
d) 0.5 D

Chemistry

61. The quantity of electricity required to liberate 112 cm^3 of hydrogen at STP from acidified water is

a) 1 faraday
b) 965 coulombs
c) 86500 coulombs
d) 0.1 faraday

62. Which of the following is an example of Lewis acid?

a) $FeCl_3$
b) C_2H_5ONa
c) HCOOH
d) HCl

63. The pH of a solution of hydrochloric acid is 4. The molarity of the solution is

a) 4.0
b) 0.4
c) 0.0001
d) 0.04

64. In a galvanic cell

a) electrical energy is converted into chemical energy
b) chemical energy is converted into electrical energy
c) chemical energy is converted into heat
d) electrical energy is converted into heat

65. An example for a strong electrolyte is

a) ammonium hydroxide
b) urea
c) sodium acetate
d) sucrose

66. The standard electrode potentials of Zn^{2+}/Zn electrode and Ag^{+}/Ag electrode are -0.763 V and +0.799 V respectively. The standard electrode potential of the cell is

a) 1.562 V
b) 0.036 V
c) -1.562 V
d) 0.799 V

67. 0.01 M ammonia solution is 5% ionized, the concentration of OH^{-} ions is

a) 0.005 M
b) 0.001M
c) 0.0005 M
d) 0.05 M

68. A solution is called saturated, if

a) ionic product > solubility product
b) ionic product < solubility product
c) ionic product = solubility product
d) solubility product = $\frac{\text{solubility}}{2}$

69. Which of the following is not a colligative property?

a) Depression in freezing point
b) Osmotic pressure
c) Optical activity
d) Relative lowering of vapour pressure

70. Which law of thermodynamics introduces the concept of entropy?

a) First law
b) Second law
c) Zeroth law
d) Third law

71. The free energy change, $\Delta G = 0$, when

a) the reactants are initially mixed
b) the reactants are completely consumed
c) the system is at equilibrium
d) a catalyst is added

72. Gold number is a measure of the

a) stability of a colloidal system
b) power of coagulation of a solution by an electrolyte
c) efficiency of protective action of a substance
d) size of colloidal particle

73. In the case of small cuts, bleeding is stopped by applying potash alum. Here alum acts as

a) disinfectant
b) fungicide
c) coagulating agent
d) germicide

74. Body centred cubic lattice has a coordination number of

a) 6
b) 8
c) 10
d) 12

75. Empirical formula of a compound is CH_2. The compound may be a/an

a) alkyne
b) diene
c) cycloalkene
d) cycloalkane

76. Which of the following minerals does not contain oxygen?

a) Bauxite
b) Gypsum
c) Dolomite
d) Cryolite

77. Azimuthal quantum number defines

a) e/m ratio of electron
b) spin of electron
c) magnetic moment of electron
d) angular momentum of electron

78. Alkali metals in each period have

a) smallest size
b) lowest ionization energy
c) highest electron affinity
d) highest electronegativity

79. The bond angle around the atom, which uses sp^2 hybridization is

a) 10^{o}
b) 180^{o}
c) $109^{o}28'$
d) 120^{o}

80. The oxidation state of carbon in glucose is

a) 4
b) 2
c) 6
d) 0

81. If the molecular mass of $KMnO_4$ is M, then its equivalent mass in acidic medium, will be

a) M
b) M/2
c) M/4
d) M/5

82. A gas deviates from ideal gas behaviour, because its molecules

a) are colourless
b) contain covalent bond
c) show Brownian movement
d) attract each other

83. An atom present at the corner of a cube in a crystal lattice is shared by

a) 8 cubes
b) 6 cubes
c) 2 cubes
d) 12 cubes

84. In the combustion of 4 g of CH_4, 2.5 KCal of heat is liberated. Then the heat of combustion of CH_4 is

a) 0.1 KCal mol^{-1}
b) 10 KCal mol^{-1}
c) 1.0 KCal mol^{-1}
d) 100 KCal mol^{-1}

