1. Least number of genes are present on which human chromosome ?

   (a) X-chromosome

   (b) Y-chromosome

   (c) 1st chromosome

   (d) 12th chromosome

2. The most abundant type WBCs in the blood are

   (a) Eosinophils

   (b) Neutrophils

   (c) Basophils

   (d) Lymphocytes

3. Primary lymphoid organs are

   (a) Spleen and Thymus

   (b) Bone marrow and Thymus

   (c) Bone marrow and Tonsils

   (d) Spleen and Tonsils

4. A very effective sedative and painkiller drug is

   (a) Barbiturate

   (b) Amphetamine

   (c) Morphine

   (d) Benzodiazepine

5. Which one of the following diseases is now extinct ?

   (a) TB

   (b) Measles

   (c) Small pox

   (d) Polio

6. The duct of Submandular gland is known as

   (a) Rivinus duct

   (b) Stensen's duct

   (c) Whartons's duct

   (d) Wirsung's duct

7. The membrane that provides the ability to distinguish between different pitches of sound is t

   (a) Round window

   (b) Reissner's membrane

   (c) Basilar membrane

   (d) Tectorial membrane

8. The recognition of 'self' as 'non-self' can result into the development of :

   (a) muscular body

   (b) auto-immune disorders

   (c) genetic anomalies

   (d) HIV infection

9. Which one of the following is used as secondary host by Fasciola hepatica in order to comp life cycle ?

   (a) Anopheles sp.

   (b) Musca domestica

   (c) Lymnea sp.

   (d) Trichogaster sp.

10. Sensitization of rhesus negative mother by rhesus positive fetal cells is prevented by which following vaccines ?

    (a) Anti-A

    (b) Anti-B

    (c) Anti-D

    (d) Anti-O

11. The term metagenesis is related to :

    (a) Asexual reproduction

    (b) Alternation of generation in obelia

    (c) Sexual reproduction in Paramoecium

    (d) Polymorphism in obelia

12. The organs of balance in the human body are located in

    (a) External Ear   (b) Middle Ear

    (c) Inner Ear   (d) Eustachian tube

13. The hormone progesterone is secreted by

    (a) Mature Graffian follicle   (b) Testes

    (c) Corpus luteum   (d) Anterior lobe of pituitory

14. Inhibiting an enzyme action by blocking its active site, is called as

    (a) Allosteric inhibition   (b) Non competitive inhibition

    (c) Feed Back inhibition   (d) Competitive inhibition

15. Which of the following is the hypoglycaemic hormone

    (a) Glucagon   (b) Insulin

    (c) Cortisol   (d) Adrenaline

16. Which is the incorrect pair of contrasting traits studied by Mendel in Pea

    (a) Stem Height – Tall / Dwarf   (b) Flower colour – Violet / White

    (c) Pod colour – Green / Yellow   (d) Seed colour – Violet / White

17. Five kingdom classification was proposed by

    (a) Whittaker   (b) Linnaeus

    (c) Mendel   (d) Haeckel

18. Which of the following secretions does not contain an enzyme?

    (a) Saliva   (b) Intestinal Juice

    (c) Pancreatic Juice   (d) Bile

19. Removal of the thymus gland in new born mice severely affects the maturation of

    (a) B-lymphocytes   (b) Thyroid cells

    (c) T-lymphocytes   (d) Testosterone secreting cells

20. Which one of the following is not a protozoan disease?

    (a) Malaria   (b) Amoebiasis

    (c) Candidiasis   (d) Sleeping sickness

21. Deficiency of copper causes

    (a) Heart rot of beet   (b) Reclamation disease

    (c) Internal cork disease   (d) Whiptail disease

22. For the synthesis of one mol of glucose in C_4 plants, number of ATPs required is :

    (a) 12   (b) 15

    (c) 18   (d) 30

23. The O_2 released during photosynthesis comes after splitting water was demonstrated by Ruben and Kamen while using :

    (a) Spirogyra   (b) Chlorella

    (c) Volvox   (d) Ulothrix

P.T.O

24. Electron transport system, the process in which electrons are transferred from one carrier to takes place in which part of the cell:

