SATISH SCIENCE ACADEMY

Where We Shape The Career **Time :**

Date : **MHTCET MOCK TEST 03** **No. MCQ**

1. Two particles A and B initially at rest move towards each other under a mutual force of attraction. The speed of centre of mass at the instant when the speed of A is v and the speed of B is 2v is :

(a) v (b) Zero
(c) 2 v (d) 3 v /2

2. A vessels is filled with an ideal gas at a pressure of 10 *atmospheres* and temperature 27°*C*. Half of the mass of the gas is removed from the vessel and temperature of the remaining gas is increased to 87°*C*. The pressure of the gas in the vessel will be

(a) 5 *atm* (b) 6 *atm*
(c) 7 *atm* (d) 8 *atm*

3. The temperature at which the kinetic energy of oxygen molecules becomes double than its value at 27 °C is

(a) 927°C (b) 327°C
(c) 1227 O (d) 627°C

4. Ratio of kinetic energy and rotational energy in the motion of a disc is

[CPMT 1996]

(a) 1 : 1 (b) 2 : 7
(c) 1 : 2 (d) 3 : 1

5. A ball of radius 11 *cm* and mass 8 *kg* rolls from rest down a ramp of length 2*m*. The ramp is inclined at 35^o to the horizontal. When the ball reaches the bottom, its velocity is (sin $35^o = 0.57$)

(a) 2 *m/s* (b) 5 *m/s*
(c) 4 *m/s* (d) 6 *m/s*

6. A thin uniform circular ring is rolling down an inclined plane of inclination 30° without slipping. Its linear acceleration along the inclined plane will be

(a) $g/2$ (b) $g/3$ (c) $g/4$ (d) $2g/3$

7. In Young's experiment, light of wavelength 4000 Å is used to produce bright fringes of width 0.6 *mm*, at a distance of 2 meters. If the whole apparatus is dipped in a liquid of refractive index 1.5, then fringe width will be

(a) 0.2 *mm* (b) 0.3 *mm*
(c) 0.4 *mm* (d) 1.2 *mm*

8. A long straight wire of resistance *R*, radius *a* and length *l* carries a constant current *I*. The Poynting vector for the wire will be

(a) $\frac{IR}{2\pi al}$ (b) $\frac{IR^2}{al}$
(c) $\frac{I^2R}{al}$ (d) $\frac{I^2R}{2\pi al}$

9. The frequency order for γ-rays (B), X-rays (A), *UV* rays(c) is

(a) $B > A > C$ (b) $A > B > C$
(c) $C > B > A$ (d) $A > C > B$.

10. The length of the compound microscope is 14 *cm*. The magnifying power for relaxed eye is 25. If the focal length of eye lens is 5 *cm*, then the object distance for objective lens will be

(a) 1.8 *cm* (b) 1.5 *cm*
(c) 2.1 *cm* (d) 2.4 *cm*

11. A rod of length 10 cm lies along the principal axis of a concave mirror of focal length 10 cm in such a way that its end closer to the pole is 20 cm away from the mirror. The length of the image is

(a) 10 cm (b) 15 cm
(c) 2.5 cm (d) 5 cm.

12. Carbon, silicon and Germanium atoms have four valence electrons each. Their valence and conduction band are separated by energy band gaps represented by $(E_g)_C$. $(E_g)_{Si}$ and $(E_g)_{Ge}$ respectively. Which one of the following relationship is true in their case

(a) $(E_g)_C > (E_g)_{Si}$ (b) $(E_g)_C = (E_g)_{Si}$
(c) $(E_g)_C < (E_g)_{Ge}$ (d) $(E_g)_C < (E_g)_{Si}$

13. An *n*-type and a *p*-type silicon semiconductor can be obtained by doping pure silicon with

(a) indium and sodium respectively

(b) boron and arsenic respectively

(c) arsenic and boron respectively

(d) sodium and magnesium respectively.

