BEATS
HIGH CARE CLASS
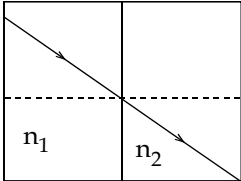
CEE MODEL ENTRANCE EXAM

(SET-6)

Instructions:

- There are 200 multiple-choice questions, each having four choices of which only one choice is correct.
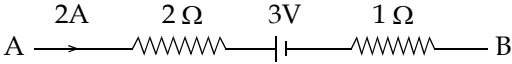- Fill (●) the most appropriate one.

Date : 2081/10/05
(Jan 18)

Duration : 3 hours
Time : 7 A.M. – 10 A.M.

1.   **A substance which cannot be further decomposed by ordinary chemical means is**
      (a) Water   (b) Air   (c) Sugar   (d) Silver
2.   **Which one of the following pairs of compounds illustrate the law of multiple proportions?**
      (a) H_2S and SO_2 (b) NH_3 and NCl_3 (c) $FeCl_2$ and $FeCl_3$ (d) CuO and Cu_2O
3.   **Vapour density of a volatile substance is 4 ($CH_4 = 1$). Its molecular weight would be**
      (a) 2   (b) 8   (c) 64   (d) 128
4.   **90 g of water contains how many moles?**
      (a) 6.02×10^{23} (b) 90   (c) 5   (d) 1
5.   **The equivalent mass of a certain bivalent metal is 20. The molecular mass of its anhydrous chloride is**
      (a) 111   (b) 91   (c) 55.5   (d) 45.5
6.   **How much amount of $CuSO_4.5H_2O$ is required for liberation of 2.54 g of I_2 when titrated with KI?**
      (a) 2.5 g   (b) 2.4 g   (c) 4.99 g   (d) 1.2 g
7.   **In the ionic equation; $BiO_3 + 6H^+ + xe^- \longrightarrow Bi^{3+} + 3H_2O$, the value of x is**
      (a) 2   (b) 6   (c) 3   (d) 4
8.   **What volume of oxygen gas measured at 0^oC and 1 atm. is needed to burn completely 1L of propane gas (C_3H_8) measured under the same conditions**
      (a) 5L   (b) 10L   (c) 7L   (d) 6L
9.   **For principal quantum number n = 4, the total number of orbitals having ℓ = 3 is**
      (a) 3   (b) 7   (c) 5   (d) 9
10.   **The energy of the electron in the hydrogen atom is given by the expression**
      (a) $-\dfrac{e^2}{Z^2}$ (b) $-\dfrac{n^2h^2}{2\pi^2Z^2e^4m}$ (c) $-\dfrac{2\pi^2Z^2e^4m}{n^2h^2}$ (d) $\dfrac{nh}{2\pi}$
11.   **75% of a first-order reaction was completed in 32 minutes. When was 50%?**
      (a) 24 minutes   (b) 16 minutes   (c) 8 minutes   (d) 4 minutes
12.   **Hybridization in SO_2 is**
      (a) sp   (b) sp^2 (c) sp^3 (d) dsp^2
13.   **Ammonia gas dissolves in water to give NH_4OH. In this reaction, water acts as**
      (a) An acid   (b) A base   (c) A salt   (d) A conjugate base
14.   **In $C + H_2O \longrightarrow CO + H_2$, H_2O acts as**
      (a) Oxidizing agent   (b) Reducing agent
      (c) Both oxidizing as well as reducing agent   (d) Neither oxidizing nor reducing agent
15.   **How many ml of 1M H_2SO_4 solution is required to neutralize 10 ml of 1M NaOH solution?**
      (a) 2.5 ml   (b) 5.0 ml   (c) 10.01 ml   (d) 20.0 ml
16.   **The activation energy of the reaction is equal to**
      (a) Threshold energy for the reaction   (b) Threshold energy + Energy of the reactants
      (c) Threshold energy – Energy of reactants   (d) Threshold energy + Energy of product
17.   **20 litres of hydrogen gas at STP weighs about**
      (a) 12.2 g   (b) 44.8 g   (c) 1.8 g   (d) 20 g
18.   **The p^H of the solution formed by mixing 20 ml of 0.05M H_2SO_4 with 5.0 ml of 0.45M NaOH at 298 K is**
      (a) 6   (b) 2   (c) 12   (d) 7
19.   **The role of a catalyst in reversible reaction is to**
      (a) increase the rate of forward reaction   (b) decrease the rate
      (c) alter the equilibrium   (d) allow equilibrium to be achieved quickly
20.   **In the Ostwald's process for the manufacture of HNO_3, the catalyst used is**
      (a) Mo   (b) Fe   (c) Ni   (d) Pt
21.   **Prevention of corrosion of iron by Zn coating is called**
      (a) Galvanization   (b) Cathodic protection
      (c) Electrolysis   (d) Photo electrolysis
22.   **Elements of zinc group (Zn, Cd, Hg) are called**
      (a) Noble metals   (b) Coinage metals   (c) Volatile metals   (d) Precious metals
23.   **Hydrogen can't be produced by the action of dil. H_2SO_4 on**
      (a) Cu   (b) Zn   (c) Fe   (d) Al
24.   **Which of the following could act as a propellent for rockets?**
      (a) liquid hydrogen + liquid nitrogen   (b) liquid oxygen + liquid argon
      (c) liquid hydrogen + liquid oxygen   (d) liquid nitrogen + liquid oxygen
25.   **Calcination and roasting are carried out in**
      (a) Blast furnace   (b) Muffle furnace
      (c) reverberatory furnace   d) open hearth furnace
26.   **The purpose of smelting an ore is to**
      (a) reduce it   (b) oxidize it
      (c) obtain an alloy   (d) separate volatile impurity
27.   **Cassiterite is an ore of**
      (a) Sn   (b) Cu   (c) Si   (d) Ca
28.   **The reaction of water with sodium is**
      (a) Endothermic   (b) Exothermic   (c) Reversible   (d) very low

