AMITY INSTITUTE

FOR COMPETITIVE EXAMINATIONS

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MOCK TEST - MEDICAL

TEST PATTERN : AIIMS

[Time : 3½ Hours] *[Max Marks : 200]*

OBJECTIVE TEST

INSTRUCTIONS

(i) *The student should ensure that he/she occupies the correct seat only. If any student is found to have occupied the seat of another student, both the students shall be removed from the examination and shall have to accept any other penalty imposed upon them.*
(ii) *Student can not use log tables and calculators or any other material in the examination hall.*
(iii) *Student must abide by the instructions issued during the examination, by the invigilators or the centre incharge.*
(iv) *Before attempting the question paper ensure that it contains all the pages and that no question is missing.*
(v) *Each correct answer carries 1 marks, while one third mark will be deducted from the total of individual subject for each incorrect answer*
(vi) *Use Blue/Black Ball Point Pen only for writing particulars/markings.*
(vii) *No additional sheets will be provided for rough work.*
(viii) *Use of white fluid or any other material which damages the answer sheet, is not permitted.*

TOPICS

PHYSICS	**:**	Complete XI and XII
CHEMISTRY	**:**	Complete XI and XII
BIOLOGY	**:**	Complete XI and XII
GENERAL KNOWLEDGE	**:**	

Useful Data

Gas Constant	**R**	=	8.314 J K^{-1} mol^{-1}	**1 Faraday**	=	96500 Coulomb
		=	0.0821 Lit atm K^{-1} mol^{-1}	**1 calorie**	=	4.2 Joule
		=	1.987 $\approx$ 2 Cal K^{-1} mol^{-1}	**1 amu**	=	1.66×10^{-27} kg
Avogadro's Number	N_a	=	6.023×10^{23}	**1 Ev**	=	1.6×10^{-1} J
Planck's constant	**h**	=	6.625×10^{-34} J . s			
		=	6.625×10^{-27} erg . s			

Atomic No: H = 1, D = 1, Li = 3, Na = 11, K = 19, Rb = 37, Cs = 55, F = 9, Ca = 20, He = 2, O = 8, Au = 79, Ni = 28, Zn = 30, Cu = 29, Cl = 17, Br = 35, Cr = 24, Mn = 25, Fe = 26, S = 16, P = 15, C = 6, N = 7, Ag = 47.

Atomic Masses: He = 4, Mg = 24, C = 12, O = 16, N = 14, P = 31, Br = 80, Cu = 63.5, Fe = 56, Mn = 55, Pb = 207, Au = 197, Ag = 108, F = 19, H = 1, Cl = 35.5, Sn = 118.6, Na = 23, D = 2, Cr = 52, K = 39, Ca = 40, Li = 7, Be = 4, Al = 27, S = 32.

PHYSICS

1. P-V diagram of a monoatomic gas is a stright line passing through origin. The molar heat capacity of the gas in the process will be
   (1) 3R/2 (2) R/2
   (3) 2R (4) 3R
2. The ratio of a average translational K.E. to rotational K.E. of a linear polyatomic molecule at temperature T is
   (1) 3 (2) 5
   (3) 3/2 (4) 7/5
3. The pressure of an ideal diatomic gas can be represented as $P = \frac{2E}{3V}$, here V is volume and E is
   (1) Rotational kinetic energy
   (2) Translational kinetic energy
   (3) Vibrational kinetic energy
   (4) Total kinetic energy
4. At constant pressure modulus of elasticity is
   (1) P (2) γP
   (3) Zero (4) 1/T
5. Relation between U, P and V for ideal gas is U = 2 + 2PV then gas is
   (1) Monoatomic
   (2) Diatomic
   (3) Polyatomic
   (4) Mixture of mono and diatomic
6. One mole of an ideal gas (monoatomic) at temperature T_0 expands slowly according to law $P^2 = cT$ (c is constant). If final temperature is $2T_0$, heat supplied to gas is
   (1) $2RT_0$ (2) $\frac{3}{2}RT_0$
   (3) RT_0 (4) $\frac{RT_0}{2}$
7. Find equation of polytropic process for which heat capacity is $C = \frac{7}{2}R$ for a monoatomic gas
   (1) PV = constant (2) PV^2 = constant
   (3) P^2V = constant (4) None of these
8. Two Carnot engines 1 and 2 connected in series deliver equal work. If 1 receives energy at 900 K and B rejects energy at 400 K. The temperature for rejection in 1 is
   (1) 650 K (2) 700 K
   (3) 800 K (4) 500 K
9. Two concentric spherical shells of radii a and 1.2 a have chargers + Q and –2 Q respectively. At what distance from centres potential will be same as that of centre ?
   (1) 2a (2) 1.5a
   (3) 2.5a (4) 3a

Space for rough work

10. Two pith balls having charge 3q and 2q are placed at distance of 'a' from each other. For what value of charge transferred from 1st ball to 2nd ball, force between balls becomes maximum ?

(1) q/2 (2) 5q/2

(3) 7q (4) q

11. Three charges each of value Q are placed at point A (–K, 0), O(0, 0) and B(0, K). If force on point charge at A is $a\hat{i}+b\hat{j}$ then force on point charge at B is

(1) $-a\hat{i}-b\hat{j}$ (2) $b\hat{i}+a\hat{j}$

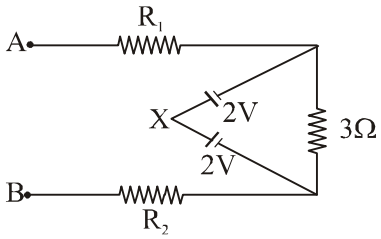
(3) $-b\hat{i}-a\hat{j}$ (4) $-a\hat{j}+b\hat{i}$

12. A circuit has a sectin AB as shown in the figure. If the potential difference between two points AB is 10 V (A at higher potential) then potential difference across 2μF capacitor is

(1) 9V (2) 7 V

(3) 12 V (4) None of these

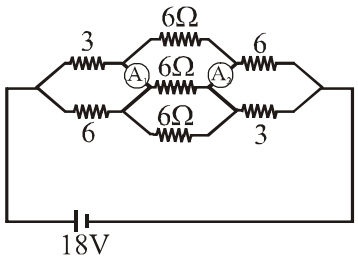
13. If equivalent resistance between points A and X is 5 Ω and equvalent resistance between A and B is 10 Ω then R_2 is



(1) 2 Ω (2) 5 Ω

(3) 3 Ω (4) 10 Ω

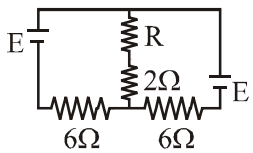
14. Find reading of ammeters A_1 and A_2 for the circuit shown



(1) 1A, 1A (2) 1A, Zero

(3) Zero, 1A (4) Zero, zero

15. In the circuit shown in figure the emf of each battery is E. At what value of R thermal power generated in it will be minimum ?