14. Mark the correct statement

(a) Nuclei of different elements can have the same number of neutrons
(b) Every element has only two stable isotopes
(c) Only one isotope of each element is stable

(d) All isotopes of every element are radioactive

15. The energy released in the fission of 1 kg of $_{92}U^{235}$ is (Energy per fission = 200MeV)
(a) 5.1×10^{26} eV (b) 5.1×10^{26} J
(c) 8.2×10^{13} J (d) 8.2×10^{13} MeV

16. When the momentum of a proton is changed by an amount P_0, the corresponding change in the de-Broglie wavelength is found to be 0.25%. Then, the original momentum of the proton was
(a) p_0 (b) 100 p_0
(c) 400 p_0 (d) 4 p_0

17. X – rays and γ – rays of the same energies may be distinguished by
(a) Their velocity (b) Their ionising power
(c) Their intensity (d) Method of production

18. The coil of a.c. generator has 100 turns, each of cross. sectional area 2 m^2. It is rotating at constant angular speed 30rad/s, in a uniform magnetic field of 2×10^{-2} T. If the total resistance of the circuit is 600Ω then maximum power dissipated in the circuit is
(a) 6 W (b) 9 W
(c) 12 W (d) 24 W

19. For a transformer, the turns ratio is 3 and its efficiency is 0.75 . The current flowing in the primary coil is 2 A and the voltage applied to it is 100 V. Then the voltage and the current flowing in the secondary coil are respectively.
(a) 150 V, 1.5 A (b) 300 V, 0.5 A
(c) 300 V, 1.5 A (d) 150 V, 0.5 A

20. If a current of 3.0 amperes flowing in the primary coil is reduced to zero in 0.001 second, then the induced e.m.f. in the secondary coil is 15000 volts. The mutual inductance between the two coils is
(a) 0.5 henry (b) 5 henry
(c) 1.5 henry (d) 10 henry

21. The number of turns in the coil of an ac generator is 5000 and the area of the coil is 0.25 m^2. The coil is rotated at the rate of 100 *cycles/sec* in a magnetic field of 0.2 W/m^2. The peak value of the emf generated is nearly
(a) 786 *kV* (b) 440 *kV*
(c) 220 *kV* (d) 157.1 *kV*

22. A line passing through places having zero value of magnetic dip is called
(a) Isoclinic line (b) Agonic line
(c) Isogonic line (d) Aclinic line

23. A coil is placed perpendicular to a magnetic field of 5000 T. When the field is changed to 3000 T in 2 s, an induced emf of 22 V is produced in the coil. If the diameter of the coil is 0.02 m, then the number of turns in the coil is :
(a) 7 (b) 70
(c) 35 (d) 140

24. Magnetic effect of current was discovered by
(a) Faraday (b) Oersted
(c) Ampere (d) Bohr

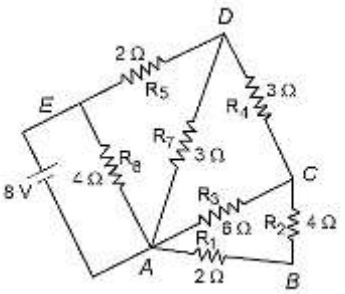
25. The resultant magnetic moment of neon atom will be
(a) Infinity (b) μ_B
(c) Zero (d) $\mu_B/2$

26. Two to roads 1 and 2 have total number of turns 200 and 100 respectively with average radii 40 cm and 20 cm respectively. If they carry same current i, the radio of the magnetic fields along the two loops is
(a) 1:1 (b) 4:1
(c) 2:1 (d) 1:2

27. The resistance of 1 *A* ammeter is 0.018 Ω. To convert it into 10 *A* ammeter, the shunt resistance required will be
(a) 0.18 Ω (b) 0.0018 Ω
(c) 0.002 Ω (d) 0.12 Ω

28. Given below are two statements : One is labelled as Assertion A and the other is labelled as Reason R.
Assertion A : For measuring the potential difference across a resistance of 600 Ω, the voltmeter with resistance 1000 Ω will be preferred over voltmeter with resistance 4000 Ω.
Reason R : Voltmeter with higher resistance will draw smaller current than voltmeter with lower resistance.
In the light of the above statements, choose the most appropriate answer from the options given below.
(a) A is not correct but R is correct
(b) Both A and R are correct and R is the correct explanation of A
(c) Both A and R are correct but R is not the correct explanation of A
(d) A is correct but R is not correct

29.