29. **The pair whose both species are used in antacid medicinal preparation is**
(a) $NaHCO_3$ and $Mg(OH)_2$ (b) Na_2CO_3 and $Ca(HCO_3)_2$
(c) $Ca(HCO_3)_2$ and $Mg(OH)_2$ (d) $Ca(OH)_2$ and $NaHCO_3$

30. **Alumina (Al_2O_3) is**
(a) Acidic (b) Basic (c) Amphoteric (d) Neutral

31. **Semi-water gas is a mixture of**
(a) CO, H_2 and CO_2 (b) CO, H_2 and N_2 (c) CO_2, N_2 and H_2 (d) N_2, CO and coal gas

32. **Which of the following compounds is used in silvering of mirror?**
(a) $NaOH$ (b) $AgNO_3$ (c) Ag_2S (d) $AgBr$

33. **A bottle containing two immiscible liquids is given to you. They may be separated by using a**
(a) Fractionating column (b) Separating funnel
(c) Vacuum distillation (d) Steam distillation

34. **A compound which does not give positive test for nitrogen is**
(a) Urea (b) Azobenzene (c) Glycine (d) Phenyl hydrazine

35. **An organic compound contains 40% C, 6.66% H and rest oxygen. Its vapour density is 30. What will be its empirical formula?**
(a) CHO (b) CH_2O (c) C_2H_2O (d) CH_4O

36. **IUPAC name of the $Cl_3C.CHO$ is**
(a) Chloral (b) Trichloroacetaldehyde
(c) 1, 1, 1 – Trichloroethanal (d) 2, 2, 2 - Trichloroethanal

37. **In CH_3CH_2OH the bond that undergoes heterolytic cleavage most readily is**
(a) $C - C$ (b) $C - O$ (c) $C - H$ (d) $O - H$

38. **Resonance structure of molecule does not have**
(a) identical arrangement of atoms (b) nearly the same energy content
(c) the same number of paired electrons (d) identical bonding

39. **Among the following, the most acidic is**
(a) $ClCH_2COOH$ (b) CH_3COOH (c) $Cl_2CHCOOH$ (d) Cl_2CHCH_2COOH

40. **Solid CH_4 is**
(a) Molecular solid (b) Ionic solid (c) Covalent solid (d) Does not exist

41. **What is formed when calcium carbide reacts with heavy water?**
(a) C_2D_2 (b) CaD_2 (c) Ca_2D_2O (d) CD_2

42. **Benzene on treatment with a mixture of conc. HNO_3 and con. H_2SO_4 at 100°C gives**
(a) Nitrobenzene (b) m-Dinitrobenzene (c) p-Dinitrobenzene (d) o-Dinitrobenzene

43. **In SN^1 reaction the racemization takes place. It is due to**
(a) inversion of configuration (b) retention of configuration
(c) conversion of configuration (d) inversion and retention of configuration

44. **Chloropicrin is obtained by the reaction of**
(a) steam on carbon tetrachloride (b) nitric acid on chlorobenzene
(c) chlorine on picric acid (d) nitric acid on chloroform