85. The active mass of 64 g of HI in a two litre flask would be

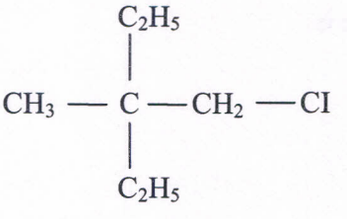
a) 2
b) 1
c) 5
d) 0.25

86. Drugs which are used to reduce anxiety and bring calmness are

a) diuretics
b) analgesics
c) antacids
d) tranquilizers

87. The empirical formula of glucose is

a) $C_6H_{12}O_6$
b) CHO
c) CHO_2
d) CH_2O

88. The IUPAC name of  is

a) 1-chloro 2-ethyl 2-methylbutane
b) 2-chloro 2,2-diethylpropane
c) 2,2-diethyl 1-chloropropane
d) 2-chloro 2-methylpentane

89. The product obtained by the addition of HBr to propene in the presence of peroxide catalyst is

a) 1-bromopropane
b) 2-bromopropane
c) 2- bromopropene
d) 1- bromopropene

90. Lindler catalyst is

a) Pd supported over $BaCO_3$
b) Hg supported over $PbSO_4$
c) Ni supported over $CuSO_4$
d) Ni supported over $CdSO_4$

91. When salicylic acid is heated with zinc dust the product formed is

a) zinc salicylate
b) salicylaldehyde
c) phenol
d) benzoic acid

92. The functional isomer of acetone is

a) propionaldehyde
b) propyl alcohol
c) ethyl methyl ether
d) dimethyl ether

93. Which of the following is a condensation polymer?

a) Polystyrene
b) Teflon
c) Dacron
d) PVC

94. The major product obtained when acetylene reacts with HBr is

a) ethyl bromide
b) ethylidene bromide
c) methyl bromide
d) 1, 2-dibromo ethane

95. Number of optically active isomers possible for open chain structure of D (+) glucose molecule is

a) 3
b) 16
c) 9
d) 8

96. Gem dihalides on hydrolysis gives

a) aldehydes only
b) ketones only
c) aldehydes or ketones
d) acids

97. Which of the following is most acidic?

a) p-Cresol
b) Phenol
c) p-Nitrophenol
d) Resorcinol

98. Dimethyl ketone is obtained by the dehydrogenation of

a) n-propyl alcohol
b) isopropyl alcohol
c) n-butyl alcohol
d) isobutyl alcohol

99. Cannizzaro's reaction is not given by

a) trichloroacetaldehyde
b) acetaldehyde
c) benzaldehyde
d) formaldehyde

100. Acetaldehyde and formaldehyde differ in their reaction with

a) ammonia
b) sodium bisulphite
c) phenyl hydrazine
d) tollen's reagent

101. Maximum number of molecules of methyl iodide that can react with a molecule of methyl amine are

a) 1
b) 3
c) 2
d) 4

102. The molecular formula of a trisaccharide containing 3 hexose units is

a) $C_{18}H_{36}O_{18}$
b) $C_{18}H_{34}O_{17}$
c) $C_{18}H_{32}O_{16}$
d) $C_{18}H_{30}O_{15}$

103. Which of the following acid is highly unsaturated?

a) Palmitic acid
b) Oleic acid
c) Linoleic acid
d) Linolenic acid

104. Casein is a protein present in

a) blood
b) muscles
c) milk
d) wheat

105. If H_2S is passed through a certain metallic salt solution in basic medium

a) H_2S ionizes to a small extent
b) S^{2-} concentration increases
c) pH of the solution becomes less than 7
d) there is no effect

106. The order of reactivity of alcohols with sodium metal is

a) $3^o > 2^o > 1^o$
b) $1^o > 2^o > 3^o$
c) $2^o > 3^o > 1^o$
d) $3^o < 1^o < 2^o$

