English

ALLEN CAREER INSTITUTE KOTA (RAJASTHAN)

Path to Success

PAPER CODE	0	1	C	M	2	1	3	0	7	6
FORM NUMBER										

CLASSROOM CONTACT PROGRAMME

(ACADEMIC SESSION 2013-2014)

ENTHUSIAST COURSE

TARGET : PRE-MEDICAL 2014

MAJOR TEST # 01

ALLEN AIPMT (12TH Syllabus) | **DATE : 05 - 01 - 2014**

INSTRUCTIONS ( )

1. A seat marked with Reg. No. will be allotted to each student. 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.

2. Duration of Test is **3 Hours** and Questions Paper Contains **180** Questions. The Max. Marks are **720**.
   3 **180** **720**
3. Student can not use log tables and calculators or any other material in the examination hall.
4. Student must abide by the instructions issued during the examination, by the invigilators or the centre incharge.
5. Before attempting the question paper ensure that it contains all the pages and that no question is missing.
6. Each correct answer carries 4 marks, while **1 mark will be deducted for every wrong answer.** Guessing of answer is harmful.
   1
7. A candidate has to write his / her answers in the OMR sheet by darkening the appropriate bubble with the help of **Blue / Black Ball Point Pen only** as the correct answer(s) of the question attempted.
   OMR
8. **Use of Pencil is strictly prohibited.**

Note : In case of any Correction in the test paper, please mail to **dlpcorrections@allen.ac.in** within 2 days along with Your Form No. & Complete Test Details.
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1. μ_e and μ_h are the electron and hole mobilities of a semiconductor crystal respectively. E is the applied electric field. Then the current density J for the intrinsic semiconductor is :
(Take n_i the intrinsic concentration of the semiconductor)

(1) $\frac{n_i.e(\mu_e+\mu_h)}{E}$ (2) $\frac{E}{n_i e(\mu_e+\mu_h)}$

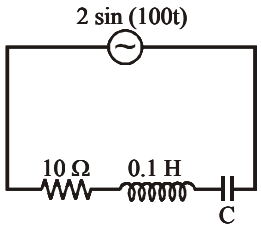
(3) $n_i e(\mu_e + \mu_h)E$ (4) $n_i.e(\mu_e - \mu_h)E$

2. A 600 pF capacitor is charged by a 200 V supply. It is then disconnected from the supply and is connected to another uncharged 600 pF capacitor. What is the energy lost (inJ) after reconnection ?

(1) 6×10^{-6} (2) 6×10^{-5}

(3) 5×10^{-6} (4) 6×10^{-4}

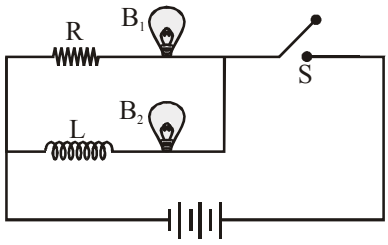
3. The power factor of the circuit in figure is $1/\sqrt{2}$. The capacitance of the circuit is equal to



(1) 400 μF (2) 300 μF

(3) 500 μF (4) 200 μF

4. Figure shows two bulbs B_1 and B_2, resistor R and an inductor L.When the switch S is turned off :-



(1) both B_1 and B_2 die out promptly

(2) both B_1 and B_2 die out with some delay

(3) B_1 dies out promptly but B_2 with some delay

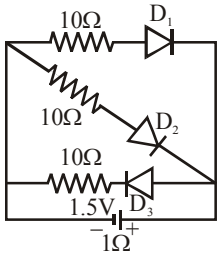
(4) B_2 dies out promptly but B_1 withsome delay

5. In an interference experiment, third bright fringe is obtained at a point on the screen with a light of 700 nm. What should be the wavelength of the light source in order to obtain 5th bright fringe at the same point :-

(1) 500 nm (2) 630 nm

(3) 750 nm (4) 420 nm

6. In the circuit shown in figure all the diodes are ideal. The current drawn from the battery of 1.5 volts emf and 1Ω internal resistance is :



(1) $\frac{1.5}{\left(\frac{10}{3}+1\right)}$A (2) $\frac{1.5}{\left(\frac{10}{2}+1\right)}$A

(3) $\frac{1.5}{11}$A (4) $\frac{1.5}{10}$A

7. An electric field is expressed as $\vec{E}=2\hat{i}+3\hat{j}$. Find the potential difference $(V_A - V_B)$ between two points A and B whose position vectors are given by $r_A=\hat{i}+2\hat{j}$ and $r_B=2\hat{i}+\hat{j}+3\hat{k}$.

(1) –1 V (2) 1 V (3) 2 V (4) 3 V

8. A 50 W, 100 V lamp is to be connected to an ac main of 200 V, 50 Hz. What capacitor is essential to be put in series with the lamp ?

(1) $\frac{25}{\sqrt{2}}\mu F$ (2) $\frac{50}{\pi\sqrt{3}}\mu F$

(3) $\frac{50}{\sqrt{2}}\mu F$ (4) $\frac{100}{\pi\sqrt{3}}\mu F$

9. A coil of resistance R and inductance L is connected to a battery of E volt emf. The final current in the coil is :-

(1) E/R (2) E/L

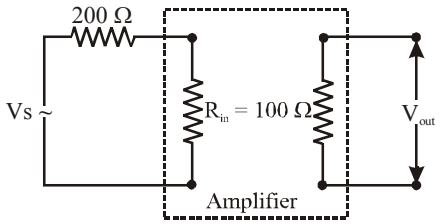
(3) $\sqrt{E/(R^2+L^2)}$ (4) $\sqrt{EL/(R^2+L^2)}$

10. Light of wavelength 6000 Å falls on a single slit of width 0.1 mm. The second minimum will be formed for the angle of diffraction of :-

(1) 0.08 radian (2) 0.06 radian

(3) 0.012 radian (4) 0.12 radian

11. The circuit shown in the figure represents an amplifier with an input resistance R_{in} = 100 ohm. This input resistance is connected to an ac source V_s through a resistance of 200 ohm. The voltage gain of the transistor is 300. If the peak to peak voltage of the input ac source is 5 volt, the peak to peak voltage the output will be :



(1) 100 V (2) 200 V

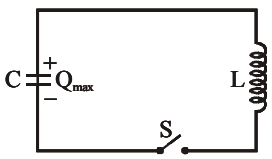
(3) 300 V (4) 500 V

12. Consider two concentric spherical surfaces S_1 with radius a and S_2 with radius 2a, both centred on the origin. Theres is a charge +q at the origin, and no other charges. Compare the flux ϕ_1 through S_1 with the flux ϕ_2 through S_2:-

(1) $\phi_1 = 4\phi_2$ (2) $\phi_1 = 2\phi_2$

(3) $\phi_1 = \phi_2$ (4) $\phi_1 = \phi_2/2$

13. In an LC circuit as shown in figure, the switch is closed at t = 0. Q_{max} = 100 μC; L = 40 mH; C = 100 μF. What will be equation of instantaneous charge of capacitor



(1) 100 cos (500t) μC (2) $\frac{50}{\sqrt{2}}\cos(500t)\mu C$

(3) 100 sin (1000t) μC (4) 100 cos (250) μC

14. A step-down transformer transforms a supply line voltage of 2200 volt into 220 volt. The primary coil has 5000 turns. The effciency and power transmitted by the transformer are 90% and 8 kilowatt respectively. Then, the number of turns in the secondary is :-