The current flowing through R_2 is :
(a) $\frac{2}{3}$ A (b) $\frac{1}{2}$ A

(c) $\frac{1}{3}$ A (d) $\frac{1}{4}$ A

30. Two infinite plane parallel sheets separated by a distance d have equal and opposite uniform charge densities σ. Electric field at a point between the sheets is

(a) Zero

(b) $\frac{\sigma}{\varepsilon_0}$

(c) $\frac{\sigma}{2\varepsilon_0}$

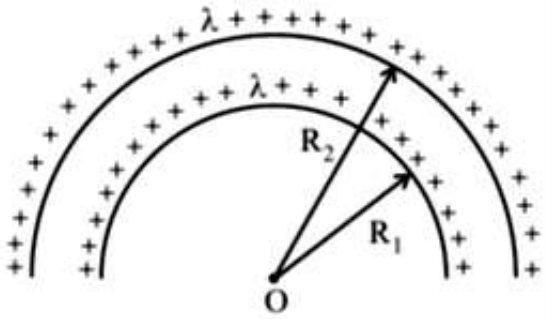
(d) Depends upon the location of the point

31. In bringing an electron towards another electron, the electrostatic potential energy of the system

(a)becomes zero (b)increases

(c)decreases (d)remains same

32. The electric potential at the centre of two concentric half rings of radii R_1 and R_2, having same linear charge density λ, is



(a) $\frac{2\lambda}{\in_0}$ (b) $\frac{\lambda}{2\in_0}$

(c) $\frac{\lambda}{4\in_0}$ (d) $\frac{\lambda}{\in_0}$

33. Which two of the given transverse waves will give stationary waves when get superimposed

$z_1 = a\cos(kx - \omega t)$ .....(A)

$z_2 = a\cos(kx + \omega t)$ .....(B)

$z_3 = a\cos(ky - \omega t)$ .....(C)

(a) A and B (b) A and C

(c) B and C (d) Any two

34. A closed organ pipe (closed at one end) is excited to support the third overtone. It is found that air in the pipe has

(a) three nodes and three antinodes

(b) three nodes and four antinodes

(c) four nodes and three antinodes

(d) four nodes and four antinodes

35. To propagate both longitudinal and transverse waves, a material must have

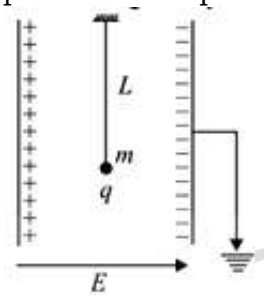
(a) bulk and shear moduli

(b) only bulk modulus

(c) only shear modulus

(d) Young's and bulk modulus.

36. A simple pendulum of length L is placed between the plates of a parallel plate capacitor having electric field E, as shown in figure. Its bob has mass m and charge q. The time period of the pendulum is given by:



(a) $2\pi\sqrt{\frac{L}{(g+\frac{qE}{m})}}$ (b) $2\pi\sqrt{\frac{L}{\sqrt{g^2-\frac{q^2E^2}{m^2}}}}$

(c) $2\pi\sqrt{\frac{L}{(g-\frac{qE}{m})}}$ (d) $2\pi\sqrt{\frac{L}{\sqrt{g^2+(\frac{qE}{m})^2}}}$

37. If the length of a simple pendulum is increased by 2%, then the time period

(a) increases by 1%

(b) decreases by 1%

(c) increases by 2%

(d) decreases by 2%.