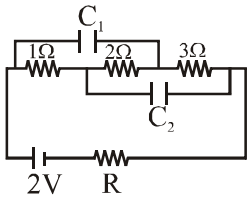


(1) $\frac{6}{5}\Omega$ (2) $\frac{5}{6}\Omega$

(3) 5Ω (4) 14Ω

Space for rough work

16. In the shown network charges in capacitors are same then C_1/C_2 is



(1) 5/3 (2) 1 : 1
(3) 1 : 3 (4) 1 : 5

17. A particle of mass m and charge q is thrown from origin at t = 0 with velocity $2\hat{i}+3\hat{j}+4\hat{k}$ units in a region with uniform magnetic field $2\hat{i}$ units. After time $t=\frac{\pi m}{qB}$, an electirc field $\vec{E}$ is switched on, such that particle moves on a straight line with constant speed $\vec{E}$ may be

(1) $5\hat{i}-10\hat{j}$ units (2) $-6\hat{i}-9\hat{k}$ units
(3) $-6\hat{i}+8\hat{j}$ units (4) $6\hat{i}+8\hat{k}$ units

18. Force on a particle (of charge q and mass m) is $qvB\left(-\frac{1}{2}\hat{j}+\frac{\sqrt{3}}{2}\hat{k}\right)$ when projected along x-axis with speed v. (B here denotes magnitude of magnetic field in the region). Unit vector in the direction of $\vec{B}$ is

(1) $\frac{\sqrt{3}}{2}\hat{i}+\hat{k}$ (2) $\frac{\sqrt{3}}{2}\hat{j}+\frac{\hat{k}}{2}$
(3) $-\frac{\sqrt{3}}{2}\hat{i}+\hat{k}$ (4) $-\sqrt{3}\,\hat{j}+\frac{\hat{k}}{2}$

19. The limiting angle of incidence of a ray that can be transmitted by an equilateral prism of refractive index $n=\sqrt{\frac{7}{3}}$ is

(1) $\frac{\pi}{6}$ (2) $\frac{\pi}{3}$
(3) $\frac{\pi}{4}$ (4) $\frac{\pi}{5}$

20. An object is placed in front of an equiconvex lens with refractive index 1.5 and radius of curvature 30 cm. Surface which is away from object is polished. Find the distance of object from lens so that object and image coincide

(1) 10 cm (2) 20 cm
(3) 15 cm (4) 40 cm

21. A plane mirror is moving with $-2\hat{i}+3\hat{j}+\hat{k}$ m/s in x-z plane. Velocity of image of a point object moving with velocity $\hat{i}+2\hat{j}-5\hat{k}$ m/s is (assume that obejct is located on fron side of the mirror)

(1) $-2\hat{i}+4\hat{j}-\hat{k}$ m/s
(2) $\hat{i}+4\hat{j}-5\hat{k}$ m/s

Space for rough work

(3) $2\hat{i}-3\hat{j}+\hat{k}$ m/s

(4) $-\hat{i}+5\hat{j}-4\hat{k}$ m/s

22. In a Young's double slit experiment intensities of sources are 4*I* and 9*I*. What is the ratio of maximum and minimum intensities ?

(1) 25 : 1 (2) 5 : 1

(3) 2 : 3 (4) 4 : 9

23. In a YDSE apparatus, d = 2 mm, l = 600 nm, D = 1 m. The slits individually produce same intensity on the screen. Find the position of point where intensity is 3/4 times of the maximum intensity on screen

(1) 0.01 mm (2) 13×10^{-4} mm

(3) 0.05 mm (4) 1.5×10^{-4} mm

24. For Uranium nucleus how does it mass vary with volume ?

(1) $m \propto V$ (2) $m \propto \frac{1}{V}$

(3) $m \propto \frac{2}{V^2}$ (4) $m \propto V^2$

25. Work function of Al is 4.2 eV. If two photons each of energy 3.5 eV strike an electron of alluminium, then emission of electron

(1) Will be possible

(2) Depends on smoothness of surface

(3) Will not be possible

(4) None of these

26. In Bohr's model of hydrogen atom let R, V and E represent radius of orbit, speed of electron and total energy of electron respectively. Which of the following quantities is proportional to quantum number n ?

(1) VR/E (2) RE

(3) V/E (4) R/E

27. A neutrino is

(1) Has no charge and has no spin

(2) Has no charge but has spin

(3) Charged like an electron but has spin

(4) Uncharged but has mass nearly that of proton

28. A sample of radioactive material has mass m, decay constant λ and molar mass M. Avogadro constant is N_A. The initial activity of sample is

(1) λM (2) $\lambda m/M$

(3) $\lambda m N_A/M$ (4) $mN_A e^{-\lambda t}$

29. What is probability that a nucleus decays in time ? (Given that decay constant is λ)

(1) $e^{-\lambda t}$ (2) $1-e^{-\lambda t}$

(3) $e^{\lambda t}$ (4) $1-e^{\lambda t}$

30. A moving hydrogen atom absorbs a photon of wavelength 122 nm and comes to rest. Then speed of moving hydrogen was

(1) 3.25 m/s (2) 6.5 m/s

(3) 1.75 m/s (4) None of these

Space for rough work

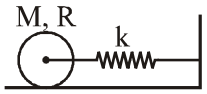
31. A wave represented by y = 2cos(4x – πt) is superposed with another wave to form a stationary wave such that the point x = 0 is a node. The equation of other wave is
(1) 2sin(4x + πt) (2) –2cos(4x – πt)
(3) –2cos(4x + πt) (4) –2sin(4x – πt)

32. There are two pipes each of length 2 m, one is closed at one end and other is open at both ends. The speed of sound in air is 340 m/s. The frequency at which both can resonate is
(1) 340 Hz (2) 510 Hz
(3) 42.5 Hz (4) None of thee

33. Equation of a longitudial wave is given as $y = 10^{-2}\sin 2\pi\left(1000t + \frac{50x}{17}\right)$ (all SI units). At t = 0, change in pressure is maximum at x =
(1) 0.34 (2) 0.255
(3) 0.085 (4) All of these

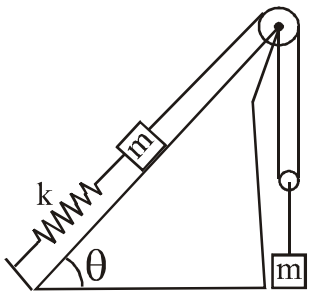
34. Two tuning forks A and B when sounded together produce 4 beats/s. When B is loaded with wax, the beat frequency remains same. If frequency of A is 212 Hz then frequency of B before loading is
(1) 208 Hz (2) 212 Hz
(3) 216 Hz (4) Irrelevant

35. A solid cylinder attached to horizontal massless spring can roll without slipping along horizontal surface. Find time period of oscillation



(1) $2\pi\sqrt{\frac{M}{2k}}$ (2) $\pi\sqrt{\frac{3M}{2k}}$
(3) $\pi\sqrt{\frac{2M}{3k}}$ (4) $2\pi\sqrt{\frac{3M}{2k}}$

36. Calculate natural frequency ω of the system shown in figure



(1) $\sqrt{\frac{5k}{4m}}$ (2) $\sqrt{\frac{2k}{3m}}$
(3) $\sqrt{\frac{4k}{5m}}$ (4) None of these

37. Force acting on a block is F = –2x + 4 (F in newton and x is metres)
(1) Moiton of block is periodic but not SHM
(2) Motion of block is not periodic
(3) Motion of block is SHM about origin
(4) Motion of block is SHM about x = 2 m

Space for rough work

38. A block of mass 1 kg is floating in a container filled with water with 2 cm submerged. When a stone is placed on block, 2.4 cm block gets submerged, the mass of stone is

(1) 100 g (2) 200 g

(3) 1 kg (4) 400 g

39. The escape velocity of a particle of mass m

(1) Varies as m^2

(2) Varies as m

(3) Variers as m^{-1}

(4) Is independent of its mass

40. A long pliable carpet is laid on ground. One end of the carpet is bent back and pulled backwards eith constant velocity 16 m/s. If mass/length of carpet is 1 kg/m, the minimum force needed to pull the moving part is

(1) 4 N (2) 8 N

(3) 16 N (4) 128 N

ASSERTION/REASON (Q.41 – Q.60)

These questions consists of two statements each, printed as Assertion and Reason. While answering these questions you are required to choose any one of the following four responses.