107. Which of the following has lowest percentage of carbon?

a) Steel
b) Cast iron
c) Wrought iron
d) All have the same percentage

108. In blast furnace, iron oxide is reduced by

a) hot blast air
b) carbon monoxide
c) carbon
d) silica

109. In the manufacture of NH_3 by Haber's process, which of the following conditions is unfavourable?

a) Increasing the temperature
b) Increasing the pressure
c) Reducing the temperature
d) Removing NH_3 as it is formed

110. Ammonia is a starting material for the manufacture of

a) sulphuric acid
b) nitric acid
c) hydrochloric acid
d) nitrous acid

111. Which among the following noble gases is not found in air?

a) Ne
b) Rn
c) Ar
d) Kr

112. The spin magnetic moment of cobalt in the compound $Hg[Co(SCN)_4]$ is

a) $\sqrt{3}$
b) $\sqrt{8}$
c) $\sqrt{15}$
d) $\sqrt{24}$

113. The number of ions formed when $K_3[Fe(CN)_6]$ is dissolved in water are

a) 4
b) 3
c) 2
d) 10

114. The oxidation state of Cr in $[Cr(NH_3)_4Cl_2]^+$ is

a) +3
b) +2
c) +1
d) 0

115. The shape of cuprammonium ion is

a) trigonal
b) octahedral
c) square planar
d) tetrahedral

116. The bond order of O_2^+ is

a) 1
b) 1.5
c) 2.5
d) 3

117. Carbon atoms of benzene are

a) sp hybridised
b) sp^3 hybridised
c) not hybridised
d) sp^2 hybridised

118. A reaction involving two different reactants can never be

a) a unimolecular reaction
b) a first order reaction
c) a second order reaction
d) a bimolecular reaction

119. The half life of the first order reaction having rate constant $k = 1.7\ 10^{-5} S^{-1}$ is

a) 12.1 hr
b) 9.7 hr
c) 11.3 hr
d) 1.8 hr

120. The velocity of a chemical reaction doubles for every 10°C rise in temperature. If the temperature is raised by 50°C, the velocity of the reaction increases by about

a) 10 times
b) 20 times
c) 30 times
d) 50 times

Please Turn Over For Biology

Biology

121. Biological activity of IAA is tested by

a) Amylase test
b) *Avena* curvature test
c) *Xanthium* leaf disc test
d) Soya bean callus test

122. How many types of gamets are expected when both male and female have sAa Bb Cc genotype?

a) 2
b) 4
c) 8
d) 9

123. Amylase is secreted by _____.

a) salivary glands
b) gastric glands of stomach
c) liver
d) crypts of leiberkuhun

124. What is the driving force of diffusion of oxygen into the alveolar blood of the lungs?

a) High partial pressure of oxygen in the inspired air than in the blood
b) Low partial pressure of oxygen in the inspired air than in the blood
c) High atmospheric pressure in alveolar air than in the outer atmosphere
d) Low CO_2 content in blood than air in the lung

125. Diabetes insipidus is caused due to:

a) Hyposecretion of ADH
b) Hypersecretion of ADH
c) Hyposecretion of insulin
d) Hypersecretion of insulin

126. Ovarian hormones are usually

a) Proteinaceous
b) Steroids
c) Amines
d) Modified amino acids

127. The common phase between aerobic and anaerobic respiration is called

a) Tricarboxylic acid cycle
b) Oxidative phosphorylation
c) Embden – Meyerhoff – Parnas path way
d) Kreb's cycle

128. Tikka disease of groundnut is caused by:

a) *Agrobacterium tumefaciens*
b) *Cercospora arachidicola*
c) *Pentolonia species*
d) *Arachis species*

129. The members of phylum aschelminthes are _____.

a) eucoelomate
b) haemocoelomate
c) pseudocoelomate
d) acoelomate

130. Industrial melanism was observed in the insect _____.

a) *Musca domestica*
b) *Biston betularia*
c) *Bombyx mori*
d) *Apis florea*

131. Which one of the following delays senescence?

a) Cytokinin
b) Gibberellin
c) IAA
d) ABA (Abscissic acid)