45. **The fermentation of starch to give alcohol occurs mainly with the help of**
(a) O_2 (b) Air (c) CO_2 (d) Enzyme

46. **Ozonolysis of an organic compound gives formaldehyde as one of the products. This confirms the presence of**
(a) two ethylenic double bonds (b) a vinyl group
(c) an isopropyl group (d) an acetylenic group

47. **Which compound does not undergo Cannizzaro condensation?**
(a) Methanal (b) Phenyl methanal (c) 2,2-Dimethylbutanal (d) Phenyl ethanal

48. **Carboxylic acids are more acidic than phenol and alcohol because of**
(a) intermolecular hydrogen bonding (b) formation of dimers
(c) highly acidic hydrogen (d) resonance stabilization of their conjugate base

49. **Nitrobenzene can be converted into Hydrazobenzene by reduction with**
(a) Zn and HCl (b) Zn and alc. NaOH (c) Zn and aq. NaOH (d) NH_2NH_2 and alc. KOH

50. **Which one of the following is the reagent used to identify glucose?**
(a) Neutral ferric chloride (b) Chloroform and alc. KOH
(c) Ammoniacal silver nitrate (d) Sodium ethoxide

51. **The sum of two unit vectors is unit vector, find their difference**
(a) 1 (b) $\sqrt{2}$ (c) $\sqrt{3}$ (d) Zero

52. **A body moves 30 m due north, 20 m due east and $30\sqrt{2}$ due south west. The displacement covered by the body from its initial position is**
(a) 14m S-W (b) 28 m south (c) 10 m west (d) 18 m south

53. **If an automobile moves with constant power P, the relation between velocity and time will be**
(a) $v \propto t^{1/2}$ (b) $v \propto t^{3/2}$ (c) $v \propto t^2$ (d) $v \propto t$

54. **Two vehicles are describing uniform circular motion along two circular tracks of radii R_1 and R_2 such that these vehicles complete one revolution in equal time, then the ratio of their acceleration is**
(a) 1 : 1 (b) $R_1 : R_2$ (c) $R_2 : R_1$ (d) $R_1^2 : R_2^2$

55. **When the earth doesn't rotate about its axis then what effect can be seen in its gravity? (in the equator)**
(a) will increase (b) will decrease (c) remain same (d) cannot be said

56. **If no external force is applied in a body, the velocity of the centre of mass**
    (a) zero   (b) increases   (c) decreases   (d) remain constant

57. **A particle is vibrating simple harmonically with an amplitude 'a'. The displacement of the particle when its energy is half kinetic and half potential is**
    (a) a/2   (b) a/$\sqrt{2}$ (c) a/4   (d) zero

58. **A metallic bar is heated from 0°C to 100°C but it is so held that it can neither expand nor bend, then the force developed is**
    (a) F ∝ ℓ (b) F ∝ ℓ^{-1} (c) F ∝ ℓ° (d) F ∝ A^{-1}

59. **Detergents in hot water enable grease to be removed from plates by**
    (a) decreasing the density of the liquid   (b) increasing the temperature of the liquid
    (c) decreasing the contact angle   (d) raising the surface tension

60. **One poise is equal to**
    (a) $\dfrac{1Ns}{m^2}$ (b) $\dfrac{10Ns}{m^2}$ (c) $\dfrac{0.1Ns}{m^2}$ (d) $\dfrac{0.01Ns}{m^2}$

61. **Centigrade and Fahrenheit thermometers are dipped in boiling water. The water temperature is lowered until the Fahrenheit thermometer registers 140°F. The fall in temperature in the centigrade scale**
    (a) 25°C   (b) 30°C   (c) 35°C   (d) 40°C

62. **The brass disc fits tightly in a hole in a steel plate. To lose the disc from the hole, we should**
    (a) heat the system   (b) cool the system   (c) apply strong force   (d) it cannot be separated

63. **On four different days, the temperature is the same. A man feels hottest when the relative humidity is**
    (a) 99%   (b) 50%   (c) 30%   (d) 10%

64. **A box contains n molecules of gas. If the number of molecules is increased to 2n, the pressure of the gas will**
    (a) become half   (b) become 4 times   (c) remain unchanged   (d) become twice

65. **The ratio of the maximum wavelength of the Sun and Moon is in the ratio 1:400. What is the ratio of their temperature?**
    (a) 200: 1   (b) 400: 1   (c) 1: 200   (d) 1: 400