(1) If both assertion and reason are true and reason is the correct explanation of assertion.

(2) If both the assertion and reason are true but reason is not the correct explanation of assertion.

(3) If the assertion is true but the reason is false.

(4) If both the assertion and reason are false.

41. *A.* Pressure is a scalar quantity.
R. Though it has magnitude as well as direction, but it does not obey the law of addition of vectors.

42. *A.* The aeroplane, moving fast on the runway, is lifted up.
R. The buoyant force provided by air lifts the aeroplane.

43. *A.* The weight of a body, placed in a satellite circling around the earth, is zero.
R. Inside the satellite, value of *g* is negligible.

44. *A.* In a cricket match, spinning ball is very dangerous because the direction of its velocity keeps on changing.
R. Only a few players have the technique of throwing a spinning ball.

45. *A.* Other factors remaining same, if diameter of a pipe is doubled, the volume of water flowing per unit time through it will increase to sixteen times.
R. This is in accordance with Poiseuille's relation.

46. *A.* If the polar ice caps melt and spread uniformly, then the duration of the day will decrease.
R. Due to melting of ice and spreading of water uniformly, the moment of inertia of the earth will decrease.

Space for rough work

47. *A.* When a solid sphere of a larger radius and another solid sphere of smaller radius, both of same material, are just released from same position of the same inclined plane, both reach the bottom of the inclined plane at the same time.

R. Moment of inertia of larger sphere is larger than that of smaller one.

48. *A.* Strain causes stress, but not vice-versa

R. The force of reaction per unit area is called stress.

49. *A.* A boat floats in a swimming pool. Water from a well is pumped into the pool to raise the level of water by a half metre. The work done in pumping water into the pool will be same, whether the boat is large or as small as a toy-boat.

R. Volume of water pumped into the pool will be same.

50. *A.* When two liquids of density ratio 1 : 2 are mixed by taking equal masses, the density of the mixture is more than when these are mixed by taking equal volumes.

R. Total volume in the first case will smaller as compared to the mass.

51. *A.* When a man is standing near a railway track, a fast-moving train may attract the man.

R. Large mass of the train produces large gravitational force on the man, attracting him towards it.

52. *A.* For a system of particles under central force field, the total angular momentum is conserved.

R. The torque acting on such a system is zero.

53. *A.* For Reynold number $N_R > 2000$, the flow of fluid is turbulent.

R. Inertial forces are dominant compared to the viscous forces at such high Reynold numbers.

54. *A.* At any point along the axial line of a wire, carrying current, the magnetic field is zero.

R. A line has no thickness and so encloses no current.

55. *A.* Two wires carrying currents in the same direction, when brought near and parallel to each other, are found to attract each other.

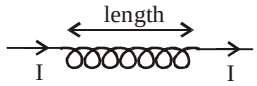
R. The force of attraction is due to electric field produces by the electrons moving in the wires.

56. *A.* When a moving charge enters a magnetic field, a force acts on it. This force does the work in changing the direction of moving charge in the magnetic field.

R. Work must be done on the charge to change the direction of its motion.

Space for rough work

57. *A.* When current flows in the coil, shown below, then the length of the coil is found to be decreased.



R. Heat produced in the wire of the coil increases the cross-section of the coil, thereby reducing its length.

58. *A.* High speed protons, present in the cosmic rays, cannot fall on the equator of the earth.

R. Direction of magnetic field of the earth at the equator is perpendicular to the direction of motion of falling vertically downward towards the equator.

59. *A.* In *LCR* series circuit, the phase difference between potentials across the inductor and capacitor is π.

R. The phase difference of currents through inductor and capacitor is zero in *LCR* series circuit.

60. *A.* Power loss in electrical *LCR* circuit is maximum when the circuit is resonant in nature.

R. In this case, applied voltage and current are in phase with each other.

CHEMISTRY

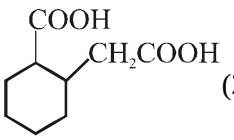
61. Which one of the following has the smallest heat of hydrogenation per mole ?
(1) 1-butene (2) trans 2-butene
(3) cis-2-butene (4) 1, 3 butadiene

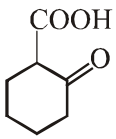
62. What is the decreasing order of strength of the bases OH^-, NH_2^-, $HC \equiv C^-$ and $CH_3CH_2^-$?
(1) $CH_3 - CH_2^- > NH_2^- > HC \equiv C^- > OH^-$
(2) $HC \equiv C^- > CH_3CH_2^- > NH_2^- > OH^-$
(3) $OH^- > NH_2^- > HC \equiv C^- > CH_3CH_2^-$
(4) $NH_2^- > HC \equiv C^- > OH^- > CH_3CH_2^-$

63. A positron is emitted from $^{23}_{11}Na$. The ratio of atomic mass and atomic number of resulting nuclide is
(1) 22/10 (2) 22/11
(3) 23/10 (4) 23/12

64. The colour of light absorbed by an aqueous solution of $CuSO_4$ is
(1) Orange-red (2) Blue-green
(3) Yellow (4) Violet

65. A metal nitrate reacts with KI to give a black precipitate which on addition of excess of KI is converted into orange colour solution. The cation of metal nitrate is
(1) Hg^{2+} (2) Bi^{3+}
(3) Pb^{2+} (4) Cu^{+}

66. The compound that undergoes decarboxylation most readily under mild condition is
(1) 

(2) 

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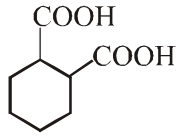
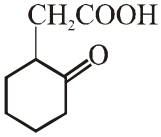
(3)  (4) 

67. Which of the following salts on heating gives a mixture of two gases ?
(1) $Be(NO_3)_2$ (2) $NaNO_3$
(3) KNO_3 (4) $RbNO_3$

68. Drying agent which reacts with CO_2 and removes water vapours from ammonia is
(1) CaO (2) $CaCl_2$
(3) $CaCO_3$ (4) $Ca(NO_3)_2$

69. An inorganic substance liberates oxygen on heating and turns an acidic solution of KI brown and reduces acidified $KMnO_4$ sol. The substance is
(1) HgO (2) H_2O_2
(3) $CaCO_3$ (4) $Ca(NO_3)_2$

70. The number of structural and configuration isomers of a bromocompound C_5H_9Br formed by addition of HBr to 2-pentyne respectively are
(1) 1 and 2 (2) 2 and 4
(3) 4 and 2 (4) 2 and 1