38. A simple pendulum is suspended from the roof of a trolley which moves in a horizontal direction with an acceleration a, then the time period is given by $T = 2\pi\sqrt{(l/g)}$, where g is equal to

(a) g (b) $g - a$

(c) $g + a$ (d) $\sqrt{(g^2 + a^2)}$

39. When heat energy of 1500 *Joules*, is supplied to a gas at constant pressure $2.1 \times 10^5 N \rightleftarrows / \rightleftarrows m^2$, there was an increase in its volume equal to $2.5 \times 10^{-3} m^3$. The increase in internal energy of the gas in Joules is

(a) 450 (b) 525

(c) 975 (d) 2025

40. One mole of O_2 gas having a volume equal to 22.4 *litres* at 0^oC and 1 atmospheric pressure in compressed isothermally so that its volume reduces to 11.2 *litres*. The work done in this process is

(a) 1672 .5 J (b) 1728 J

(c) –1728 J (d) –1572 .5 J

41. Two thermometers are used to record the temperature of a room. If the bulb of one is wrapped in wet hanky

(a) The temperature recorded by both will be same

(b) The temperature recorded by wet-bulb thermometer will be greater than that recorded by the other

(c) The temperature recorded by dry-bulb thermometer will be greater than that recorded by the other

(d) None of the above

42. The volume of a metal sphere increases by 0.24% when its temperature is raised by 40°*C*. The coefficient of linear expansion of the metal is ..... °*C*

(a) 2×10^{-5} (b) 6×10^{-5}

(c) 2.1×10^{-5} (d) 1.2×10^{-5}

43. An object of mass m is suspended at the end of a massless wire of length L and area of cross-section, A. Young modulus of the material of the wire is Y. If the mass is pulled down slightly its frequency of oscillation along the vertical direction is

(a) $f = \frac{1}{2\pi}\sqrt{\frac{mL}{YA}}$ (b) $f = \frac{1}{2\pi}\sqrt{\frac{YA}{mL}}$

(c) $f = \frac{1}{2\pi}\sqrt{\frac{\mathrm{YL}}{\mathrm{mA}}}$ (d) $f = \frac{1}{2\pi}\sqrt{\frac{mA}{YL}}$

44. Iceberg floats in water with part of it submerged. What is the fraction of the volume of iceberg submerged if the density of ice is $\rho_i = 0.917$ g cm^{-3} ?

(a) 0.458 (b) 0

(c) 0.917 (d) 1

45. A soap bubble assumes a spherical surface. Which of the following statement is wrong

(a) The soap film consists of two surface layers of molecules back to back

(b) The bubble encloses air inside it

(c) The pressure of air inside the bubble is less than the atmospheric pressure; that is why the atmospheric pressure has compressed it equally from all sides to give it a spherical shape

(d) Because of the elastic property of the film, it will tend to shrink to as small a surface area as possible for the volume it has enclosed

46. A spherical planet far out in space has a mass M_0 and diameter D_0. A particle of mass m falling freely near the surface of this planet will experience an acceleration due to gravity which is equal to

(a) GM_0/D_0^2 (b) $4mGM_0/D_0^2$

(c) $4GM_0/D_0^2$ (d) GmM_0/D_0^2

47. If the total energy transferred to a surface in time t is 6.48×10^5 J, then the magnitude of the total momentum delivered to this surface for complete absorption will be :

(a) 2.46×10^{-3} kg m/s

(b) 2.16×10^{-3} kg m/s

(c) 1.58×10^{-3} kg m/s

(d) 4.32×10^{-3} kg m/s

48. A particle of mass m is moving in a straight line with line with momentum p. Starting at time $t = 0$, a force $F = kt$ acts in the same direction on the moving particle during time interval T so that its momentum changes from p to $3p$. Here k is a constant. The value of T is :

(a) $2\sqrt{\frac{k}{p}}$ (b) $2\sqrt{\frac{p}{k}}$

(c) $\sqrt{\frac{2k}{p}}$ (d) $\sqrt{\frac{2p}{k}}$

49. A body of mass m is suspended from a string of length l. What is minimum horizontal velocity that should be given to the body in its lowest position so that it may complete one full revolution in the vertical plane with the point of suspension as the centre of the circle