    (a) Inner plastidial membrane
    (b) Outer plastidial membrane
    (c) Inner mitochondrial membrane
    (d) Outer mitochondrial membrane

25. Which of the following activates RUBP enzyme ?

    (a) Copper
    (b) Phosphorus
    (c) Zinc
    (d) Magnesium

26. Kreb's cycle takes place in

    (a) Vesicles of endoplasmic reticulum
    (b) Mitochondrial matrix
    (c) Lysosomes
    (d) Inner mitochondrial membrane

27. At seedling stage of orchids, fungal hyphae provides nourishments by forming cells called

    (a) arbuscules
    (b) giant cells
    (c) pelotons
    (d) haustoria

28. Region of Biosphere Reserves where no human activity is allowed is known as

    (a) Transition zone
    (b) Core zone
    (c) Buffer zone
    (d) Restoration zone

29. When the population density reaches the carrying capacity, a plot of N in relation to time (t) re

    (a) Exponential curve
    (b) Geometric growth
    (c) J shaped curve
    (d) Sigmoid curve

30. Increase in the concentration of pollutants in higher trophic levels is known as

    (a) Biomagnification
    (b) Biodegradation
    (c) Eutrophication
    (d) Recycling

31. Blood cholestrol lowering agents "Statins" are produced by :

    (a) Pasteuriapenetrans
    (b) Monascuspurpurens
    (c) Trichodermaviridae
    (d) Agrobacteriumrhizogens

32. Which of the following represents a test cross ?

    (a) Tt × TT
    (b) Tt × tt
    (c) TT × tt
    (d) Tt × Tt

33. Multiple root caps are found in

    (a) Zeamays
    (b) Rhizophora sp.
    (c) Paudanus sp.
    (d) Ficusbenghalensis

34. Which one of the following equations shows correct relationship between gross ! productivity (GPP), net primary productivity (NPP) and respiration (R) ?

    (a) GPP – R = NPP
    (b) R – NPP = GPP
    (c) R + GPP = NPP
   (d) GPP + NPP = R

35. The phenotypic dihybrid ratio of F_2 generation is
    (a) 9 : 7
    (b) 3 : 1
    (c) 9 : 3 : 4
    (d) 9 : 3 : 3 : 1

36. Which aglae inhabits the deepest waters of the sea ?
    (a) brown algae
    (b) Blue-green algae
    (c) Red algae
    (d) Green algae

37. 'Mycorrhiza' is :
    (a) Root-like underground stem
    (b) Root-fungus association
    (c) Algal-fungal association
    (d) Parasitic root

38. Which is an exception of Mendel's law of heredity ?
    (a) law of independent assortment
    (b) law of dominance
    (c) law of purity of gametes
    (d) linkage

39. Which of the following does not agree with Watson and Crick model of DNA ?
    (a) Two chains are antiparallel
    (b) Purines pair with pyrimidines
    (c) Keto-base pairs with amino-base
    (d) G pairs with C by 2 hydrogen bonds

40. A green algae that has a possible role in evolution of land plants is :
    (a) Vaucheria
    (b) Oscillatoria
    (c) Oedogonium
    (d) Fritschiella

41. What is the maximum value of the force F such that the block shown in the arrangement does not move ? (g = 10 m/s)
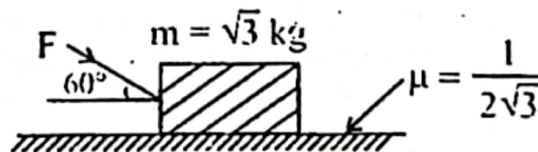
    (a) 20 N
    (b) 10 N
    (c) 12 N
    (d) 15 N

42. If the error in the measurement of radius of a sphere is 2%, the error in the determination of the volume of the sphere will be
    a) 4%
    (b) 6%
    (c) 8%
    (d) 2%

43. When a gas filled in a vessel (closed) is heated through 1°C, its pressure increased by 0.4%. What is the initial temperature of the gas?
    (a) 150 K
    (b) 250 K
    (c) 75 K
    (d) 273 K

44. The ratio of amplitudes of two simple harmonic motions represented by the equations $y_1 = sin\frac{\pi}{4}(12t + 1)$ and $y_2 = sin3\pi t + \sqrt{3}cos3\pi t$ is
   (a) 1 : 1
    (b) 1 : 2
    (c) 1 : 4
    (d) 1 : $\sqrt{3}$

P.T.O.