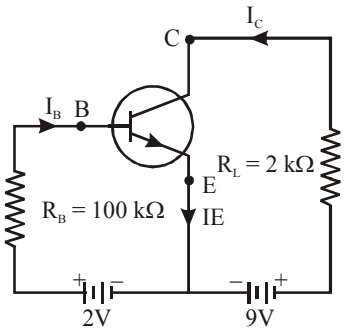
(1) 5000 (2) 50 (3) 500 (4) 5

15. When the angle of incidence on a material is 60°, the reflected light is completely polarised. The velocity of the refracted ray inside the material is (in ms^{-1}) :-

(1) 3×10^8 (2) $\left(\frac{3}{\sqrt{2}}\right) \times 10^8$

(3) $\sqrt{3} \times 10^8$ (4) 0.5×10^8

16. The circuit shown in figure gives biasing with base resistor method. Determine the collector-current I_C and the collector-emitter voltage V_{CE}, neglecting base-emitter voltage V_{BE}. Given that β = 100 :



(1) 1 mA; 9V (2) 1 mA; 5V

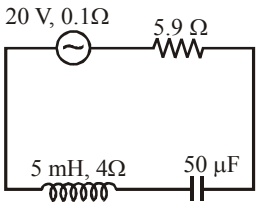
(3) 2 mA; 7V (4) 2 mA; 5V

17. An electric dipole consist of two opposite charges each of magnitude 1 μC seperated by 2 cm. The dipole is placed in an external electric field of 10^5 N/c find work done in rotating the dipole through 180° starting than the position θ = 0° :-

(1) 0.04 J (2) 0.004 J

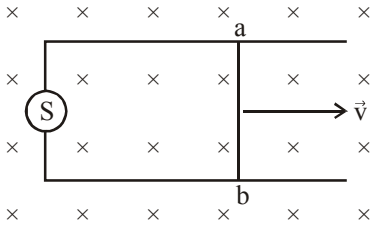
(3) –0.004 J (4) 0.002 J

18. In the circuit of figure the source frequency is w = 2000 rad/s. The current in the circuit will be



(1) 2A (2) 3.3A (3) $2/\sqrt{5}$ A (4) $\sqrt{5}$ A

19. The following diagram shows a wire ab of length ℓ and resistance R sliding on a smooth pair of rails with a velocity v towards right. A uniform magnetic field of indunction B acts



normal to the plane containing the rails and the wire inwards. S is a current source providing a constant current I in the circuit. Then, the potential difference between a and b is :-

(1) $B v \ell$

(2) IR

(3) $B v \ell$ – IR

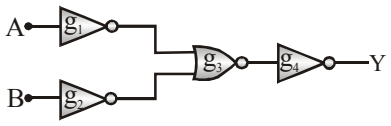
(4) $B v \ell$ + IR

20. The ratio of de-Broglie wavelength of α particle to that of a proton being subjected to the same magnetic field so that the radii of their paths are equal to each other assuming the field induction vector $\vec{B}$ is perpendicular to the velocity vectors of the α particle and the proton is :-

(1) 1 (2) 1/4

(3) 1/2 (4) 2

21. The combination of gates shown below produces :



(1) AND gate

(2) XOR gate

(3) NOR gate

(4) NAND gate

22. When a wire is stretched then its length increases by 2% then resistance of wire :-

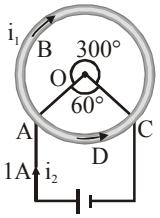
(1) increases by 2%

(2) decreases by 2%

(3) increases by 4%

(4) decreases by 4%

23. A cell is connected between the points A and C of a circular conductor ABCD of centre O with angle $\angle AOC = 60°$. If B_1 and B_2 are the magnitudes of the magnetic fields at O due to the currents in ABC and ADC respectively, the ratio $\frac{B_1}{B_2}$ is :-



(1) 0.2 (2) 6

(3) 1 (4) 5

24. The magnetic field in the plane electromagnetic field is given by

$B_y = 2\times 10^{-7} \sin (0.5 \times 10^3 z + 1.5 \times 10^{11} t)$ T

The expression for the electric field may be given by :-

(1) $E_y = 2\times10^{-7} \sin (0.5\times10^3 z + 1.5\times10^{11} t)$ V/m

(2) $E_x = 2\times10^{-7} \sin (0.5\times10^3 z + 1.5\times10^{11} t)$ V/m

(3) $E_y = 60 \sin (0.5 \times 10^3 z + 1.5 \times 10^{11} t)$ V/m

(4) $E_x = 60 \sin (0.5 \times 10^3 z + 1.5 \times 10^{11} t)$ V/m

25. A radio station is transmitting the waves of wavelength of 300 m. Radiation capacity of the transmitter is 10 KW find out the number of photons which are emitting per unit time :-

(1) 1.5×10^{35}

(2) 1.5×10^{31}

(3) 1.5×10^{29}

(4) 1.5×10^{33}

26. The maximum distance upto which TV transmission from a TV tower of height h can be received is proportional to

(1) $h^{1/2}$ (2) h (3) $h^{3/2}$ (4) h^2

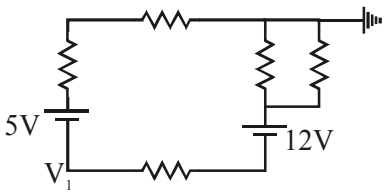
27. In the circuit shown each resistance is 2Ω. The potential V_1 is as indicated in the circuit. What is value of V_1 ?

(1) 9V

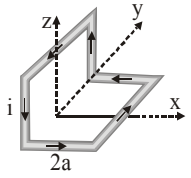
(2) –9V

(3) 3V

(4) –4V



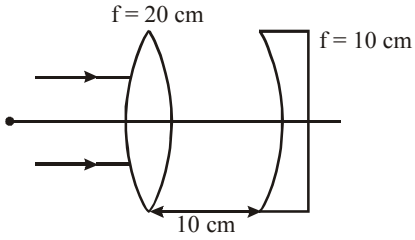
28. A non-planar loop of conducting wire carrying a current I is placed as shown in the figure. Each of the straight sections of the loop is of length 2a. The magnetic field due to this loop at the point P(a, 0, a) points in the direction.



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

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

29. Parallel rays are focussed ona a pair of lenses. Where will rays focussed after refraction from both lenses ?



(1) At 40 cm from first lens
(2) At ∞ from first lens
(3) At 10 cm from first lens
(4) At 20 cm from first lens

30. The activity of a sample is 64×10^{-5} ci. Its halflife is 3 days. The activity will become 5×10^{-6} ci after :-

(1) 12 days (2) 7 days
(3) 18 days (4) 21 days

31. What is the modulation index of an over modulated wave

(1) 1 (2) Zero (3) < 1 (4) > 1

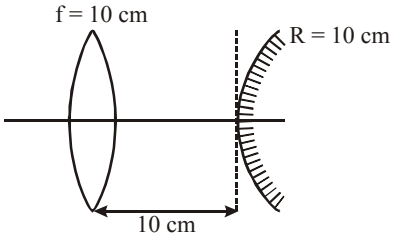
32. The potential difference between the terminals of a 6.0 V battery is 7.2 V when it is being charged by a current of 2.0A. What is the internal resistance of battery :-

(1) 1Ω (2) 0.4Ω (3) 0.6Ω (4) 0.2Ω

33. An e.m.f. of 12 volts is induced in a given coil when the current in it changes at the rate of 48 amperes per minute. The self inductance of the coil is :-

(1) 0.25 henry (2) 15 henry
(3) 1.5 henry (4) 9.6 henry

34. Image of an object kept at very large distance by a pair of convex lens and convex mirror is :



(1) Upright

(2) At 20 cm from lens

(3) At pole of mirror

(4) Inverted

35. The maximum wavelength of a beam of light that can be used to produce photo electric effect on a metal is 250 nm. The maximum energy of the electrons (in joule) emitted from the surface of the metal when a beam of light of wavelength 200 nm is used :-