71. Isobutyl magnesium bromide with dry ether and ethyl alcohol gives

(1) $CH_3-\underset{\displaystyle CH_3}{\underset{|}{CH}}-CH_2OH$ and CH_3CH_2MgBr

(2) $CH_3-\underset{\displaystyle CH_3}{\underset{|}{CH}}-CH_3$ and $MgBr(OC_2H_5)$

(3) $CH_3-\underset{\displaystyle CH_3}{\underset{|}{CH}}$, $CH_2=CH_2$ and Mg(OH)Br

(4) $CH_3-\underset{\displaystyle CH_3}{\underset{|}{CH}}-CH_3$ and CH_3CH_2OMgBr

72. Considering the elements B, Al, Mg and K, the correct order of their metallic character is
(1) B > Al > Mg > K (2) Mg > Al > K > B
(3) Al > Mg > B > K (4) K > Mg > Al > B

73. In which of the following compounds, manganese shows maximum radius ?
(1) MnO_2 (2) $KMnO_4$
(3) MnO (4) $K_3[Mn(CN)_6]$

74. Amongest the following hydroxides, the one which has the lowest value of K_{sp} at ordinary temperature is
(1) $Mg(OH)_2$ (2) $Ca(OH)_2$
(3) $Ba(OH)_2$ (4) $Be(OH)_2$

75. The structural unit present in pyrosilicates is
(1) $Si_3O_9^{6-}$ (2) SiO_4^{4-}
(3) $Si_2O_7^{6-}$ (4) $(Si_2O_5^{2-})_n$

76. Tin reacts with concentrated HNO_3 and gives
(1) stannic nitrate (2) stannous nitrate
(3) metastannic acid (4) none of these

77. 0.59 g of silver salt of an organic acid (molar mass = 210) on ignition gave 0.36 g of pure silver. The basicity of the acid is
(1) 3 (2) 2
(3) 1 (4) 4

78. 2 g of aluminium is treated separately with excess of dilute H_2SO_4 and excess of NaOH. The ratio of the volumes of hydrogen evolved is
(1) 1 : 2 (2) 2 : 1
(3) 1 : 1 (4) 2 : 3

79. 1.615 g of anhydrous $ZnSO_4$ was placed in moist air. After few days its weight was found to be 2.875g. What is the molecular formula of hydrated salt ?

Space for rough work

(1) $ZnSO_4.H_2O$ (2) $ZnSO_4.3H_2O$
(3) $ZnSO_4.7H_2O$ (4) $ZnSO_4.10H_2O$

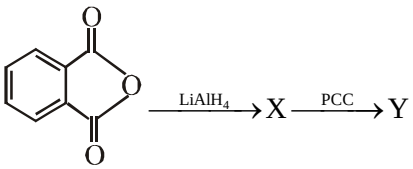
80. If nickel oxide has the formula $Ni_{0.98}O_{1.00}$, then what fraction of nickel exist as Ni^{3+} ?
(1) 96% (2) 4%
(3) 98% (4) 2%

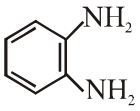
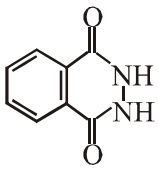
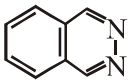
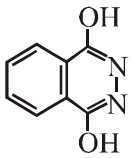
81. Energy of H-atom in the ground state is –13.6 eV, hence energy in the second excited state is
(1) –6.8 eV (2) –3.4 eV
(3) –1.51 eV (4) None of these

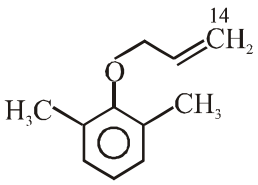
82. A person inhales 650 g oxygen per day. If all the oxygen is used for converting sugar into CO_2 and H_2O, how much heat is evolved in one day $\Delta H_{comburstion\ of\ surcose}$ = –5645 kJ/mol
(1) 9408 kJ (2) 570 kJ
(3) 5645 kJ (4) None of these

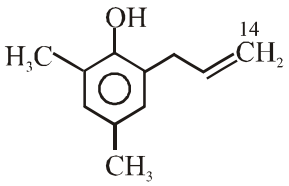
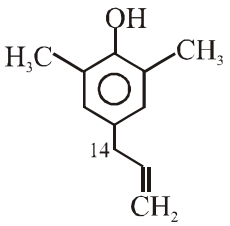
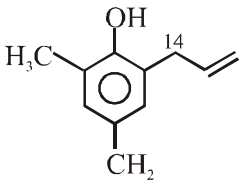
83. In a fuel cell, methanol is used as fuel and oxygen gas is used as an oxidiser
$CH_3OH(l) + (3/2)O_2(g) \rightarrow CO_2(g) + 2H_2O(l)$
Given $\Delta_f G°$ for $CH_3OH(l)$, $CO_2(g)$ and $H_2O(l)$ are –166.2, –394.4 and –237.2 kJ/mol respectively and $\Delta_C H°(CH_3OH)$ = –726 kJ/mol. The efficiency of fuel cell is
(1) 93% (2) 87.5%
(3) 46% (4) 97%

84. (+) –Glucose and (–) fructose can be differentiated by
(1) Tollen's reagent (2) Benedict solution
(3) Bromine water (4) None of these

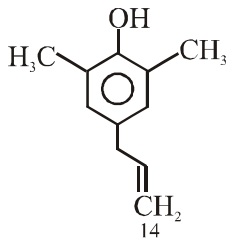
85. 
$\xrightarrow{LiAlH_4}$ X $\xrightarrow{PCC}$ Y
$\xrightarrow{H_2N\ NH_2}$ Z here Z is

(1) 
(2) 
(3) 
(4) 

86. 
$\xrightarrow{heat}$ P, P is

(1) 
(2) 
(3) 

Space for rough work

(4) 

87. 50 ml of 0.2 M solution of a compound with empirical formula $CoCl_3.4NH_3$ on treatment with excess of $AgNO_3$(aq) yields 1.435 g of AgCl. Ammonia is not removed by treatment with concentrated H_2SO_4. The formula of the compound is
    (1) $[Co(NH_3)_4]Cl_3$
    (2) $[Co(NH_3)_4Cl_2]Cl$
    (3) $[CoCl_3(NH_3)](NH_3)_3$
    (4) None of these

88. Freshly obtained SnO_2 is added to water containing a little HCl. The sol obtained would be ..... due to preferential adsorption of ..... ions
    (1) Positively charged, H^+
    (2) Positively charged, Sn^{4+}
    (3) Positively charged, Sn^{2+}
    (4) Negatively charged SnO_3^{2-}

89. In a compound oxide ions constitute cubic close packing. Cations A occupy 50% of tetrahedral holes while cations B occupy all octahedral voids. The empirical formula of the compound is
    (1) AB_2O_4 (2) ABO_2
    (3) A_2BO_4 (4) ABO

90. The number of H^+ ions in 1c.c. of a solution having pH = 13 is
    (1) 6.023×10^7 (2) 6.023×10^{10}
    (3) 10^{16} (4) None of these

91. A plot of lnK against 1/T is expected to be a straight line with intercept on ordinate axis equal to
    (1) $\frac{\Delta S^\circ}{2.303R}$ (2) $\frac{\Delta S^\circ}{R}$
    (3) $\frac{-\Delta S^\circ}{R}$ (4) $R \times \Delta S^\circ$