45. A body initially at rest, undergoes one dimensional motion with constant acceleration. The delivered to it at time t is proportional to

(a) $t^{\frac{1}{2}}$

(b) t

(c) $t^{\frac{3}{2}}$

(d) t^2

46. An electromagnetic wave of wavelength λ is incident on a photosensitive surface of work function. If the photoelectrons emitted from this surface have the de-Broglie wave then the wavelength λ will be equal to

(a) λ_1

(b) $\left(\frac{2mc}{h}\right)\lambda_1^2$

(c) $\frac{mc\lambda_1^2}{h}$

(d) $\frac{7}{2}\lambda_1$

47. An electric field $\vec{E} = (20\hat{i} - 10\hat{j})$ N/C exists in the space. If the electric potential at the taken to be zero then the potential at (5m, 2m) will be

(a) +80V

(b) –80V

(c) +70 V

(d) –70 V·

48. The pressure inside the two soap bubbles is 1.01 and 1.02 atmosphere. The ratio of their re volume is -

(a) 16:1

(b) 8:1

(c) 4:1

(d) 2:1

49. If the electric potential V is given as a function of distance x (in meters) by the $V = (5x^2 + 10x - 4)$ volt, then the value of electric field at x = 1m is

(a) – 20 V/m

(b) – 23 V/ m

(c) 11 V/m

(d) 6 V/m

50. The given graph shows variation of potential difference across a combination of three cells in series versus current. The emf and internal resistance of each cell are

(a) 2 V, 2 Ω

(b) 0.2 V, 0.2 Ω

(c) 2 V, 20 Ω

(d) 1 V, 1 Ω
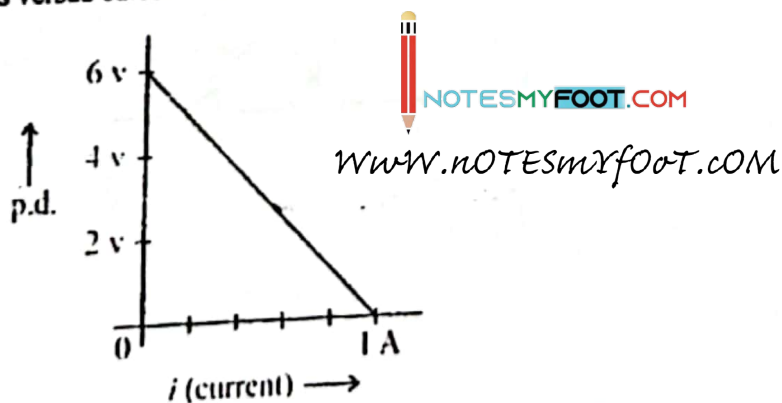
51. Ratio of the radii of two planets is 'K' and the ratio of acceleration due to gravity of both the planets is 'g'. What is the ratio of their escape velocities ?

(a) $(Kg)^{1/2}$

(b) $(Kg)^{-1/2}$

(c) $(Kg)^2$

(d) $(Kg)^{-2}$

52. One kg of a diatomic gas is at a pressure of 8×10^4 Nm^{-2}. The density of the gas is 4 kgm^{-3}. What, is the energy of the gas due to its thermal motion ?