(a) $v = \sqrt{2\,\mathrm{lg}}$ (b) $v = \sqrt{3\,\mathrm{lg}}$

(c) $v = \sqrt{4\,\mathrm{lg}}$ (d) $v = \sqrt{5\,\mathrm{lg}}$

50. The maximum range of a gun on horizontal plane is 16 km. If $g = 10$ m s^{-2}, then muzzle velocity of a shell is

(a) 160 m s^{-1} (b) $200\sqrt{2}$ m s^{-1}

(c) 400 m s^{-1} (d) 800 m s^{-1}

51. The number of significant figures in 6.02×10^{23} is

(a) 23 (b) 3

(c) 4 (d) 26

52. What is the mass ratio of ethylene glycol ($C_2H_6O_2$, molar mass = 62 g/mol) required for making 500 g of 0.25 molal aqueous solution and 250 mL of 0.25 molar aqueous solution ?

(a) 1 : 1 (b) 3: 1

(c) 2 : 1 (d) 1 : 2

53. The density of neutrons is of the order

(a) $10^3 kg/cc$ (b) $10^6 kg/cc$

(c) $10^9 kg/cc$ (d) $10^{11} kg/cc$

54. Which electronic level would allow the hydrogen atom to absorb a photon but not to emit a photon

(a) $3s$ (b) $2p$

(c) $2s$ (d) $1s$

55. Which type of bonding exists in Li_2O and CaF_2 respectively

(a) Ionic, ionic (b) Ionic, covalent
(c) Covalent, ionic (d) Coordinate, ionic

56. Covalent molecules are usually held in a crystal structure by

(a) Dipole-dipole attraction
(b) Electrostatic attraction
(c) Hydrogen bonds
(d) Vander Waal's attraction

57. If 1 *M* and 2.5 *litre NaOH* solution is mixed with another 0.5 *M* and 3 *litre NaOH* solution, then molarity of the resultant solution will be

(a) 1.0 *M* (b) 0.73 *M*
(c) 0.80 *M* (d) 0.50 *M*

58. If 3 *gm* of glucose (*mol. wt.* 180) is dissolved in 60 *gm* of water at 15^oC. Then the osmotic pressure of this solution will be

(a) 0.34 atm (b) 0.65 atm
(c) 6.57 atm (d) 5.57 atm

59. A 0.2 molal aqueous solution of a weak acid (*HX*) is 20% ionised. The freezing point of this solution is (Given $K_f = 1.86^oC/m$ for water)

(a) -0.31^oC (b) -0.45^oC
(c) -0.53^oC (d) -0.90^oC

60. An element (atomic mass $=100g/mol$) having *bcc* structure has unit cell edge 400 *pm*. The density of element is

(a) 7.289 g/cm^3 (b) 2.144 ycm^3
(c) 10.376 g/cm^3 (c) 5.188 ycm^3 (*1996*)

61. Select a ferromagnetic material from the following.

(a) Dioxygen (b) Chromium(IV) oxide
(c) Benzene (d) Dihydrogen monoxide

62. A 20litre container at 400 *K* contains $CO_{2(g)}$ at pressure 0.4 atm and an excess of *SrO* (neglect the volume of solid *SrO*). The volume of the container is now decreased by moving the movable piston fitted in the container. The maximum volume of the container, when pressure of CO_2 attains its maximum value, will be (Given that: $SrCO_{3(s)} \rightleftharpoons SrO_{(s)} + CO_{2(g)}$, $K_p = 1.6atm$)

(a) 10litre (b) 4litre
(c) 2litre (d) 5litre

63. Given the reaction between 2 gases represented by A_2 and B_2 to give the compound $AB_{(g)}$.

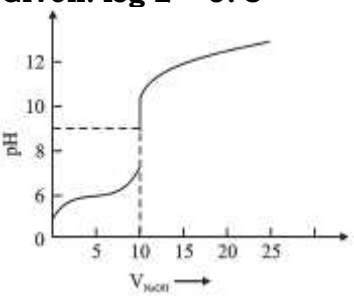
$$A_{2(g)} + B_{2(g)} \rightleftharpoons 2AB_{(g)}$$