92. Increasing order of dipole moment is given by
    (1) $CF_4 < NH_3 < NF_3 < H_2O$
    (2) $CF_4 < NH_3 < H_2O < NF_3$
    (3) $CF_4 < NF_3 < H_2O < NH_3$
    (4) $CF_4 < NF_3 < NH_3 < H_2O$

93. Bithional is an example of
    (1) disinfectant (2) antiseptic
    (3) antibiotic (4) analgesic

94. Which of the following is not a homopolymer?
    (1) Bakelite (2) Polyethylene
    (3) Teflon (4) PVC

95. The equilibrium constant Kp_1 and Kp_2 of the reaction $X \rightleftharpoons 2Y$ and $Z \rightleftharpoons P + Q$ respectively are in the ratio of 1 : 9. If the degree of dissociation of X and Z be equal then the ratio of total pressures at these equilibria is
    (1) 1 : 9 (2) 1 : 36

Space for rough work

(3) 1 : 1 (4) 1 : 3

96. Vapour density of N_2O_4 at 60°C is found to be 30.6. The degree of dissociation of N_2O_4 is

(1) 10% (2) 20%

(3) 40% (4) 50%

97. Equation for Boyle's law is

(1) $\frac{dP}{P} = \frac{-dV}{V}$ (2) $\frac{dP}{P} = \frac{+dV}{V}$

(3) $\frac{d^2P}{P} = \frac{dV}{dT}$ (4) $\frac{d^2P}{P} = \frac{d^2V}{dT}$

98. The heat of combustion of carbon monoxide at constant pressure and at contant volume at 27°C will differ from one another by

(1) 27 cal (2) 54 cal

(3) 300 cal (4) 600 cal

99. The specific conductivity of a saturated solution of silver chloride is 2.3×10^{-6} S cm^{-1} at 25°C. What will be the solubility of silver chloride at 25°C if molar conductivity at infinite dilution for Ag^+ and Cl^- ions are 61.9 and 76.3 S cm^2 mol^{-1} respectively ?

(1) 1.66×10^{-5} M (2) 2.382×10^{-3} M

(3) 2.33×10^{-5} M (4) None of these

100. There are three samples of H_2O_2 labelled as 10 vol, 15 vol, 20 vol. Half litre of each sample are mixed and then diluted with equal volume of water. Calculate volume strength of resulting solution

(1) 1.339 (2) 2.68

(3) 5.0 (4) 7.5

ASSERTION/REASON (Q.101 – Q.120)

In each of the following questions, a statement of Assertion (A) is given followed by a corresponding statement of Reason (R) just below it. Of the statements, mark the correct answer as

(1) If both assertion and reason are true, and reason is the true explanation of the assertion.

(2) If both assertion and reason are true, but reason is not the true explanation of the assertion.

(3) If assertion is true, but reason is false.

(4) If both assertion and reason are false

101. ***A.*** Anhydrous $AlCl_3$ is more soluble in diethyl ether than hydrous $AlCl_3$

R. Anhydrous $AlCl_3$ is electron deficient - the oxygen atom of ether donates a pair of electrons to vacant p-orbital on the Al atom forming a covalent bond

102. ***A.*** $BaCO_3$ is more soluble in HNO_3 than in plain water

R. Carbonate is a weak base and reacts with the H^+ from the strong acid causing the barium salt to dissociate

103. ***A.*** Benzene is reactive while inorganic benzene is unreactive compound

Space for rough work

R. Inorganic benzene is borazine $B_3N_3C_6$

104. ***A.*** Lesser the critical temperature of a gas, more easily the gas is liquiefied

R. Critical temperature is the temperature below which a gas cannot be liquified how soever high the pressure may be applied

105. ***A.*** The addition of electron in antibonding MO decreases bond order

R. Antibonding electrons tend to bring the atoms close together

106. ***A.*** Zeise's salt is a π-bonded organometallic compound

R. The oxidation number of platinum in Zeise's salt is +2

107. ***A.*** Higher the value of molal depression constant of solvent (K_f) used to prepare the solution, lower will be the freezing point of solution

R. Depression in freezing point depends upon the nature of the solvent

108. ***A.*** The solubility of AgCl in water decreases if NaCl is added to it

R. NaCl is highly soluble in water where as AgCl is sparingly soluble

109. ***A.*** Wolframite ore containing cassiterite can be concentrated by electromagnetic separation

R. Cassiterite being non magnetic forms a separate heap

110. ***A.*** HNO_3 is stronger acid than HNO_2

R. In HNO_3 there are two nitrogen to oxygen bonds whereas in HNO_2 there is only one

111. ***A.*** Standard molar enthalpy of formation of diamond is zero

R. Graphite is less stable than diamond

112. ***A.*** Cell constant for a cell depends upon nature of the material of the electrode

R. The observed conductance of a solution does not depend upon nature of electrolyte and concentration of solution

113. ***A.*** In a zero order reaction, if concentration of the reactant is doubled half life period is also doubled

R. The total time taken for a zero order reaction to complete is double of the half life period

114. ***A.*** Li and Mg show diagonal relationship

R. Li and Mg are diagonal to each other in periodic table

Space for rough work

115. ***A.*** In water, orthoboric acid behaves as a weak monobasic acid

R. In water, orthoboric acid acts a proton donor

116. ***A.*** HI cannot be prepared by the action of conc. H_2SO_4 on KI

R. Conc. H_2SO_4 forms compelx with HI

117. ***A.*** The geometrical isomers of the complex $[M(NH_3)_4Cl_2]$ are optically inactive

R. Both geometrical isomers of the complex $(M(NH_3)_4Cl_2)$ possess axis of symmetry

118. ***A.*** Molecules that are not superimposable on their mirror image are chiral

R. All chiral molecules have chiral centres

119. ***A.*** Nitrobenzene can be used as a solvent in Friedel crafts alkylation of bromobenzene

R. Nitrobenzene does not undergo friedel craft reaction

120. ***A.*** Treatment of 2-chlorobutane with potassium ter-butoxide produces but-l-ene as the major product

R. The base ter-butoxide being bulkier, removes the less hindered β-hydrogen atoms

BIOLOGY

121. Nacrotrophic fungi are
(1) Corticolous
(2) Biotrophs
(3) Saprophytic but also live as parasite
(4) Parasite but lives saprophytically after killing the host

122. Find the correct match

	Column I		Column II
a.	Dicots with scattered vascular bundles	i.	*Podophylum* and *Peperomia*
b.	Cortical vascular bundles	ii.	*Amaranthes* and *Boerhaavia*
c.	Medullary vascular bundles	iii.	*Nyctanthes* and *Casuarina*
d.	Polystelic condition	iv.	*Primula* and *Dianthera*

(1) a - i, b - iii, c - ii, d - iv
(2) a - i, b - ii, c - iii, d - iv
(3) a - iii, b - i, c - ii, d - iv
(4) a - iv, b - ii, c - iii, d - i

123. Deficiency of which element causes deficiency of nitrogen ?
(1) Mo (2) K
(3) Mn (4) S

124. Movement of electrolytes through the roots is generally
(1) Against electrochemical gradient and require energy

Space for rough work

(2) Along electrochemical gradient and does not require energy
(3) A passive process
(4) Dependent on aquaporins