(a) 7×10^4 J

(b) 3×10^4 J

(c) 5×10^4 J

(d) 6×10^4 J

53. P-V diagram of 4 g of Neon gas for A→B process is shown. What is the heat given to the gas ?
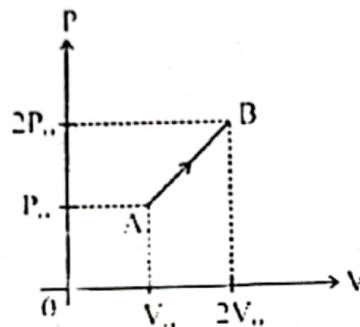
(a) $6 P_0 V_0$

(b) $4 P_0 V_0$

(c) $2 P_0 V_0$

(d) $\frac{9}{2} P_0 V_0$

54. In the given figure, which of the diodes are forward biased:
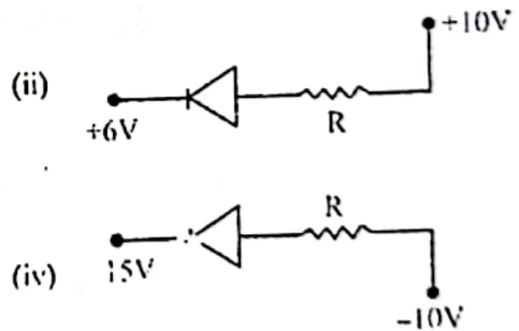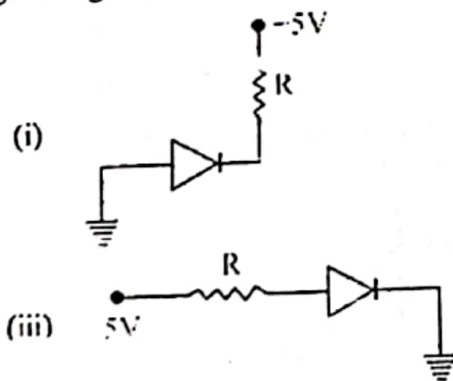
(a) (i) and (iii)

(b) (ii) and (iii)

(c) (i) , (ii) & (iv)

(d) (ii) and (iv)

55. The truth table of the circuit shown below is
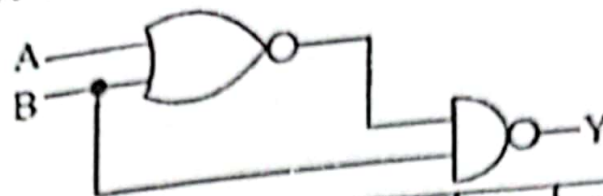
(a)

A	B	Y
0	0	1
0	1	0
1	0	1
1	1	1

(b)

A	B	Y
0	0	1
0	1	1
1	0	0
1	1	1

(c)

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

(d)

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	1

56. The dimensions of $\frac{e^2}{4\pi\epsilon_0 hc}$, where e, ϵ_0 , h and c are the electronic charge, electric perm... Planck's constant and velocity of light in vacuum respectively, are

(a) $[M^0L^0T^0]$

(b) $[ML^0T^0]$

(c) $[M^0LT^0]$

(d) $[M^0L^0T]$

57. If the earth were to suddenly contract to half its present radius (without any external tor... on it), by how much would the day be decreased.

(a) 6 hour

(b) 18 hour

(c) 12 hour

(d) 10 hour

58. A square wave current switching rapidly between +0.5A and −0.5A is passed through ammeter. The reading of the ammeter will be