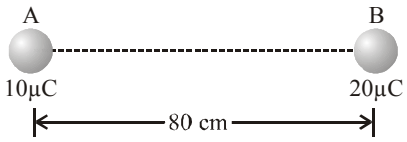
(1) 89.61×10^{-22}

(2) 69.81×10^{-22}

(3) 18.96×10^{-20}

(4) 19.86×10^{-20}

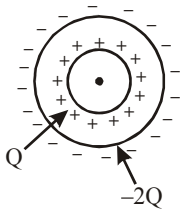
36. In the given figure distance of the point from A where the electric field is zero is :-



(1) 20 cm
(2) 10 cm
(3) 33 cm
(4) None of these

Key Filling

37. Two concentric conducting spheres of radii R and 2R are carrying charges Q and –2Q respectively. If the charge on inner sphere is doubled, the potential difference between the two spheres will



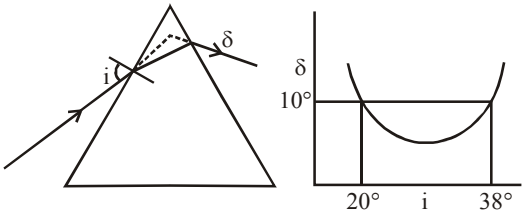
(1) become two times (2) become four times
(3) be halved (4) remain same

38. A circular current carrying coil has a radius R. The distance from the centre of the coil on the axis where the magnetic induction will be $\frac{1}{8}$th to its value at the centre of the coil, is :-

(1) $\frac{R}{\sqrt{3}}$ (2) $R\sqrt{3}$

(3) $2\sqrt{3}\,R$ (4) $\frac{2}{\sqrt{3}}R$

39. A ray is incident on prims at an angle i with normal, when it comes out of prism its angular deviation is δ. Graph between δ and i is given. Prism angle is :-



(1) 68° (2) 60° (3) 48° (4) 29°

40. The wavelength of the K_α line for an element of atomic number 43 is λ. Then the wavelength of K_α line for an element of atomic number 29 is :-

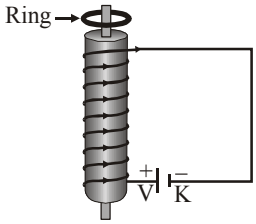
(1) $\left(\frac{43}{29}\right)\lambda$ (2) $\left(\frac{42}{28}\right)\lambda$

(3) $\frac{9}{4}\lambda$ (4) $\frac{4}{9}\lambda$

41. When a dielectric slab is introduced between the plates of an isolated charged capacitor, it
(1) Increases the capacitance of the capacitor
(2) Decreases the electric field between the plates
(3) Decreases the amount of energy stored in the capacitor
(4) All of the above

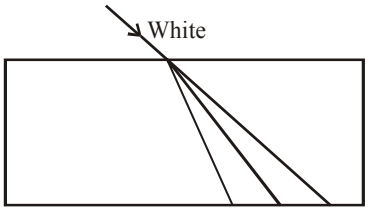
42. Three point charges of 1C, 2C and 3C are placed at the corners of an equilateral triangle of side 1m. Calculate the work required to move these charges to the corners of a smaller equilateral triangle of side 0.5 m.
(1) 9×10^9 J (2) 44×10^9 J
(3) 88×10^9 J (4) 99×10^9 J

43. A conducting ring is placed around the core of an electromagnet as shown in fig. When key K is pressed, the ring :-



(1) Remain stationary
(2) Is attracted towards the electromagnet
(3) Jumps out of the core
(4) None of the above

44. A white light is incident on glass slab. Maximum lateral displacement is for



(1) Red (2) Violet
(3) Green (4) Yellow

45. The volume of a nucleus is directly proportional to (A = mass number of the nucleus) :-

(1) A (2) A^3 (3) $\sqrt{A}$ (4) $A^{1/3}$

Use stop, look and go method in reading the question

46. Which will show highest vapour pressure ?
(1) 5 % Urea solution
(2) 3.5 % Urea solution
(3) 4 % Urea solution
(4) 6 % Urea solution

47. Nitric acid oxidise P into :-
(1) PH_3 (2) P_2O_5
(3) HPO_3 (4) H_3PO_4

48. Colloidion is a 4% solution of which one of the following, in alcohol-ether mixture?
(1) Nitroglycerine
(2) Cellulose acetate
(3) Glycoldinitrate
(4) Nitrocellulose

49. For the zero order reaction, $A \longrightarrow B + C$; initial concentration of A is 0.1 M. If [A] = 0.08M after 10 minutes, then it's half life and completion time are respectively :-
(1) 10min ; 20 min
(2) 25 min ; 50 min
(3) 2×10^{-3} min, 4×10^{-3} min
(4) 250 min ; 500 min

50. 3-Methyl-2-butanol on reaction with HCl gives predominantly :-
(1) 2-chloro-2-methylbutane
(2) 2-chloro-3-methylbutane
(3) 2-methyl-2-butene
(4) 3-methyl-1-butene

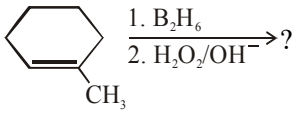
51. If at certain temperature the vapour pressure of pure water is 25 mm Hg and that of very dilute aqueous urea solution is 24.5 mm Hg, the molality of the solution is :-
(1) 0.02 (2) 1.2
(3) 1.11 (4) 0.08

52. When NaCl, is heated with $K_2Cr_2O_7$ & Conc. H_2SO_4 the vapours obtained is :-
(1) Chromic chloride (2) chromyl chloride
(3) Chlorine (4) None of the above

53. In petrochemical industries, alcohols are directly converted to gasoline by passing over heated.....
(1) platinum (2) ZSM–5
(3) iron (4) nickel

54. The energy of activation for an uncatalysed reaction is 100 kJ mol^{-1}. Presence of a catalyst lowers the energy of activation by 75%. Calculate the $\log_{10}$ of ratio of rate constant of catalysed and uncatalysed reactions at 27°C. Assuming frequency factor is same for both reactions. (Given $2.303 \times 8.314 = 19.147$) :-
(1) 13.05 (2) 26.10
(3) 6.52 (4) None of these

55. 1-Methylcyclohexane is allowed to react with B_2H_6. The product is then treated with H_2O_2 and NaOH. The reaction is :



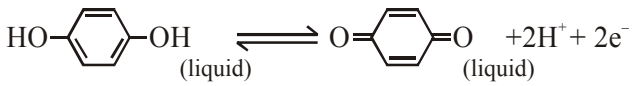
The product formed is :-
(1) 1-methyl cyclohexanol
(2) 2-methyl cyclohexanol
(3) (±) trans-2-methyl cyclohexanol
(4) (±) Cis-2-methyl cyclohexanol

56. The van't Hoff factor for $BaCl_2$ at 0.01M concentration is 1.98. The percentage of dissociation of $BaCl_2$ at this conc. is :-
(1) 49 (2) 69 (3) 89 (4) 98

57. Which of the following compound has different geometry from other?
(1) $[Ni(CN)_4]^{2-}$ (2) $[Cu(CN)_4]^{3-}$
(3) $[Ni(CO)_4]$ (4) $(NiCl_4)^{2-}$

58. Which one of the following is not a step growth polymer ?
(1) Nylon-6 and Dacrone
(2) Nylon-6, 6 and Glyptal
(3) PHBV and Nylon-2, Nylon-6
(4) Teflon

59. The half cell reaction involving quinhydrone electrode is :-



If E^o_{OP} for this electrode is 1.30 volt then what will be the oxidation electrode potential at pH = 3 ?
(1) 1.48 volt (2) 1.20 volt
(3) 1.10 volt (4) 1.05 volt