125. Cell division in root nodules is promoted by....secreted by plant and .....secreted by bacteria
(1) Auxin, Cytokinin
(2) Cytokinin, Auxin
(3) Auxin, Leghemoglobin
(4) Nitrogenase, Leghemoglobin

126. In C_4 plants mesophyll cells and bundle sheath cells are specialised to perform respectively
(1) Light reaction and dark reaction
(2) Dark reaction and light reaction
(3) Light reaction and photorespiration
(4) Photorespiration and dark reaction

127. Mobile electrons carriers in ETS in mitochondrial membrane are
(1) PQ, PC (2) CoQ, Cyt. c
(3) PQ, Cyt. c (4) PC, CoQ

128. Transition reaction of aerobic respiration is the conversion of
(1) PEP $\rightarrow$ Pyruvate
(2) Pyruvate $\rightarrow$ Acetyl CoA
(3) Isocitrate $\rightarrow$ Oxalosuccinate
(4) Succinyl CoA $\rightarrow$ Succinate

129. Seed dormancy in tomato seeds is due to
(1) Impermeable seed coat
(2) Immature embryo
(3) Presence of ferulic acid in pulp
(4) Abscisic acid in pulp

130. Gibbane ring skeleton in structure and production of hydrolytic enzymes in barley endosperm is characteristic of
(1) Cytokinin (2) Auxins
(3) Gibberellins (4) Ethylene

131. The hormone which can replace long days and low temperature requirement for flowering in some palnts is
(1) Gibberellin (2) Cytokinin
(3) Vernalin (4) Ethylene

132. Movements of moss spermatozoids towards archegonial neck is
(1) Chemotropic movement
(2) Chemotactic movement
(3) Chemonastic movement
(4) Mechanical movement

133. What will be the ploidy of endosperm and zygote if the cross is made between 6n ♀ plant and 4n ♂ plant ?
(1) 5n, 8n (2) 8n, 5n
(3) 10n, 7n (4) 6n, 4n

134. The maximum height of a plant is 18 feet and minimum average height 6 feet. If plant height is controlled by 3 pairs of polygenes then the height of a plant with genotype AabbCc will be
(1) 8 feet (2) 10 feet
(3) 12 feet (4) 14 feet

135. Which one of the following genes influences the viability of the organisms when present in homozygous condition?
(1) Curly wings gene in *Drosophila*
(2) Plum eyes gene in *Drosophila*

Space for rough work

(3) Sickle cell gene

(4) All fo these

136. Which statement is correct for negative operon?

(1) Co-repressor binds with inducer

(2) Co-repressor binds with repressor

(3) Co-repressor does not bind with repressor

(4) cAMP shows negative effect

137. Complete genome of which non-crop and crop plants has been sequenced ?

(1) *Datura* and wheat respectively

(2) *Arabidopsis* and maize respectively

(3) *Oenothera* and oat respectively

(4) *Arabidopsis* and rice respectively

138. Match the following

	Column I		Column II
a.	*Pantadiplandra*	i.	Calcium alginate
b.	Mutation breeding	ii.	PEG
c.	Artificial seed	iii.	Brazzin
d.	Parasexual hybridisation	iv.	Pelita-2

(1) a - iv, b - iii, c - ii, d - i

(2) a - iii, b - iv, c - i, d - ii

(3) a - ii, b - iv, c - i, d - iii

(4) None of these

139. Cybrid is a result of

(1) Fusion of cytoplasm and nuclei of the two somatic cells

(2) Fusion of cytoplasm of two somatic cell but the nuclei remain unfused

(3) Fusion of cytoplasm of two somatic cells occurs but the nucleus of one cell persists, and the nucleus of second cell degenerates

(4) Fusion of cytoplasm of two somatic cells takes place but one part of the nucleus of one cell fuses with the entire nucleus of second cell

140. Plants are killed in winter by frost

(1) Because of desiccation and mechanical damages to the tissues

(2) Because no photosynthesis takes place at such low temperature

(3) Because respiration ceases at such low temperature

(4) Because there is no transpiration

141. What are demospongiae ? They are porifera possessing

(1) Skeleton of siliceous spicules and syconoid canal system

(2) Calcareous skeleton and lenuconoid can system

(3) Skeleton of siliceous spicules or of spongin fibres or both and leuconoid canal system

(4) Skeleton with triaxon spicules and asconoid canal system

142. Match list 1 and list 2 and choose the correct answer from the codes given below

	List 1		List 2
a.	Ductus caroticus present	i.	Mammalian eye
b.	Right aorta present	ii.	Reptilian embryonic condition

Space for rough work

c. Foramen ovale iii. Crocodile adult arterial system
d. Fenestra ovalis iv. Mammalian foetal heart
e. Foramen Pannizzae v. Avian adult condition
f. Fovea centralis vi. Amphibian ear

Codes

	a	b	c	d	e	f
(1)	ii	iii	i	vi	iv	v
(2)	i	vi	iii	iv	v	ii
(3)	i	ii	iii	vi	iv	v
(4)	ii	v	iv	vi	iii	i

143. Ascidia is
(1) Ciliary feeder (2) Microphagus
(3) Both (1) and (2) (4) None of these

144. When does the stratified epithelium become single layered ? When it passes from
(1) Pharynx to oesophagus
(2) Oesophagus to cardiac stomach
(3) Pyloric stomach to duodenum
(4) Small intestine to large intestine

145. Islets of Langerhans secrete
(1) Insulin (2) Glucagon
(3) Both (1) and (2) (4) Amylase

146. The reason why snakes are said to possess floating ribs is that the ribs are
(1) Restricted only to the dorsal side
(2) Restricted to the ventral side
(3) Not attached to sternum
(4) Not attached to the vertebral column

147. The nictitating membrane of eye is lubricated by the oily secretion of
(1) Harderian gland (2) Lacrymal gland
(3) Uropygial gland (4) Preen gland

148. Which is the organ of orientation and equilibrium in prawn ?
(1) Compound eye
(2) Statocysts
(3) Pulmonary sacs setae
(4) Antennule

149. The renal portal system in man is
(1) Poorly developed
(2) Well developed
(3) Absent
(4) Printitive than that of frog

150. Which one of the following is present in the saliva of cockroach ?
(1) Lipase (2) Amylase
(3) Pepsin (4) All of these

151. In which of the following does Schizogony cycle occur ?
(1) Mosquito
(2) Female culex mosquito
(3) Female anopheles
(4) Man

152. The characteristics of blood group are
(1) Inherited and constant through life
(2) Self developed and changes once in life
(3) Inherited but changes at the time of puberty
(4) Self developed in male and inherited in female

Space for rough work

153. Presence of similar organ forming similar systems and performing similar functions in widely separated groups of animals constitute an evidence of evolution. The which of these does it belong ?
(1) Evidences of comparative morphology
(2) Evidences of comparative physiology
(3) Evidences of comparative homology
(4) Evidences of comparative changes

154. The common European honey bee is
(1) *Apis indica* (2) *Apis dorsata*
(3) *Apis florae* (4) *Apis mellifera*

155. How can malaria be best controlled ?
(1) Killing the adult mosquito
(2) Proper medical care of patients
(3) Making the breeding places (ponds etc) unsuitable for completion of life cycle
(4) All the three in an integrated way