(a) 0.25 A
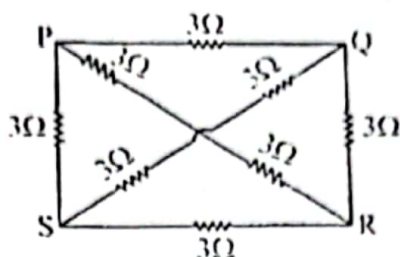
(b) 0.5 A

(c) $0.25\sqrt{2}$ A

(d) $0.5\sqrt{2}$ A

59. The value of the current i so that the magnetic field at point 'P' is zero, is


(a) 1 A

(b) 2 A
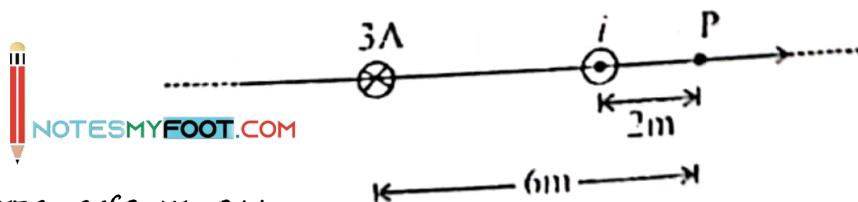
(c) 3 A

(d) 4 A

60. The resistance between P and R in the circuit given below is

(a) $8\ \Omega$ (b) $2\ \Omega$

(c) $4\ \Omega$ (d) $3\ \Omega$

61. Two interfering waves have intensity ratio of $25 : 4$. The ratio of maximum to minimum intensity is

(a) $\dfrac{25}{16}$ (b) $\dfrac{25}{4}$

(c) $\dfrac{49}{9}$ (d) $\dfrac{5}{2}$

62. When $^{238}_{92}U$ undergoes fission, 0.1% of its original mass is changed into energy. If 1 kg of $^{238}_{92}U$ under-goes fission, the energy released will be

(a) $9\times10^{13}\ J$ (b) $9\times10^{12}\ J$

(c) $9\times10^{11}\ J$ (d) $9\times10^{10}\ J$

63. A pendulum bob has a speed 3 m/s while passing through its lowest position. If the length of the pendulum is 0.5m and $g = 10\ m/s^2$, then its speed when it makes an angle of 60° with the vertical will be :

(a) 1 m/s   (b) 2 m/s

(c) 3 m/s   (d) 4 m/s

64. For a given material, the Young's modulus is 2.4 times that of modulus of rigidity, its Poisson ratio is .

(a) 2.4   (b) 1.2

(c) 0.4   (d) 0.2

65. Yellow light of wave length 589.0 nm is incident on a boundary separating air and glass. The refractive index of glass for yellow light = 1.5. The wave length of refracted light is

(a) $392.7 \times 10^{9}\ m$ (b) $392.7 \times 10^{-10}\ m$

(c) $196.3 \times 10^{11}\ m$ (d) $196.3 \times 10^{-12}\ m$

66. A 40 W monochromatic point source radiating equally in all directions in vacuum is being monitored at a distance of 4m. The amplitude of electric field at the detector will be

(a) $\sqrt{29}$ (b) $\sqrt{37.5}$

(c) $\sqrt{45.2}$ (d) $\sqrt{55}$

67. The interior light of a car is switched off only when all doors are closed. It is an example of

(a) AND gate   (b) NOR gate

(c) NOT gate   (d) NAND gate

8

68. The correct curve between potential (V) and distance (d) near p – n junction is

(a)

(b)

(c)

(d)
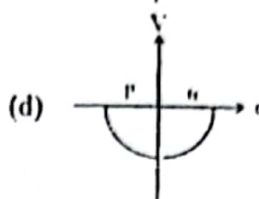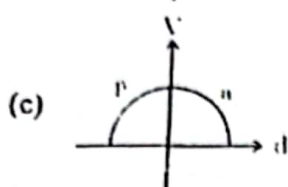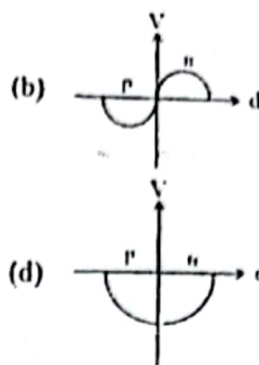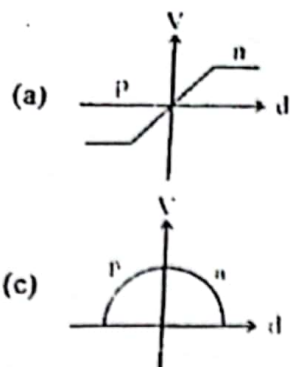
69. If a carrier wave is represented as $D \cos(\omega t + \theta)$ then in case of amplitude modulated wave
   (a) D is varied with ω and θ kept constant
   (b) D and ω are varied and θ is kept const
   (c) D and θ are varied and ω is kept constant
   (d) ω and θ are varied and D is kept const