At equilibrium, the concentration of $A_2 = 3.0\times10^{-3}M$, of $B_2 = 4.2\times10^{-3}M$, of $AB = 2.8\times10^{-3}M$

If the reaction takes place in a sealed vessel at 527^oC, then the value of K_c will be

(a) 2.0 (b) 1.9
(c) 0.62 (d) 4.5

64. The titration curve of weak acid vs. strong base with phenolphthalein as indicator is shown below. The $K_{phenolphthaien}$ = 4 x 10^{-10}
Given: log 2 = 0. 3



The number of following statement/s which is/are correct about phenolphthalein is_____

(a) It can be used as an indicator for the titration of weak acid with weak base.
(b) It begins to change colour at pH =8.4
(c) It is a weak organic base
(d) It is colourless in acidic medium

65. An endothermic reaction is one in which

(a) Heat is converted into electricity
(b) Heat is absorbed
(c) Heat is evolved
(d) Heat is converted into mechanical work

66. A reaction that takes place with the absorption of energy is

(a) Burning of a candle (b) Rusting of iron
(c) Electrolysis of water (d) Digestion of food

67. If enthalpies of methane and ethane are respectively 320 and 360 calories then the bond energy of $C-C$ bond is

(a) 80 *calories* (b) 40 *calories*
(c) 60 *calories* (d) 120 *calories*

68. A First order reaction is half completed in 45 minutes. How long does it need 99.9% of the reaction to be completed

(a) 5 hours (b) 7.5 hours
(c) 10 hours (d) 20 hours

69. Consider the reaction $2N_2O_5(g) \rightarrow 4NO_2(g) + O_2(g)$

The rate law for this is Rate $= K[N_2O_5]$.

Which of the following statements is true regarding the above reaction?

(a) Its order is 1 and molecularity 1
(b) Its order is 1 and molecularity 2
(c) Its order is 2 and molecularity 2
(d) Its order is 2 and molecularity 1

70. For an elementary reaction, the variation of rate constant (k) with temperature is given by the following equation $\log_{10} k = 5.4 - \frac{100}{T}$, where T is temperature on Kelvin scale and k is in terms of sec^{-1}. Identify the incorrect option.

(a) There is no finite temperature at which rate constant can be $4 \times 10^6 sec^{-1}$.
(b) Fraction of activated molecules will be $e^{-100/T}$ at any temperature.
(c) Activation energy for the reaction will be approx 460.6cal.
(d) Rate of reaction will vary linearly with concentration of reactant.

71. When 1 coulomb of charge is passed through electrolyte solution, then the mass deposited is equal to
(a) Equivalent weight
(b) Atomic weight
(c) Electrochemical equivalent
(d) Chemical equivalent

72. When one of ampere current flows for 1sec through a conductor, this quantity of electricity is known as
(a) Faraday (b) Coulomb
(c) E.M.F. (d) Ohm

73. When $1F$ of electricity is passed through acidulated water, O_2 evolved is
(a) $11.2\ dm^3$ (b) $5.6\ dm^3$
(c) $22.4\ dm^3$ (d) $1.0\ dm^3$

74. In the reaction, $2FeSO_4 + H_2SO_4 + H_2O_2 \rightarrow Fe_2(SO_4)_3 + 2H_2O$, the oxidizing agent is
(a) $FeSO_4$ (b) H_2O_2
(c) H_2SO_4 (d) both H_2SO_4 and H_2O_2

75. What is the general molecular formula of the products obtained on heating lanthanoids (Ln) with sulphur?
(a) LnS (b) LnS_3
(c) Ln_3S_2 (d) Ln_2S_3

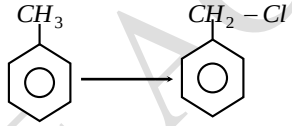
76. Which of the following statements is false?
(a) The interstitial compounds have similar chemical properties as the parent metals but differ appreciably in their physical properties.
(b) Interstitial compounds possess high melting points which are higher than those of pure metals .
(c) Interstitial compounds are always stoichiometric in nature.
(d) Small elements like H, B, C and N can form interstitial compounds.