60. The O^{18}-labelled ester $CH_3-\overset{O}{\overset{\|}{C}}-\overset{18}{O}C_2H_5$ is hydrolyzed with aqueous H_2SO_4. The products will be :-

(1) $CH_3-\overset{O}{\overset{\|}{C}}-\overset{18}{O}H$ and C_2H_5OH

(2) $CH_3-\overset{O}{\overset{\|}{C}}-OH$ and $C_2H_5\overset{18}{O}H$

(3) $CH_3-\overset{O}{\overset{\|}{C}}-OH$ and C_2H_5OH

(4) $CH_3-\overset{O}{\overset{\|}{C}}-\overset{18}{O}H$ and $C_2H_5\overset{18}{O}H$

61. NaCN used in the froth floatation method for the purification of ore is:-

(1) ZnS which contain PbS

(2) Cu_2S which contain Fe_2S_3

(3) PbS which contain ZnS

(4) PbS which contain SiO_2

62. Chelating Ligands amongst following are :-

(a) dien (b) Pn

(c) $C_2O_4^{2-}$ (d) gly^-

(e) Py (f) dipy

(1) a, b, c, e, f (2) a, b, c, d, e

(3) b, d, f (4) a, b, c, d, f

63. Which one of the following sets of monosaccharides forms sucrose ?

(1) β-D-Glucopyranose and α-D-fructofuranose

(2) α-D-Glucopyranose and β-D-fructopyranose

(3) α-D-Galactopyranose and α-D-Glucopyranose

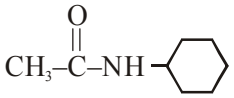
(4) α-D-Glucopyranose and β-D-fructofuranose

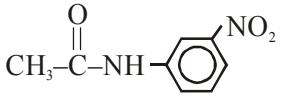
64. A metal M (at. wt. = 40) depending on temperature crystallises in f.c.c. and b.c.c structures whose unit cell length are 3.5 and 3.0Å respectively. The ratio of its densities in f.c.c and b.c.c. structure ?

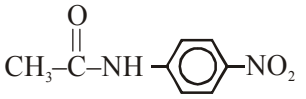
(1) 1.259 (2) 2.256

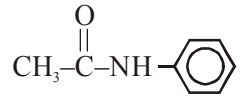
(3) $\frac{16}{\sqrt{6}}$ (4) None

65. Consider the following compounds (A), (B), (C) and (D)


(A)


(B)


(C)


(D)

The order of decreasing reactivity towards hydrolysis by aqueous NaOH is :-

(1) A > B> C > D (2) C > B > D > A

(3) D > A > B > C (4) A > D > B > C

66. Autoreduction process is used in the extraction of:-

(1) Cu & Pb (2) Zn & Hg

(3) Cu & Al (4) Fe & Pb

67. The complex ion which has no d electron:-

(1) $[Fe(CN)_6]^{-3}$ (2) $[Cr(H_2O)_6]^{+3}$

(3) $[Co(NH_3)_6]^{+3}$ (4) $[MnO_4]^-$

68. Which of the following is not a semisynthetic?

(1) Valcanised rubber

(2) Cellulose acetate

(3) Cellulose nitrate

(4) cis-Poly isoprene

69. Which of the following statement is NOT correct regarding schottkey defects :-

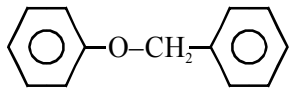
(1) It is a stoichiometric defects

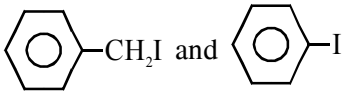
(2) Schottkey defect decreases the density of the substance

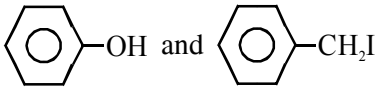
(3) This effect is shown by ionic substane in which there is a large difference in the size of ions

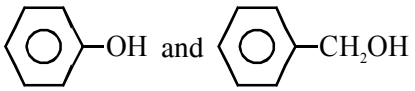
(4) In this effect, number of missing cations and anions are equal

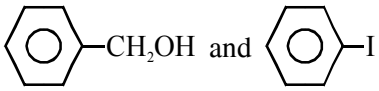
70. The reaction :



(1) 

(2) 

(3) 

(4) 

71. Electrolyte reduction of alumina to aluminium by Hall-Heroult process is carried out :-
(1) In the presence of NaCl
(2) In the presence of fluorite
(3) In the presence of cryolite which forms a melt with lower melting temperature
(4) In the presence of cryolite which forms a melt with higher melting temperature

72. Which of the following carbonyls will have the strongest C–O bond ?
(1) $Fe(CO)_5$ (2) $Mn(CO)_6^+$
(3) $Cr(CO)_6$ (4) $V(CO)_6$

73. Which of the following statements is true :-
(1) Aminoglycosides is act as a bacteriostatic
(2) Sulphacetamide is narrow spectrum antibiotics
(3) Furacine is act as antibiotics
(4) Soframicine is act as antiseptics

74. 0.5N solution of a salt placed between two platinum electrodes 2.0 cm apart and of area of cross section 4.0 cm^2 has a resistance of 25 ohms. Calculate the equivalent conductivity of solution.
(1) $4\Omega^{-1}\ cm^2eq^{-1}$ (2) $8\Omega^{-1}cm^2eq^{-1}$
(3) $40\Omega^{-1}cm^2eq^{-1}$ (4) $16\Omega^{-1}cm^2eq^{-1}$

75. The weakest nucleophile in an aprotic solvent is:-
(1) I^- (2) Br^- (3) Cl^- (4) F^-

76. Extraction of zinc from zinc blende is achieved by :-
(1) electrolytic reduction
(2) roasting followed by reduction with carbon
(3) roasting followed by reduction with another metal
(4) roasting followed by self-reduction

77. Hypo is used in photography because it is :-
(1) A strong reducing agent
(2) A strong oxidising agent
(3) A strong Complexing agent
(4) Photo sensitive Compound

78. Find out ionisation constant of a weak acid (HA) in terms of $\wedge_m^\circ$ and $\wedge_m^c$? (Given "α" can not be ignored w.r.t. 1) :-

(1) $K_a = \dfrac{C\wedge_m^\circ}{(\wedge_m^c - \wedge_m^\circ)}$ (2) $K_a = \dfrac{C(\wedge_m^c)^2}{\wedge_m^\circ(\wedge_m^\circ - \wedge_m^c)}$

(3) $K_a = \dfrac{C(\wedge_m^\circ)^2}{\wedge_m^\circ(\wedge_m^\circ - \wedge_m^c)}$ (4) None of these

79. The edge length of unit cell of a metal, having molecular weight 75 gm/mole is 5Å, which crystallizes in cubic lattice. If the density is 2gm/c.c., then find the radius of metal atom. ($N_A = 6\times10^{23}$) :-
(1) 2.16 Å (2) 5.65 Å
(3) 6.92 Å (4) None of these

80. When propanoic acid is treated with aq. sodium bicarbonate, carbondioxide is liberated. The carbon of the carbondioxide comes from :-
(1) Methyl group
(2) Carboxylic group
(3) Methylene group
(4) Sodium bicarbonate

81. When ammonium nitrate is heated, the gas is :-
(1) Laughing gas
(2) Turns lime water milky
(3) Acidic
(4) Basic

82. Cu^{2+} and Cd^{2+} are distinguished through formation of complex $[Cu(CN)_4]^{2-}$ and $[Cd(CN)_4]^{2-}$ when H_2S gas is passed :

(1) There is yellow precipitate due to CdS

(2) There is precipitation of CuS and CdS together

(3) There is black precipitate due to CuS

(4) There is blue precipitate due to CuS

83. For following cell $A\ell|A\ell^{+3}\|Fe^{+2}|Fe$, calculate $\Delta G°$ at 298 K

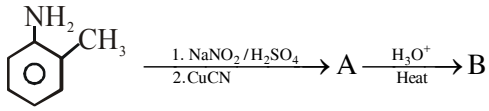
Given : $E^{\circ}_{A\ell^{+3}/A\ell} = -1.66$ V ; 1F = 96500 C

$E^{\circ}_{Fe^{+2}/Fe} = -0.44$ V.