70. Assume that an electric field $\vec{E} = 30 x^2 \hat{i}$ exists in space. Then, the potential difference V where V_o is the potential at the origin and V_x is the potential at $x = 2$ m, is given by:
   (a) 120 J
   (b) – 120 J
   (c) – 80 J
   (d) 80 J

71. Which of the following substance has ferromagnetic property:
   (a) O_2
   (b) MnO
   (c) CrO_2
   (d) NaCl

72. What is molar conductivity of an 0.02 M solution of acetic acid at 25°C (Given Ka = 1.8×1
   $\Lambda^0_{m(CH_3COOH)} = 39...$ ohm^{-1} c...^{2} ...$^{-1}$)
   (a) 11.7 ohm^{-1} cm^2 mol^{-1}
   (b) 1.17 ohm^{-1} cm^2 mol^{-1}
   (c) 11.7×10^{-2} ohm^{-1} cm^2 mol^{-1}
   (d) 1.17×10^{-2} ohm^{-1} cm^2 mol^{-1}

73. A pure substance exists in three phases such as solid(s), liquid (l) and vapour (v). The vari: chemical potential (μ) with temperature (T) is given by the plot

(a)
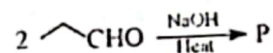
(b)

(c)

(d)

9
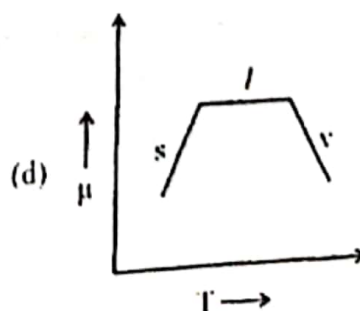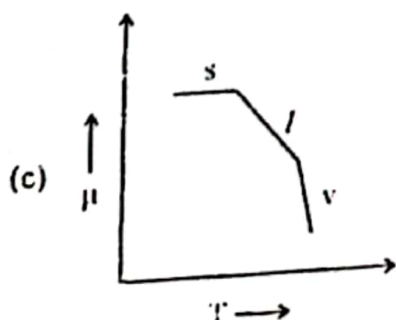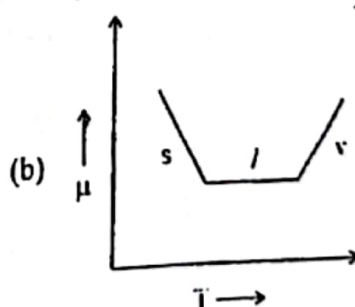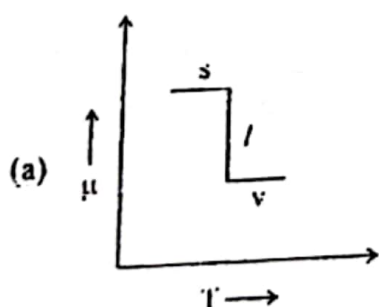
WwW.nOTESmYfOoT.cOM

74. Which of the following statements is wrong?

    (a) Evaporation is a spontaneous process

    (b) Evaporation is a surface phenomenon

    (c) Vapour pressure decreases with increase in temperature

    (d) The vapour pressure of a solution is always less than vapour pressure of a pure solvent

75. For the reaction $2A + B \rightleftharpoons 2C$; ΔG^0 (500K) = 2 KJ/mole. Now, the equilibrium constant K for the reaction $A + \frac{1}{2} B \rightleftharpoons C$ is

    (a) 15.72

    (b) 0.786

    (c) 3.93

    (d) 786

76. Calculation of activation energy, E_a from Arrhenius equation : $k = A \exp(-E_a / RT)$ involves the following assumption .