77. What is the EAN of nickel in $Ni(CO)_4$
(a) 34 (b) 35
(c) 32 (d) 36

78. The ligands which can get attached to the central metal ion through more than one atom are called
(a) Ambident ligands (b) Polydentate ligands
(c) Chelate ligands (d) Neutral ligands

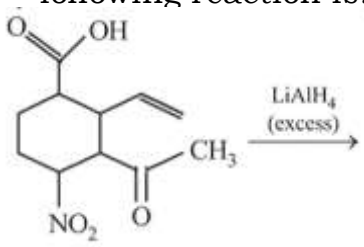
79. The coordination number and oxidation state of Cr in $K_3Cr(C_2O_4)_3$ are respectively
(a) 3 and +3
(b) 3 and 0
(c) 6 and +3
(d) 4 and +2 (1995)

80.

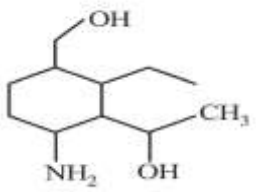


The above reaction proceeds through
(a) Nucleophilic substitution
(b) Electrophilic substitution
(c) Free radical substitution
(d) More than one of the above processes

81. The major product obtained in the following reaction is:



(a)



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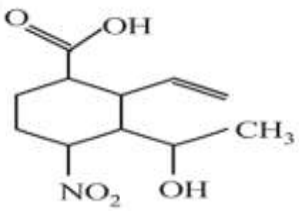
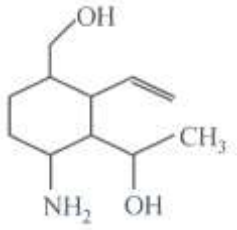
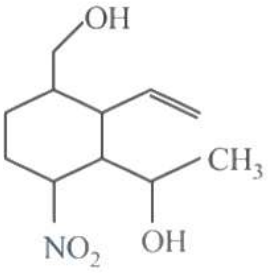


(c) 

(d) 

82. Bayer's reagent is used for detection of
(a) Amines (b) Glucose
(c) Unsaturated bond (d) Alcohol

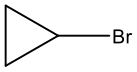
83. The main product of the following reaction is

$$CH_3CH=CH_2+HBr \xrightarrow{(C_6H_5CO)_2O_2}$$

(a) $CH_3CH(Br)-CH_3$

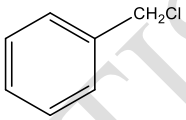
(b) $CH_3CH_2CH_2Br$

(c) $BrCH_2-CH=CH_2$

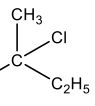
(d) 

84. Reaction of alkyl halides with aromatic compounds in presence of anhydrous $AlCl_3$ is known as
(a) Friedal-Craft reaction
(b) Hofmann degradation
(c) Kolbe's synthesis
(d) Beckmann rearrangement

85. Which of the following compounds will undergo racemisation when solution of KOH hydrolyses?.

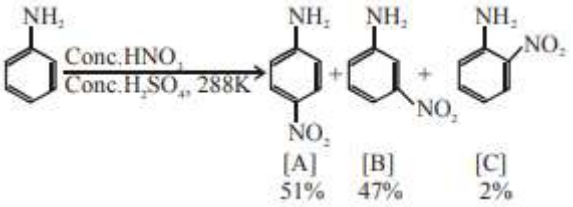
(i) 

(ii) $CH_3CH_2CH_2ClCH_3$

(iii) $H_3C-\underset{\underset{CH_3}{|}}{C}H-CH_2Cl$ (iv) 

(a) (i) and (ii) (b) (ii) and (iv)
(c) (iii) and (iv) (d) None

86. In the following reaction the reason why meta-nitro product also formed is:



(a) Formation of anilinium ion

(b) $-NO_2$ substitution always takes place at meta-position

(c) Low temperature

(d) $-NH_2$ group is highly meta-directive

87. Diethyl ether absorbs oxygen to form
(a) Red coloured sweet smelling compound
(b) Acetic acid
(c) Ether suboxide
(d) Ether peroxide