156. What happens to the body temperature of a bird if it is transferred from 30° C to 70° C ?
(1) It rises above normal due to increased production and conservation of heat
(2) Decline due to increased dissipation of heat
(3) Is maintained at original level due to increased conservation and production of heat
(4) Is maintained at original level due to increased dissipation of heat

157. Respiratory pigment of scorpion is
(1) Haemoglobin (2) Haemocynin
(3) Cytochrome (4) Haematin

158. What is fovea centralis on the retina ?
(1) Yellow spot (2) Blind spot
(3) Optic spot (4) Choroid fissure

159. Which one of the following sets of fibres are present in the ventral roots of spinal cord ?
(1) Somatic sensory and visceral sensory
(2) Somatic motor and somatic sensory
(3) Visceral sensory and visceral motor
(4) Somatic motor and visceral motor

160. What does the parathyroid hormone 'Parathormone' regulate ?
(1) Iron metabolism
(2) Calcium and phosphorous metabolism
(3) Glucose metabolism
(4) Calcium metabolism

ASSERTION/REASON (Q.161 – Q.180)

Instruction for Questions :

These questions consists of two statements each, printed as Assertion and Reason. While answering these questions you are required to choose any one of the following four responses.

(1) If both assertion and reason are true but reason is the correct explanation of assertion.

(2) If both the assertion and reason are true but reason is not the correct explanation of assertion.

(3) If the assertion is true but the reason is false.

(4) If both the assertion and reason are false.

Space for rough work

161. ***A.*** Barley, sorghum and tulsi are smoother crops

R. They favour the growth of some common weeds

162. ***A.*** There are two alae in *Pisum sativum* flower

R. Both alae are covered by largest petal

163. ***A.*** Xerophytes have high water retaining capacity

R. They have high OP

164. ***A.*** Root pressure is a dynamic and always a positive hydrostatic pressure

R. It is a universal phenomenon and develops under absorption lag

165. ***A.*** During stomatal opening there is relative change in TP of guard cell and subsidiary cell

R. TP of subsidiary cell decreases during opening

166. ***A.*** Ca^{++} cannot replace H^{+} adsorbed on clay or humus particles

R. Retentive capacity of Ca^{+2} is more than that of H^{+}

167. ***A.*** Dark acidification of cytoplasm occurs in CAM plants

R. Organic acids are decarboxylated during night

168. ***A.*** In cellular respiratory ETS electron movement is a downhill journey

R. Electrons move from high redox potential to low redox potential

169. ***A.*** Some organisms can maintains internal homeostasis by means of physiological processes and are called 'Regulators'

R. 'Regulators' can maintain internal homeostasis only upto a limit of stressful conditions

170. ***A.*** The tectum provides a characteristic designs over the surface of pollne grain

R. Tectum is made of a highly resistant fatty substance called sporopollenin

171. ***A.*** Annelids, arthropods and molluscs are protostomial coelomates

R. All the three phyla include members with bilateral symmetry and true coelomates

172. ***A.*** The honey bee queen copulates only once in her lifetime

R. The honey bee queen can lay fertilized as well as infertilized eggs

173. ***A.*** Death is essential in the life cycle of the organism

R. It help so to recycle the materials in the environment

Space for rough work

174. ***A.*** Senescence is the time when age associated defects are manifestal

R. Certain genes may be undergoing sequential switching on and off during one's life

175. ***A.*** Mantle of pearl oyster is three layered

R. Nacre secreting cells are present just below the nacreous layer

176. ***A.*** Organ transplantation patients are given immunosuppressive drugs

R. Transplanted tissue has antigens which stimulate the specific immune response of the recipient

177. ***A.*** Cattle breeds can be improved by super ovulation and embryo transplantation

R. Superovulation in high milk-yielding cows is induced by hormonal injection

178. ***A.*** Fish meal is a rich source of protein for cattle and poultry

R. Fish meal is produced from non-edible parts of fishes like fins, tail, ect

179. ***A.*** Thrombocytes play an important role in blood coagulation

R. They are produced by the fragmentation of megakaryocytes

180. ***A.*** Patients of diabetes mellitus drink a large quantity of water

R. Elimination of excess of sugar from blood through urine requires water

GENERAL KNOWLEDGE

181. A 21 year old primigravida is admitted at 39 weeks gestation with painless antepartum haemorrhage. On examination uterus is soft, non tender and head engaged. The management for her would be:
(1) Blood transfusion and sedatives.
(2) A speculum examination
(3) Pelvic examination in OT
(4) Tocolysis and sedatives.

182 Which statement is true regarding VENTOUSE (Vacuum Extractor)
(1) Minor scalp abrasions and subgaleal haematomas to new born are moe frequent than forceps.
(2) Can be applied when foetal head is above the level of ischial spine.
(3) Maternal trauma is more frequent than forceps.
(4) Can not be used when fetal head is not fully rotated.

183. A perimanopausal lady with well differentiated adenocarcinoma of uterus has more than half myometrial invasion, vaginal metastasis and inguinal lymph node metastasis. She is staged as:
(1) Stage III B (2) Stage III C
(3) Stage IV a (4) Stage IV b

184. A 24 year old male presents to a STD clinic with a single painless ulcer on external genitalia. The choice of laboratory test to look for the etiological agent would be:

Space for rough work

(1) Scrappings from ulcer for culture on chocolate agar with antibiotic supplement.
(2) Serology for detection of specific IgM antibodies.
(3) Scrappings from ulcer for dark field microscopy.
(4) Scrappings from ulcer for tissue culture.

185. There has been an outbreak of food borne salmonella gastroenteritis in the community and the stool samples have been received in the laboratory. Which is the enrichment medium of choice:
(1) Cary Blair medium
(2) V R medium
(3) Selenite "F" medium
(4) Thioglycollate medium.

186. A 20 year old male had pain abdomen and mild fever followed by gastroenteritis. The stool examination showed presence of pus cells and RBCs on microscopy. The etiological agent responsible is most likely to be:
(1) Enteroinvasive E. coli.
(2) Enterotoxigenic E. coli.
(3) Enteropathiogenic E. coli.
(4) Enetroaggregative E. coli.

187. A man presents with fever and chills 2 weeks after a louse bite. There was a maculo-popular rash on the trunk which spread peripherally. The casue of this infection can be:
(1) Scurb typhus.
(2) Endemic typhus.
(3) Rickettsial pox.
(4) Epidemic typhus.

188. A young female presents with history of dyspnoea on exertion. On examination, she has wide, fixed split of S2 with ejection systolic murmur (III/VI) in left second intercostals space. Her EKG shows left axis deviation. The most probable diagnosis is :
(1) Total anomalous pulmonary venous drainge.
(2) Tricuspid atresia.
(3) Ostium primum atrial septal defect.
(4) Ventricular septal defect with pulmonary arterial hypertension.

189. Which test is performed to detect reversible myocardial ischemia ?
(1) Coronary angiography.
(2) MUGA scan.
(3) Thallium scan.
(4) Resting

190. A adult male patient presented in the OPD with complaints of cough and fever for 3 months and haemoptysis off and on. His sputum was positive for AFB. On probing it was found that he had already received treatment with RHZE for 3 weeks from a nearby hospital and discontinued. How will you categorize and manage the patient ?
(1) Category III, start 2 (RHZ)3.
(2) Category II, start 2 (RHZE)3.
(3) Category I, start 2 (RHZE)3.
(4) Category II, start 2 (RHZES)3.