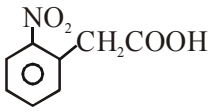
(1) – 700.01 kJ (2) – 706.38 kJ

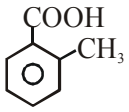
(3) – 965.01 kJ (4) None of these

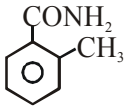
84. Consider the following sequence of reactions

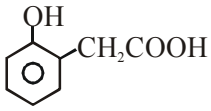


The product (B) is

(1) 

(2) 

(3) 

(4) 

85. Reaction of  with a mixture of Br_2 and KOH gives $R - NH_2$ as the main product. The intermediates involved in this reaction are :–

(a) 

(b) R – NH – Br

(c) R – N = C = O

(d) 

(1) a, b (2) a, d

(3) a, c (4) a, b, d

86. Aq. Fe(II) combine with which of the following & give a brown complex.

(1) N_2O (2) NO

(3) N_2O_3 (4) NO_2

87. The formation of micelles takes place only above:

(1) Inversion temperature

(2) Boyle temperature

(3) Critical temperature

(4) Kraft temperature

88. $A_2 + B_2 \rightarrow 2AB$

Rate = $K[A_2]^x [B_2]^y$

S.No.	$[A_2]$	$[B_2]$	Rate
1	0.2	0.2	0.04
2	0.1	0.4	0.04
3	0.2	0.4	0.08

Order of reaction with respect to A_2 and B_2 are respectively :-

(1) x = 1, y = 1

(2) x = 2, y = 0

(3) x = 2, y = 1

(4) None of these

89. Propionaldehyde on treatment with dilute NaOH gives :-

(1) $CH_3CH_2COOCH_2CH_2CH_3$

(2) $CH_3CH_2CH(OH)CH(CH_3)CHO$

(3) $CH_3CH_2CHOHCH_2CH_2CHO$

(4) $CH_3CH_2COCH_2CH_2CHO$

90. A compound of mol. wt. 180 gm is acetylated to give a compound of mol. wt. 390. The number of amino groups in the compound are :-

(1) 2 (2) 4

(3) 5 (4) 6

91. Which sugarcane was originaly grown in north India but had poor sugar content and yield.
(1) *Saccharum barberi*
(2) *Saccharum spontaneum*
(3) *Saccharum robustum*
(4) *Saccharum officinarum*

92. Species which are morphologically similar but do not interbreed normally, are known as :-
(1) Sibling species (2) Polytypic species
(3) Race (4) Demes

93. Read the following four statement (a – d) :
(a) Fisheries include rearing, catching and selling of fishes, mollusca etc.
(b) More then 70 percent of the world livestock population is in India.
(c) Milk yield is primarily dependent on the quality of breeds in the farm.
(d) The feeding of cattle should be carried out in scientific manner.
How many of the above statements are right ?
(1) Four (2) One (3) Two (4) Three

94. Match the column-A with Column-B : -

Column-A		Column-B	
(A)	Fusion of male and female gametes	(i)	Parturition
(B)	Attachment of blastocyst to the uterine wall	(ii)	Gestation
(C)	Embryonic development	(iii)	Fertilization
(D)	Delivery of the baby	(iv)	Implantation

(1) A-iv, B-ii, C-i, D-iii (2) A-iii, B-iv, C-i, D-iii
(3) A-ii, B-iv, C-iii, D-i (4) A-iii, B-iv, C-ii, D-i

95. The process in which egg cell of female gametophyte is responsible to form a embryo without fertilization is ?
(1) Parthenogenesis (2) Parthenocarpy
(3) Apogamy (4) Apospory

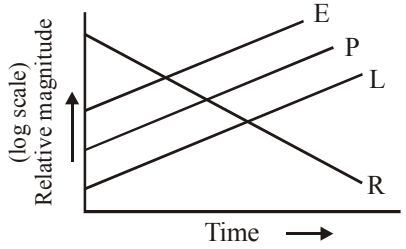
96. In garden pea when yellow and round seeded variety was crossed to non yellow and constricted seeded plant, the F_1 population had yellow and round seeds. A cross of F_1 individuals with non yellow and constricted seeded plants will produce a phenotypic ratio of :-
(1) 9 : 3 : 3 : 1 (2) 1 : 3 : 3 : 1
(3) 1 : 2 : 1 (4) 1 : 1 : 1 : 1

97. The end product, whose addition will check the synthesis of biosynthetic enzyme is known as :-
(1) Aporepressor (2) Co-repressor
(3) Inducer (4) Suppressor

98. Which of the following is not the salient feature of Human genome ?
(1) The human genome contains 3164.7 million nucleotide bases
(2) Less than 2% of the genome codes for proteins
(3) 99.9% nucleotide bases are exactly same in all people
(4) The functions of all discovered genes are known

99. Read the following statements (a-d).
(a) Sequence of inflammatory events is Rubor, Calor, Tumor, Dolar.
(b) Cell mediated immunity is responsible for graft rejection.
(c) Best HLA matching order is Twin > Sibling > Parent > Unrelated donar.
(d) Membrane attack complex (Mac) is associated with complement system.
How many statements are correct :-
(1) One (2) Two (3) Three (4) Four

100. In the following graph, E (Environmental impact), P(world population), L(average standard of living) and (world resources) R interact with each other what is expected, if the world population remain stable but the average standard of living continues to increase :-



(1) Environmental impact will increase without much change in resources.
(2) Environmental impact will not change but resources will deplete.
(3) Environmental impact will increase and resources will deplete.
(4) Environmental impact and state of resources may not show significant change.

101. The IARI, New Delhi has released several vagetable crops. Which crop is not rich in vitamine 'A'.
(1) Bitter gourd (2) Spinach
(3) Pumpkin (4) Carrot

102. Demes are :-
(1) Geographically not isolated
(2) Reproductivally isolated
(3) Genetically similar
(4) Genetically disimilar

103. Consider the following four statements (a-d) and select the option which includes all the correct ones only.
(a) Cross-breeding allows the desirable qualities of two different breeds to be combined.
(b) Honey is the food of high nutritive value and is used in the preparation of cosmetics and polishes of various kinds.
(c) Pisciculture is an industry devoted to the catching processing or selling of fish, shellfish or other aquatic animals.
(d) Inbreeding helps in accumulation of superior genes.
Options :
(1) Statement (b), (c) and (d)
(2) Statement (a) and (d)
(3) Statement (c) and (d)
(4) Statement (a), (c) and (d)

104. Find out correct sequence of menstrual cycle's phase ?
(1) Ovulation, Bleeding phase, Luteal phase
(2) Bleeding phase, ovulation, Postovulatory phase, Progesteronic phase
(3) Menstrual phase, Oestrogenic phase, Ovulation, Secretory phase
(4) Bleeding phase, Ovulation, Oestrogenic phase

105. When transfer of male gametes is near the female gamete through the pollen tube, then the process is known as :-
(1) Autogamy (2) Polysiphonogamy
(3) Xenogamy (4) Siphonogamy