132. A type of aneuploidy in which the chromosome set shows 2n-2 condition is called _____.

a) monosomy
b) nullisomy
c) trisomy
d) tetrasomy

133. Wooden pieces inserted in a rock causes breakdown during rainy season due to:

a) Imbibitional pressure
b) Osmotic pressure
c) Diffusion pressure
d) Wall pressure

134. Vincristin and Vimblastin are anticancer drugs and are obtained from _____.

a) *Cantharanthus reseus*
b) *Rauwolfia serpentina*
c) *Atropa belladonna*
d) *Gymnema sylvestre*

135. The inorganic component of haemoglobin is _____.

a) magnesium
b) iron
c) copper
d) calcium

136. The sticky ends of fragmented DNA is made up of _____.

a) calcium salts
b) unpaired bases
c) methyl group
d) endonucleases

137. PBR 322 and PUC 18 are original and modified plasmids of

a) *Agrobacterium tumefaciens*
b) *Rhizobium*
c) *Salmonella*
d) *Escherichia coli*

138. In Mendel's pea plant which one of the following is a dominant trait ?

a) Axial flower position
b) Yellow pod colour
c) Wrinkled seed shape
d) Constricted pod

139. The youngest layer of secondary xylem in a five year old dicotyledonous stem lies _____.

a) just outside the cambium
b) just inside the cambium
c) just adjacent to pith
d) just adjacent to cortex

140. Ozone hole is caused by _____.

a) CFC
b) CO_2
c) Methane
d) Acid rain

141. The system of classification proposed by Engler and Prantl is considered to be _____.

a) very artificial
b) natural
c) phylogenetic
d) arbitrary

142. Which class of biomolecules contain carbon, hydrogen and oxygen in the ratio 1:2:1?

a) Carbohydrates
b) Proteins
c) Lipids
d) Fatty acids

143. The operator gene in Lac-operon is switched on when lactose molecule binds to

a) m-RNA
b) Repressor protein
c) Promoter site
d) Regulator gene

144. Which one of the following is not a foetal membrane?

a) Amnion
b) Allantois
c) Chorion
d) Jelly coat

145. Crossing over of chromosomes during meiosis leads to _____.

a) Mutation
b) Sex determination
c) Exchange of genetic material
d) Gene drift

146. A class of protozoa in which the members lack contractile vacuole is _____.

a) Sporoza
b) Ciliophora
c) Mastigophora
d) Rhizopoda

147. Which one of the following is affected by root pressure?

a) Passive absorption
b) Active absorption
c) Increase in transpiration
d) Increase in photosynthesis

148. Which are the end products of fermentation in plants?

a) Alcohol
b) Alcohol and CO_2
c) Alcohol and acetyl Co-A
d) CO_2

149. A condition of presence of excess of glucose in urine is called _____.

a) uremia
b) hyperglycemia
c) glycosuria
d) polyuria

150. Choose the non specific defense method from the following.

a) Antibody formation
b) Phagocytosis
c) Vaccination
d) Immunoglobulin formation

151. Which one among the following has no role in genetic variation in the population of bacteria?

a) Meiosis
b) Transformation
c) Mutation
d) Transduction

152. The skin of reptile is _____.

a) dry and without scales
b) glandular and scaly
c) dry and scaly
d) dry and very thin

153. When a cell is kept in 0.5 M solution of sucrose its volume does not alter. If the same is placed in 0.5 M solution of sodium chloride the volume of the cell will _____.

a) increase
b) decreases
c) deplasmolyses
d) not show any change

154. Which of the following products of light reaction are essential and used in the reduction of CO_2 to carbohydrate during dark reaction?

a) O_2, ATP
b) $NADH_2$ and ATP
c) CO_2, NAD and ADP
d) $NADPH_2$ and ATP

155. Restriction endonuclease is synthesized by _____.

a) only bacteria
b) yeast and bacteria
c) all types of cells
d) only eukaryotic cells