88. Which of the following will not form a yellow precipitate on heating with an alkaline solution of iodine
(a) CH_3OH
(b) CH_3CH_2OH
(c) $CH_3CH(OH)CH_3$
(d) $CH_3CH_2CH(OH)CH_3$

89. Consider the following steps involved in the mechanism of acid catalysed hydration.
(A) Nucleophilic attack of H_2O on carbocation
(B) Protonation of alkene to form carbocation
(C) Deprotonation to form an alcohol
The correct sequence of reaction mechanism is
(a) A, B, C
(b) C, B, A
(c) B, A, C
(d) A, C, B

90. C_2H_5CHO and $(CH_3)_2CO$ can be distinguished by testing with
(a) Phenyl hydrazine (b) Hydroxylamine
(c) Fehling solution (d) Sodium bisulphite

91. Which of the following compounds would undergo Cannizzaro's reaction
(a) Propionaldehyde
(b) Benzaldehyde
(c) Bromobenzene
(d) Acetaldehyde

92. In the following reaction product P is

$$R-\underset{\underset{O}{\|}}{C}-Cl \xrightarrow[Pd-BaSO_4]{H_2} P$$

(a) RCH_2OH

(b) $RCOOH$

(c) *RCHO*

(d) RCH_3 (*2002*)

93. Sodium acetate reacts with acetyl chloride to form

(a) Acetic acid (b) Acetone

(c) Acetic anhydride (d) Sodium formate

94. Oxidation of toluene with CrO_3 in the presence of $(CH_3CO)O_2$ gives a product '*A*' which on treatment with aqueous *NaOH* produces

(a) C_6H_5CHO (b) $(C_6H_5CO)_2O$

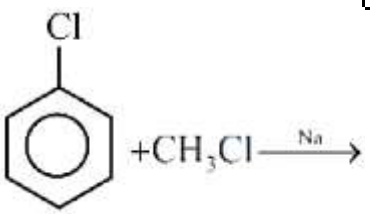
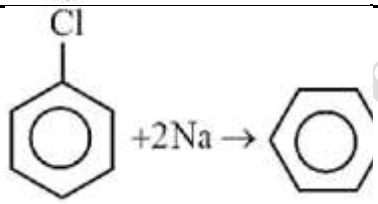
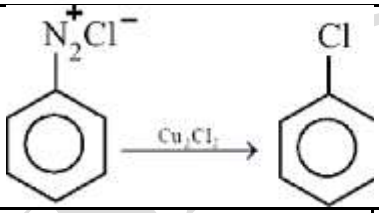
(c) C_6H_5COONa (d) 2, 4-diacetyl toluene

95. Alkyl cyanides when react with Grignard reagent, the product on hydrolysis found, is

(a) Aldehyde (b) Ketone

(c) Alcohol (d) Acid

96.

List I		List II	
A		I	Fitting reaction
B		II	Wurtz Fitting reaction
C		III	Finkelstein reaction
D	$C_2H_5Cl+NaI \rightarrow C_2H_5I+NaCl$	IV	Sandmeyer reaction

(a)A-II,B-I,C-III,D-IV

(b) A - III, B - II, C - IV, D -I

(c)A-IV,B-II,C-III,D-I

(d) A- II, B -I, C - IV, D - III

97. Neoprene, a synthetic rubber contains which of the following element besides *C* and *H*

(a) *N* (b) *O*

(c) *Cl* (d) *F*

98. Buna-S is a polymer of

(a) Butadiene and styrene

(b) Butadiene

(c) Styrene

(d) Butadiene and chloroprene

99. Which of the following molecules form a zwitter ion?

(a) CH_3COOCH_3 (b) H_2NCH_2COOH

(c) $CH_3COC_2H_5$ (d) CH_3CH_2COOH

100. A dye imparts red colour on fabric. What colour of light was absorbed by the dye

(a) Blue (b) Red

(c) Green (d) Orange