106. What will be the % age of mullatoes in a trihybrid polygenic trait of skin colour in man?
(1) 37% (2) 31%
(3) 50% (4) 18%

107. In DNA fingerprinting :-
(1) A positive identification can be made
(2) Multiple restriction enzyme digests/generate unit fragments
(3) The polymerase chain reaction amplifies fewer DNA
(4) The variability of repeated sequence between two restriction sites is evaluated

108. Select the incorrect match:-
(1) Large holes – Roquefort cheese.
(2) Streptokinase – Clot buster
(3) Glomus – Mycorrhiza
(4) Methanogens – Biogas

109. Primary response which is of ___(A)___ intensity. Subsequent encounter with the same pathogen elicit a __(B)__ intensified __(C)__ response:-

	(A)	(B)	(C)
(1)	High	Low	Anamnestic
(2)	Low	High	Primary
(3)	Low	High	Secondary
(4)	High	Low	Primary

110. Which statement is correct :-
(1) Hydrosphere is reservoir for the gaseous type of cycle
(2) Earth's crust is reservoir for gaesous type of cycle
(3) Pyramid of biomass in sea is also generaly erect
(4) Prey acting as "conduits" for energy transfer across triophic levels

111. Which part would be most suitable for raising virus-free plants for micropropagation ?
(1) Node (2) Bark
(3) Meristem (4) Vascular tissue

112. Mule is a hybrid, which of the following statement is correct :-
(1) Mule is not a species
(2) Mule is a new species
(3) Horse and ass are two populations
(4) Mules are fertile

113. How many of the following statement is/are correct with respect to menstrual cycle ?
(A) The first menstruation begins at puberty and is called menopause
(B) Menstruation only occurs if the released ovum is not fertilised.
(C) During pregnancy all events of the menstrual cycle stop and there is no menstruation
(D) In mammals, menstrual cycles Ceases around 50 years of age
(1) Four (2) Three (3) Two (4) One

114. Match the column–A and B about the embryonic development of human :-

Column-A		Column–B	
(i)	End of one month	(a)	Most of the major organ systems developed
(ii)	End of second month	(b)	Appearance of hair on the head
(iii)	End of three month	(c)	Heart formation
(iv)	During fifth month	(d)	Eye-lids separated
(v)	End of sixth month	(e)	Limbs and digits formation

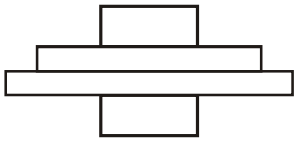
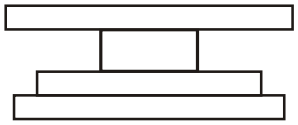
(1) (i) – e, (ii) – b, (iii) – c, (iv) – a, (v) – d
(2) (i) – e, (ii) – c, (iii) – b, (iv) – b, (v) – d
(3) (i) – c, (ii) – e, (iii) – b, (iv) – a, (v) – d
(4) (i) – c, (ii) – e, (iii) – a, (iv) – b, (v) – d

115. W hich one of the following is wrong with respect to pollen grain of flowering plants ?
(1) Two cell pollen grain is known as mature male gametophyte
(2) Pollination of pollen grain generally take place at two called stage
(3) Three cell stage of pollen grain is known as mature male gametophyte
(4) Pollination of pollen grain take place at three cell stage in some plants

116. According to Sutton and Boveri segregation of a pair of factors is because of :-
(1) splitting of chromosomes at anaphase of mitosis
(2) pairing and segregation of homologous chromosomes at Anaphase of Meiosis-I
(3) random arrangement of chromosomes at equator during meiosis-I
(4) random arrangement of chromosomes at equator during mitosis

117. Find the incorrect match :-
(1) VNTR – 11-60 bp
(2) SSR – 15-20 bp
(3) Southern blotting–Nitrocellulose membrane
(4) Western blotting – Protein

118. Which of the following is not related to laryngeal deformity :-
(1) Partial deletion of short arm of 5^{th} chromosome
(2) Gynaecomastia
(3) Cat-Cry-Syndrome
(4) (1) & (3) both

119. If you were to count the number of insects breading on a big tree and number of small birds depending on the insects as also the number of larger birds eating the smaller. What kind of energy pyramid would you get for food chain :-
(1) 
(2) 
(3) 
(4) 

120. Which statements is incorrect :-
(1) An important characterstic of all communities in that their composition and structure constantly change in response to environmental condition.
(2) Establishment of a new biotic community is generally fast
(3) Sec. succession begins in areas where natural biotic communities have been destroyed
(4) Sec. succession occurs in abandoned from lands, burned or cut forests etc.

121. "*Sonalika*" and "*kalyan sona*" developed for green revolution in India are the varieties of :-
(1) Maize (2) Wheat
(3) Rice (4) Brassica

122. Phenomenon of 'Industrial melanism' demonstrates
(1) Natural selection
(2) Geographical isolation
(3) Reproductive isolation
(4) Lamarckism

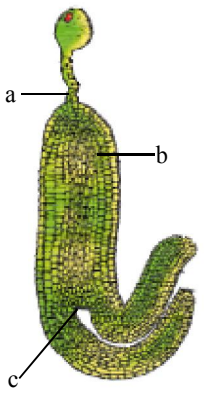
123. Match the column-A with column-B : -

Column-A		Column-B	
(A)	Transfer of sperms into the female genital tract	(i)	Ejaculation
(B)	Sperms released from the seminiferous tubules	(ii)	Semination
(C)	Forceful expulsion of semen from body of male	(iii)	Spermiation
(D)	Liberation of sperms from tests	(iv)	Insemination

(1) A-iv, B-iii, C-ii, D-i (2) A-ii, B-iii, C-i, D-iv
(3) A-iv, B-iii, C-i, D-ii (4) A-iii, B-iv, C-ii, D-i

124. Natural method of contraception include the following ?
(1) Coitus interruptus
(2) Lactational amenorrhea
(3) Periodic abstinance
(4) All of these

125.



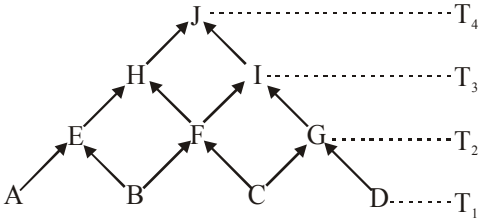
In the above diagram a,b, c represents respectively
(1) Suspensor, Plumule, Radicle
(2) Plumule, Suspensor, Radicle
(3) Radicle, Plumule, Suspensor
(4) Suspensor, Radicle, Plumule

126. In *Drosophila* homozygous red eyed female was mated with white eyed male; a daughter from F_1 generation mated with white-eyed male. The progeny of this second mating will be :-
(1) all males and females have red eyes
(2) all males and females have white eyes
(3) all males have red eyes; all females have white eyes
(4) males and females have red eyes and white eyes in the ratio 1 : 1

127. Khorana synthesized a biologically functional tyrosine t-RNA gene of *E. coli* in 1979. It contains
(1) 77 nucleotide pairs
(2) 207 nucleotide pairs
(3) 312 nucleotide pairs
(4) 333 nucleotide only

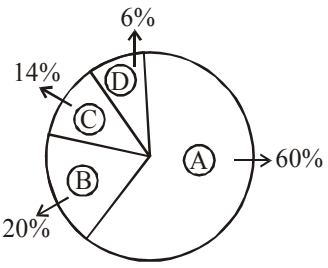
128. If a pregnant woman is suffering from syphilis infection then after delivery which type of antibodies may be present in her neonates :-
(1) Ig M only (2) Ig G only
(3) Ig M and Ig G (4) Ig A and Ig G