Space for rough work

191. A screening test is used in the same way in two similar populations; but the proportion of false positive results among those who test positive in population A is lower than those who test positive in population B. What is the likely explanation?

(1) The specificity of the test is lower in population A.

(2) The prevalence of the disease is lower in population A.

(3) The prevalence of the disease is higher in population A.

(4) The specificity of the test is higher in population A.

192 Residence of three village with three different types of water supply were asked to participate in a study to identify cholera carries. Because several cholera deaths had occurred in the recent past, virtually everyone present at the time submitted to examination. The proportion of residents in each village who were carries was computed and compared. This study is a :

(1) Cross- sectional study.

(2) Case-control study.

(3) Concurrent cohort study.

(4) Non-concurrent.

193. A drug company is developing a new pregnancy-test kit for use on an outpatient basis. The company used the pregnancy test on 100 women who are known to be pregnant. Out of 100 women, 99 showed positive test. Upon using the same test on 100 non-pregnant women, 90 showed negative result. What is the sensitivity of the test ?

(1) 90%

(2) 99%

(3) Average of 90 & 99.

(4) Cannot be calculated from the given data.

194. An investigator wants to study the association between maternal intake of iron supplements (Yes/ No) and birth weights (in gms) of newborn babies. He collects relevant data from 100 pregnant women and their newborns. What statistical test of hypothesis would you advise for the investigator in this situation ?

(1) Chi-Square test.

(2) Unpaired or independent t-test.

(3) Analysis of Variance.

(4) Paired t-test.

195. Pin index system is a safety feature adopted in anaesthesia. Machines to prevent:

(1) Incorrect attachment of anaesthesia machines.

(2) Incorrect attachment of anaesthesia face masks.

(3) Incorrect inhalation agent delivery.

(4) Incorrect gas cylinder attachment.

Space for rough work

196. A 9-years old boy has steroid dependent nephrotic syndrome for the last 5 years. He has received corticosteroids almost continuously during this period and has cushingoid features. The blood pressure is 120/86 mmHg and there are bilateral subcapsular cataracts. The treatment of choice is:
(1) Levamisole.
(2) Cyclophosphamide.
(3) Cyclosporin A.
(4) Intravenous pulse corticosteroids.

197. After a minor head injury a young patient was unable to close his left eye and had drooling of saliva from left angle of mouth. He is suffering from :
(1) VIIth nerve injury.
(2) Vth nerve injury.
(3) IIIrd nerve injury.
(4) Combined VIIth and IIIrd nerve injury.

198. A 62 years old man with caracioma of lung presented to emergency department with respiratory distress. His EKG showed electrical alternans. The most likely diagnosis is :
(1) Pneumothorax.
(2) Pleural effusion.
(3) Cardiac tamponade.
(4) Constrictive pericarditis.

199. A patient in an ICU is on a CVP line. His blood culture shows growth of grain positive cocci which are catalase positive and coagulase negative. The most likely etiological agent is:
(1) Staplylococcus aureus
(2) Staplylococcus epidermidis
(3) Streptococcus pyogenes
(4) Enterococcus faecalis.

200. A 50 year old man suffering from carcinoma of prostate showed areas of sclerosis and collapse of T10 and T11 vertebrae in X-ray. The spread of this cancer to the above vertebrae was most probably through:
(1) Sacral canal
(2) Lymphatic vessels
(3) Internal vertebral plexus of veins
(4) Superior rectal veins

Space for rough work

ANSWERS

PHYSICS

1.	(3)	2.	(3)	3.	(2)	4.	(3)	5.	(4)
6.	(1)	7.	(3)	8.	(1)	9.	(2)	10.	(1)
11.	(3)	12.	(1)	13.	(2)	14.	(2)	15.	(3)
16.	(1)	17.	(3)	18.	(2)	19.	(1)	20.	(3)
21.	(2)	22.	(1)	23.	(3)	24.	(1)	25.	(3)
26.	(3)	27.	(2)	28.	(3)	29.	(2)	30.	(1)
31.	(3)	32.	(4)	33.	(1)	34.	(3)	35.	(4)
36.	(3)	37.	(4)	38.	(2)	39.	(4)	40.	(4)
41.	(1)	42.	(3)	43.	(3)	44.	(3)	45.	(1)
46.	(4)	47.	(2)	48.	(2)	49.	(1)	50.	(4)
51.	(3)	52.	(1)	53.	(1)	54.	(1)	55.	(3)
56.	(4)	57.	(3)	58.	(1)	59.	(2)	60.	(1)

CHEMISTRY

61.	(2)	62.	(1)	63.	(3)	64.	(1)	65.	(2)
66.	(2)	67.	(1)	68.	(1)	69.	(2)	70.	(2)
71.	(2)	72.	(4)	73.	(3)	74.	(4)	75.	(3)
76.	(3)	77.	(1)	78.	(3)	79.	(3)	80.	(2)
81.	(3)	82.	(1)	83.	(4)	84.	(3)	85.	(3)
86.	(4)	87.	(2)	88.	(2)	89.	(4)	90.	(1)
91.	(2)	92.	(4)	93.	(2)	94.	(1)	95.	(2)
96.	(4)	97.	(1)	98.	(3)	99.	(1)	100.	(4)
101.	(1)	102.	(1)	103.	(4)	104.	(4)	105.	(3)
106.	(2)	107.	(1)	108.	(2)	109.	(1)	110.	(3)
111.	(4)	112.	(4)	113.	(2)	114.	(2)	115.	(3)
116.	(3)	117.	(1)	118.	(3)	119.	(1)	120.	(1)

BIOLOGY

121.	(4)	122.	(1)	123.	(1)	124.	(1)	125.	(1)
126.	(1)	127.	(3)	128.	(2)	129.	(3)	130.	(3)
131.	(1)	132.	(2)	133.	(2)	134.	(2)	135.	(4)
136.	(2)	137.	(4)	138.	(2)	139.	(3)	140.	(1)
141.	(3)	142.	(4)	143.	(3)	144.	(2)	145.	(3)
146.	(3)	147.	(1)	148.	(2)	149.	(3)	150.	(2)
151.	(4)	152.	(1)	153.	(1)	154.	(4)	155.	(4)
156.	(3)	157.	(2)	158.	(1)	159.	(4)	160.	(2)
161.	(3)	162.	(2)	163.	(1)	164.	(3)	165.	(3)
166.	(3)	167.	(3)	168.	(3)	169.	(3)	170.	(2)
171.	(2)	172.	(2)	173.	(1)	174.	(1)	175.	(2)
176.	(1)	177.	(2)	178.	(3)	179.	(2)	180.	(1)

GENERAL KNOWLEDGE

181.	(3)	182.	(2)	183	(4)	184.	(3)	185.	(3)
186.	(1)	187.	(2)	188.	(3)	189.	(3)	190.	(4)
191.	(3)	192.	(1)	193.	(2)	194.	(4)	195.	(4)
196.	(2)	197.	(1)	198.	(3)	199.	(2)	200.	(3)