156. The ovule of Angiosperms might have been evolved from _____.

a) Integumented megasporangium
b) Mega gametangium
c) Pollen sac
d) Microsporangium

157. The growth hormone is secreted by _____.

a) Hypothalamus
b) Anterior pituitary gland
c) Posterior pituitary gland
d) Pars intermedia

158. Which one of the following represents central nervous system

a) Brain
b) Parasympathetic nerves
c) Sympathetic nerves
d) Autonomous nervous system

159. Which one of the following is an endangered species

a) Lion tailed macacqa
b) Squirrel
c) Bulbul
d) Cobra

160. The variation at the level of individual genes of an organism is referred to as _____.

a) genetic diversity
b) species diversity
c) habitat diversity
d) ecosystem diversity

161. Vermicompost is the product of _____.

a) Round worms
b) Hook worms
c) Flat worms
d) Earth worms

162. In the binomial nomenclature the scientific name consists of two words. These indicate:

a) Species and tribe
b) Genus and family
c) Genus and species
d) Family and genus

163. Which one of the following is a fin fish?

a) Oyster
b) Prawn
c) Carp
d) Crab

164. Oxytocin helps in

a) Parturition
b) Semen formation
c) Diuresis
d) Ovulation

165. Amber, opal and ochre are _____.

a) initiation codons
b) elongation codons
c) addition codons
d) terminator codons

166. Intrauterine device prevents conception by _____.

a) Preventing fertilization
b) Not allowing the process of oogenesis
c) Preventing implantation
d) Preventing ovulation

167. Bacteriophage is a name given to a _____.

a) Bacterium that infects cell of higher plants
b) Bacterium which infects an animal cell
c) Virus that infects bacterium
d) An organelle of bacterium

168. The specific name of the vegetable, onion is _____.

a) *Allium*
b) *Cepa*
c) *Allium sativum*
d) *Allium cepa*

169. Sexual dimorphism is seen in

a) Round worm
b) Liver fluke
c) Tape worm
d) Hydra

170. Eri silk is secreted by the caterpillar of :

a) *Antheraea mylitta*
b) *Attactus ricini*
c) *Bombyx mori*
d) *Antheraea pernyi*

171. Antibodies are formed by _____.

a) RBC
b) Lymphocytes
c) Bone marrow
d) Liver

172. Gonads are formed by the _____.

a) ectoderm
b) mesoderm
c) endoderm
d) mesenchyme

173. Chromosomes start moving towards the poles in _____ phase of mitosis.

a) anaphase
b) metaphase
c) prophase
d) telophase

174. Spathaceous bracts, trimerous flowers, tricarpellary gynoecium and inferior ovary are salient features of which family?

a) Malvaceae
b) Apocyanaceae
c) Leguminosae
d) Musaceae

175. A mouth part of cockroach which helps in biting and chewing of food is _____.

a) Maxilla
b) Labrum
c) Labium
d) Mandible

176. Which one of the following is a cross breed of poultry?

a) Aseel
b) Basra
c) Cornish
d) Giriraja

177. Which one of the following is an anthropocentric cause of biodiversity depletion?

a) Urbanization
b) Floods
c) Landslides
d) Earthquake

178. What happens during southern blotting technique of DNA?

a) Fragments of DNA are separated
b) DNA fragments are transferred to nitrocellulose sheet
c) REN cuts DNA into fragments
d) Nylon membrane containing radioactive DNA probes are exposed to x-ray films

179. Which one of the following is a major constituent of cell walls of cork cells?

a) Lignin
b) Suberin
c) Pectin
d) Cellulose impregnated with calcium and magnesium salts

180. The process of osmosis involves

a) movement of solute particles through a selectively permeable membrane
b) movement of solvent particles through a selectively permeable membrane
c) movement of solute particles towards a solution through a selectively permeable membrane
d) movement of solute particles towards a solvent particles through a selectively permeable membrane