129. What can be correct for following food web:-



(1) J is decomposer
(2) C is herbivore
(3) I is scavanger
(4) F is secondary consumer

130. In following diagram various green house gases represents in % which option is correctly explain-



(1) A-CO_2, B-Methane, C-CFC, D-N_2O
(2) A-CH_4, B-CO_2, C-CFC, D-N_2O
(3) A-CFC, B-CO_2, C-N_2O, D-Methane
(4) None

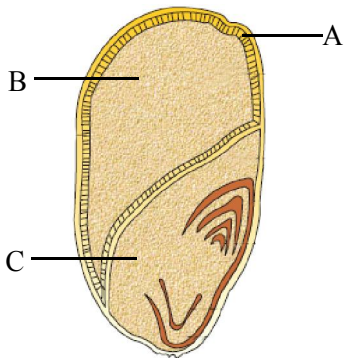
131. Which one of the following is not a biopesticide ?
(1) *Bacillus thuringiensis*
(2) *Nucleopolyhydro virus*
(3) *Trichoderma*
(4) *Agrobacterium*

132. Which statement is correct regarding human fosslis
(1) Fossils of homo neanderthalensis is obtain recently from South Africa
(2) Neanderthal & cro–magnon man lived together for sometime on the earth
(3) Fossils of Australopithecus are obtain from Australia
(4) Homoerectus erectus evolved before homohabilis

133. Which of the following contributes in the formation of seminal plasma :-
(a) Sertoli cells (b) Seminal vesicle
(c) Spermatogonia (d) Leydig cells
(e) Bulbourethral gland (f) Prostate gland
(1) b, c, e, f (2) a, b, c, f
(3) b, c, d, e, f (4) only b, e, f

134. Enbryo develops at the which end of embryosac ?
(1) Mircopylar end (2) Chalazal end
(3) Funiculus (4) Outside the ovary

135.



In above diagram a, b, c represent respectively :-
(1) Endosperm, Scutellum, Aleurone layer
(2) Endosperm, Plumule, Aleurone, layer
(3) Scutellum, Plumule, Endosperm
(4) Aleurone layer, Endosperm, Scutellum

136. Two linked genes a and b show 40% recombination. The individuals of a dihybrid cross between ++/++ X ab/ab shall produce gametes as
(1) + + 80 : ab 20
(2) + + 50 : ab 50
(3) + + 40 : ab 40 : + a 10 : + b 10
(4) + + 30 : ab 30 : + a 20 : + b 20

137. Find out the incorrect statement with respect to PCR.
(1) Polymerase chain reaction was developed by Kary Mullis
(2) The DNA polymerase used in PCR is thermostable
(3) The denaturation of DNA is carried out at 94°C
(4) The primers used in PCR are oligonucleotides and primer annealing occurs at 90°C

138. Which antibody acts as an antigen receptor for B-cell ?
(1) Ig E (2) Ig A
(3) Ig G (4) None of these

139. Large Woody Vines are more commonly found in
(1) Temperate forests
(2) Mangroves
(3) Tropical rainforests
(4) Alpine forests

140. Biological control methods are based on which ecological principle ?
(1) Parasitism
(2) Over exploitation of pest
(3) Predation
(4) ability of pest

141. Select the incorrect statement :-
(1) Lichens can be used as industrial pollution indicators.
(2) Evolution is a directed process in the sense of determinism.
(3) Evolution is a stochastic process based on chance event in nature and chance mutation in the organism
(4) Similarities in proteins and genes performing a given function among diverse organisms give clues to common ancestory

142. Darwin called Sudden changes in the animals as :-
(1) Sport (2) Mutation
(3) Mutagen (4) Pangene

143. In the 34 day human ovarian cycle, the ovulation takes place typically on :-
(1) day 1 of the cycle (2) day 5 of the cycle
(3) day 20 of the cycle (4) day 14 of the cycle

144. Which of the followign event not involved in post fertilisation
(1) Endosperm & Embryo development
(2) Maturation of ovule into seed
(3) Maturation of ovary into fruit
(4) Degeneration of nucellus

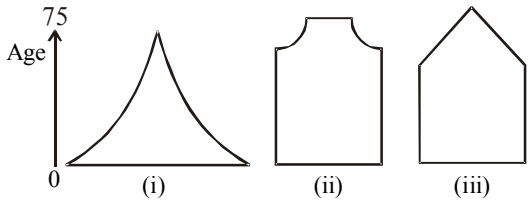
145. A testcross is done to find out :-
(1) the genotype of an individual by examining the phenotypes of its offsrpings from a particular mating
(2) the genotype of an individual for testing for its DNA content
(3) whether a mating is fertile
(4) whether two species can interbreed

146. In birds the females are :-
(1) XX (2) ZW (3) XO (4) YY

147. A long lasting remedy, against ADA deficiency in patients can be :-
(1) Periodic infusion of genetically engineered lymphocytes in patients carrying ADA gene
(2) Introduction of ADA gene into the cells at early embryonic stages
(3) Bone marrow transplantation in early childhood
(4) Enzyme replacement therapy in early childhood

148. Which type of immunity is not promoted by T_H– cell :-
(1) Passive immunity (2) Cellular immunity
(3) Humoral immunity (4) 2 & 3 both

149. Age structure diagram (i, ii, iii) for three population are shown below. They represent :



(1) (i) Declining population
(ii) Stable population
(iii) Growing population
(2) (i) Expontial growth
(ii) Inteterminate growth
(iii) Stationary population
(3) (i) Growing population
(ii) Stationary population
(iii) Declining population
(4) (i) Growing population
(ii) Stable population
(iii) Stable population

150. Regarding life history variations. Which among the following is incorrect
(1) Breeding once in life time – Bamboo
(2) Breeding many times in life time – Birds
(3) Production of large number of small size offspring – mammals
(4) Production of small number of large size organisms – Birds

151. Select the incorrect statements :-
(A) The essence of darwinian theory of evolution in natural selection
(B) Evolution is a directed process in the sense of determinism
(C) The geological history of earth is not related with the biological history of earth
(D) During evolution the rate of appearance of new forms is linked to the life cycle
(1) A & B (2) B & C
(3) A & D (4) B & D

152. How many fishes in the list given below are marine?
Catla, Pomfret, Common carp, Silver carp, Hilsa, Rohu, Cod, Mackerel, Salmon, Mrigal
(1) Six (2) Three
(3) Four (4) Five

153. Correct order of spermatogenesis is :-
(1) Spermatid→spermatogonia → spermatocytes → spermatozoa
(2) Spermatogonia → primary spermatocyte → secondary spermatocyte → spermatid → spermatozoa
(3) Primary spermatocyte → spermatogonia → secondary spermatocytes → spermatozoa → spermatid
(4) Spermatogonia → Secondary spermatocyte → primary spermatocyte → spermatid → spermatozoa

154. Which of the following statements are correct?
(1) The body of ovule fuses with funicle in the region called chalaza
(2) Polar nuclei are situated in the central cell above the egg appratus
(3) Cliestogamous flowers are invariable autogamous
(4) Pollen tube releases the two male gamate in to cytoplasm of egg cell

155. A tobacco plant heterozygous for recessive trait of albinisim is selfed and 1200 seeds are obtained. How many seedlings obtained from such seeds will have parents genotype ?
(1) 100 (2) 300 (3) 600 (4) All

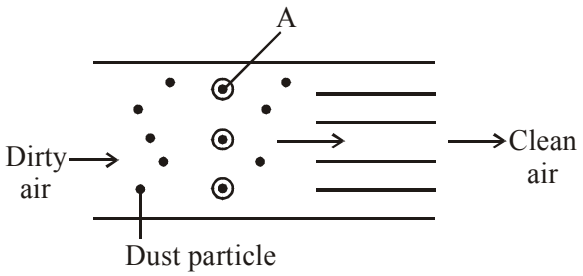
156. A woman with two genes, one for haemophilia and a gene for colour blindness on one of the 'X' chromosomes marries a normal man, Progeny will be :-
(1) All sons and daughters haemophillic and colour blind.
(2) Haemophilic and colour blind daughters
(3) 50% haemophilic colour-blind sons and 50% normal sons
(4) 50% haemophilic daughters and 50% colour-blind daughters.