    (a) k increases with increasing T

    (b) k decreases with increasing T

    (c) E_a decreases with increasing T

    (d) E_a does not change with temperature

77. Among the below statements which of the following are true for a catalyst

    (i) Catalyst can change $\Delta G^0_{P,T}$ of a reaction
    (ii) Catalyst can change the equilibrium condition
    (iii) Catalyst cannot change $\Delta G^0_{P,T}$ of a reaction
    (iv) Catalyst cannot change the equilibrium condition

    (a) (i) and (ii)

    (b) (i) and (iv)

    (c) (ii) and (iv)

    (d) (iii) and (iv)

78. Two solutions of glucose have osmotic pressures 1.5 atm and 2.5 atm respectively. If 1 litre of first solution is mixed with 2 litre of second solution, the osmotic pressure of the resultant solution will be

    (a) 1.62 atm

    (b) 6.12 atm

    (c) 2.16 atm

    (d) 1.20 atm

79. If a saturated solution prepared by dissolving Ag_2CO_3 in water has $[Ag^+] = 1.20 \times 10^{-4}$ M. What is the value of K_{sp} for Ag_2CO_3 ?

    (a) 8.64×10^{-12}

    (b) 8.64×10^{-13}

    (c) 7.20×10^{-8}

    (d) 1.44×10^{-8}

80. In case of gaseous homogeneous reaction, the active mass of the reactant is obtained by the expression

    (a) $\dfrac{PV}{RT}$

    (b) $\dfrac{P}{RT}$

    (c) $\dfrac{RT}{P}$

    (d) $\dfrac{V}{RT}$

81. Which of the following complex has zero valent central metal?

    (a) $[Cu(NH_3)_4] SO_4$

    (b) $[Pt(NH_3)_2Cl_2]$

    (c) $[Ni(CO)_4]$

    (d) $K_3[Fe(CN)_6]$

82. Which has the smallest radius of the ion amongst the following?

    (a) Li^+
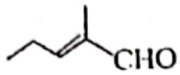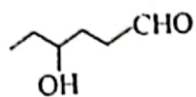
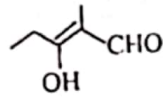   (b) Be^{2+}

    (c) O^{2-}

    (d) F^-

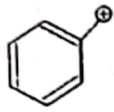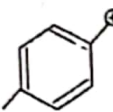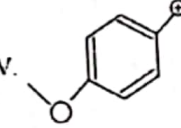P.T.O.

10

83. Which one of the following oxoanions is known as household bleaching agent ?

    (a) ClO

    (b) ClO_2

    (c) ClO_3

    (d) ClO_4^-

84. The outer electronic configuration of Gd (Atomic number: 64) is:

    (a) $4f^3 5d^5 6s^2$

    (b) $4f^3 5d^5 6s^2$

    (c) $4f^7 5d^1 6s^2$

    (d) $4f^8 5d^0 6s^2$

85. Mercury is a liquid metal because

    (a) it has a completely filled s-orbital

    (b) it has a completely filled d-orbital tha prevents d-d overlapping of orbitals

    (c) it has a large atomic size

    (d) it has a completely filled d-orbital tha causes d-d overlapping

86. The correct order of second ionization potential of C, N, O and F is

    (a) $C > N > O > F$

    (b) $O > N > F > C$

    (c) $O > F > N > C$

    (d) $F > O > N > C$

87. The metallic luster exhibited by Na is explained by the following

    (a) Diffusion of Na^+ ions

    (b) Excitation of free protons

    (c) Existence of body centered cubic lattice

    (d) Oscillation of loose electrons

88. Which one of the following species is capable of functioning both as a Bronsted acid a Bronsted base?

    (a) CO_3^{2-}

    (b) HS^-

    (c) Br^-

    (d) S^{2-}

89. How many P-OH bond(s) are there in hypophosphorous acid (H_3PO_2)

    (a) 1

    (b) 2

    (c) 3

    (d) 0

90. The linkage isomer of the complex $[Cr(H_2O)_3NO_2Cl_2]$ is

    (a) $[Cr(H_2O)_3 Cl_2NO_2]$

    (b) $[Cr(H_2O)_3ONOCl_2]$

    (c) $[Cr(H_2O)_3(NO_2)_3]$

    (d) $[Cr(H_2O)_2 Cl_2(NO_2)_2] H_2O$

91. Iodoform can be prepared from all of the following except :

    (a)