157. Match the following with respect to vector and the length of DNA fragment, which it can carry.

Column–I		Column–II	
(A)	λ–phase	(i)	300 kbp
(B)	BAC	(ii)	10 kbp
(C)	Cosmid	(iii)	23 kbp
(D)	Phagemid	(iv)	45 kbp

(1) A–iii, B–i, C–iv, D–ii
(2) A–iv, B–i, C–iii, D–ii
(3) A–iv, B–ii, C–iii, D–i
(4) A–iii, B–ii, C–iv, D–i

158. Which of the following is/are not a temporary used device :-
(a) Heart lung machine (b) Pacemaker
(c) Defibrilator (d) Vascular graft
(e) haemodilyser
(1) a, b, c, e (2) a, c, d, e
(3) a, c, e (4) b, d

159.


In following diagram A is a
(1) Discharge corona
(2) Negative charged wire
(3) Lime spray
(4) Collection plate grounded

160. Red data book contain information about :-
(1) Red coloured insects
(2) Red eyed birds
(3) Red coloured fishes
(4) Endangered plant and animal

161. What is the main key concept of Darwinian theory of evolution :-
(A) Natural selection (B) Branching descent
(C) Mutation (D) Genetic variation
(1) A,C,D (2) A,B
(3) A,B,C,D (4) A,D

162. Which type of breeding exposes harmful recessive genes :-
(1) Out – crossing
(2) In breeding
(3) Cross – breeding
(4) Interspecific hybridisation

163. Which hormone level reaches peak during luteal phase of menstrual cycle ?
(1) Estrogen
(2) Progesterone
(3) Luteinizing hormone
(4) FSH

164. If aleurone layer of angiosperm contain 27 chromosome the ovary wall will contain :-
(1) 18 (2) 36 (3) 24 (4) 12

165. What is it that assorts indepedently, in keeping with the law of independent assortment ?
(1) sister chromatids
(2) homologus chromosomes
(3) heterologous chromosomes
(4) different genes on the same chromosome

166. In a certain plant, red colour flower (R) is dominant over white colour flower (r). When a heterozygous Rr plant is selfed, 64 offsprings are obtained. The number of white offsprings
(1) 1 (2) 16 (3) 32 (4) 48

167. Arrange the steps involved in Humulin production in a sequential manner :-
(a) Screening of the recombinant host cells
(b) Isolation of donor or DNA segment
(c) Introduction of rDNA in the recipient organism
(d) Formation of recombinant DNA
(e) Production of multiple copies of rDNA
(1) d, c, a, e, b (2) a e, c, b, d
(3) b, d, e, c, a (4) c, a, e, d, b

168. Which of the following is correct matching :-
(A) Skin (B) Mucous coating
(C) Acid in stomach (D) Leukocytes
(E) Interferon (F) Natural killer cell
(G) PMNL-Neutrophils (H) Macrophages
(I) Tear from eyes
(i) Cellular barrier = D, F, G, H
(ii) Physiological barrier = C, I
(iii) Cytokine barrier = E
(iv) Physical barrier = A, B
(1) i, iii only (2) iii, iv only
(3) i, ii, iii, iv (4) None of these

169. In following food chain if 1000 Kcal energy present in producer then the amount of energy in Top consumer is :-

Grass → Grasshopper → Lizard → Hawk
1000 Kcal

(1) 1000 Kcal (2) 100 Kcal
(3) 10 Kcal (4) 1 Kcal

170. Planting of trees, shurbs and othres in between crop plant for commercial exploitation and stabilization of soil is :-
(1) Taungya system
(2) Agroforestry
(3) Social forestry
(4) Production plantation

171. A process in which heritable variations enabling better survival are enabled to reproduce and leave greater number of progeny is called :-
(1) Genetic drift (2) Nature selection
(3) Founder effect (4) Both 1 & 3

172. Which of the following are important components of poultry farm management ?
(1) Hygiene
(2) Safe farm conditions
(3) Proper feed and water
(4) All the above

173. Choose the correct option for filling up the blanks :-
The human male ejaculates about ____ million sperms during a coitus of which, for normal fertility, at least _____ percent sperms must have normal shape and size and least _____ percent of then must show vigorous motility.
(1) 100–200, 40, 60 (2) 200–300, 60, 40
(3) 300–400, 50, 30 (4) 500, 70, 70

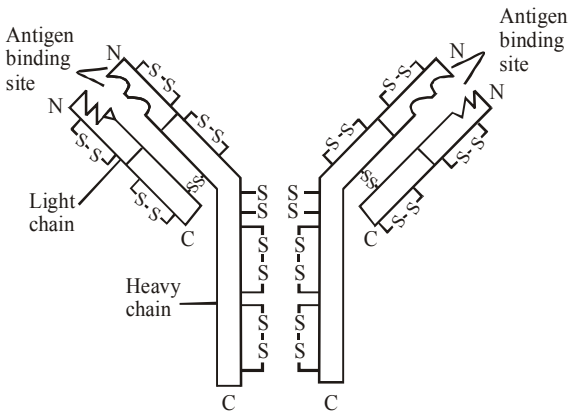
174. How many seed in the list given below are endospermic seed ? castor, pea, beans, ground nut, coconut, wheat, rice, maize.
(1) four (2) five
(3) six (4) eight

175. A dihybrid condition is :-
(1) tt Rr (2) Tt rr
(3) tt rr (4) Tt Rr

176. Baldness in humans is a sex influenced trait & the gene is carried on autosomes. If both the parents are heterozygous for this gene, what will be the probability of getting normal daughters & normal sons ?
(1) $\frac{1}{4}, \frac{1}{4}$ (2) $\frac{3}{4}, \frac{1}{4}$
(3) $\frac{3}{4}, \frac{3}{4}$ (4) $\frac{1}{4}, \frac{3}{4}$

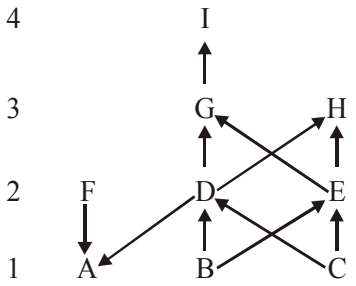
177. In Honolulu technique of cloning :-
(1) Blastomeres are separated
(2) Donor & recipient cells are fused
(3) Culture medium is used to stimulate development/division
(4) Electric shock is used to stimulate development/division

178. Which of the following is incorrect about given diagramme :-



(a) Gives antigenic stimulation.
(b) T-cells themselves do not secrete but help B-cell produce them.
(c) Ionic bond present.
(d) H_2 L_2 molecule.
(e) glycoprotein molecule.
(1) a, b, d, e (2) b, d, e,
(3) a, c (4) a, b, c, d, e

179. In following foof web nine species (A to I) present in four trophic levels. Which statement about this food web is correct :-



(1) Species A is a herbivore
(2) Species D is a carnivore
(3) Species G is an omnivore
(4) Species H is a predator

180. An ecosystem is represented by a tree. An earthworm and bird are all part of this ecosystem. They differ from each other with respect to :-
(1) Habitat (2) Niche
(3) Abiotic component (4) None

SPACE FOR ROUGH WORK