    (b)

    (c)

    (d)
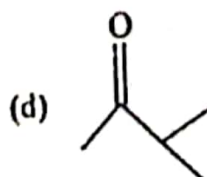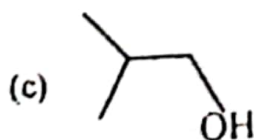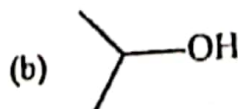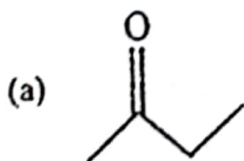
92. What is the correct IUPAC name of the compound

    (a) cis-2-hepten-6-one
    (b) trans-2-hepten-6-one
    (c) cis-5-hepten-2-one
    (d) trans-5-hepten-2-one

93. Which of the following is known as biocatalyst?

    (a) Fat
    (b) Oil
    (c) Enzyme
    (d) Vitamins

94. The compound that is most reactive towards an electrophile is :

    (a) Benzene
    (b) Toluene
    (c) Benzoic acid
    (d) Aniline

95. Gabriel phthalimide synthesis is used for the preparation of

    (a) Tertiary amine
    (b) Primary amine
    (c) Secondary amine
    (d) Quaternary ammonium salt

96. Triethylaluminium and titanium chloride is known as

    (a) Adam's catalyst
    (b) Wilkinson catalyst
    (c) Lindlar catalyst
    (d) Zeigler-Natta catalyst

97. Major product P of the following reaction is :

$$2 \quad \diagup CHO \xrightarrow[\text{Heat}]{\text{NaOH}} P$$

    (a) [structure with CHO]
    (b) [structure with CHO]
    (c) [structure with OH and CHO]
    (d) [structure with OH and CHO]

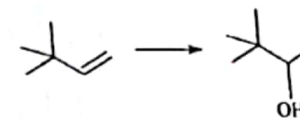98. Most stable carbocation is :

    I.   II.   III.   IV.

    (a) I
    (b) II
    (c) III
    (d) IV

99. Carbon-oxygen-carbon bond angle in methoxymethane is :

    (a) 104.5°
    (b) 108.9°
    (c) 109.7°
    (d) 111.7°

100. The following change can be done by :

    (a) Acid catalyzed hydration
    (b) Hydroboration-oxidation
    (c) Oxymercuration-demercuration
    (d) All a, b and c methods

13

ALIGARH MUSLIM UNIVERSITY, ALIGARH
Answer Key Diploma (Paramedical) Courses through C.E.T. Admission Test 2019-2020
SERIES: B

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
1	B	41	A	81	C
2	B	42	B	82	B
3	B	43	B	83	A
4	C	44	B	84	C
5	C	45	C	85	B
6	C	46	B	86	C
7	D	47	B	87	D
8	B	48	B	88	B
9	C	49	A	89	A
10	C	50	A	90	B
11	B	51	C	91	C
12	C	52	C	92	D
13	C	53	A	93	C
14	D	54	D	94	D
15	B	55	D	95	B
16	D	56	A	96	D
17	A	57	C	97	A
18	D	58	B	98	D
19	C	59	A	99	D
20	C	60	D	100	C
21	B	61	B		
22	D	62	C		
23	B	63	B		
24	C	64	D		
25	D	65	A		
26	B	66	B		
27	C	67	C		
28	B	68	A		
29	D	69	A		
30	A	70	C		
31	B	71	C		
32	B	72	A		
33	C	73	C		
34	A	74	C		
35	D	75	B		
36	C	76	D		
37	B	77	D		
38	D	78	C		
39	D	79	B		
40	D	80	B		

COORDINATOR
Dated : 03.05.2019