66. **Internal energy of an ideal gas depends on**
    (a) volume and temperature   (b) pressure and temperature
    (c) volume only   (d) temperature only

67. **A plane mirror is rotated by an angle θ. The change in deviation of a ray produced by the mirror is**
    (a) θ   (b) 2θ   (c) 3θ   (d) 4θ

68. **A light ray is passed from one medium of RI (n_1) to another medium of RI (n_2) as shown in fig. Then**

    (a) $n_1 > n_2$ (b) $n_1 < n_2$ (c) $n_1 = n_2$ (d) There is no relation between n_1 and n_2

69. **What is the angle of incident of prism of angle 60° and which has a refractive index $\sqrt{2}$ for which it gives minimum deviation?**
    (a) 60°   (b) 45°   (c) 90°   (d) 30°

70. **A convex lens of focal length F_1 is placed in contact with a concave lens of focal length F_2. The combination will act convergent lens if**
    (a) $F_1 < F_2$ (b) $F_1 > F_2$ (c) $F_1 = F_2$ (d) $F_1 > F_2$

71. **Resolving power of the human eye is**
    (a) 342   (b) 1/342   (c) 3420   (d) 1/3420

72. **If Young's experiment is performed inside water, the fringe width will**
    (a) decrease   (b) remain same   (c) increase   (d) cannot be said

73. **The phenomenon which is only associated with transverse waves is**
    (a) Diffraction   (b) Polarization   (c) Interference   (d) Refraction

74. **If two waves of the same frequency and same amplitude respectively, on superposition, produce a resultant disturbance of the same amplitude, the waves differ in phase by**
    (a) π   (b) 2π/3   (c) π/3   (d) zero

75. **A resonating column of air contains**
    (a) stationary longitudinal waves   (b) stationary transverse waves
    (c) transverse progressive waves   (d) longitudinal progressive waves

76. **The apparent wavelength of the light from a star moving from the Earth is 0.4% more than its real wavelength. The velocity of the star is**
    (a) 150 km/sec   (b) 15 km/sec   (c) 120 km/sec   (d) 30 km/sec

77. **The ratio of the forces between two small spheres charged to constant potentials in air and in a medium of dielectric constant K is**
    (a) 1 : K   (b) K : 1   (c) 1 : K^2 (d) K^2 : 1

78. **Two capacitors 1μF and 2μF are charged to 300V and 150V respectively and connected by a wire. The potential of the connected system is**
    (a) 166V   (b) 185V   (c) 133V   (d) 200V

79. **Figure represents a part of a closed circuit. The p.d between points A and B ($V_A - V_B$) is**

    2A   2 Ω   3V   1 Ω
    A ——→——WWWWW——||——WWWWW—— B

    (a) +9V   (b) –9V   (c) +3v   (d) +6V

80. **In an ordinary heater if the length of the coil is halved, then a given quantity of water will boil in**
    (a) less time   (b) more time   (c) same time   (d) cannot be compared

81. **Thomson's effect is not shown by**
    (a) Antimony   (b) Iron   (c) Lead   (d) Tin

82. **An ammeter of range 1A has a resistance 0.9Ω to extend the range to 10A. The necessary stunt required is**
    (a) 0.1Ω   (b) 0.01Ω   (c) 0.9Ω   (d) 1Ω

83. **Magnetic meridian is a**
    (a) Point source   (b) Horizontal plane   (c) Vertical plane   (d) A line directed from N–S

84. **An electron moving upwards vertically enters a uniform magnetic field directed towards the north. The force on the electron will be**
    (a) north   (b) east   (c) west   (d) south

85. **Two solenoids of the same cross-sectional area have their lengths and number of turns in the ratio of 1:2. The ratio of self-inductance of two solenoids is**
    (a) 1:1   (b) 1:2   (c) 2:1   (d) 1:4

86. **The reactance of a capacitance at 50Hz is 5Ω. If the frequency is increased to 100Hz. The new reactance is**
    (a) 5Ω   (b) 10Ω   (c) 2.5Ω   (d) 125Ω

87. **The power factor of a series RL circuit is 0.5. If R = 100Ω, F = 50Hz, then L is**
    (a) $\dfrac{\sqrt{3}}{\pi}$ (b) πH   (c) $\sqrt{2\pi}$ H   (d) $\dfrac{4\pi}{\sqrt{2}}$ H

88. **Cathode rays are produced when the pressure in the discharge tube is of the order**
    (a) 76 cm of Hg   (b) 10^{-6} cm of Hg   (c) 1 cm of Hg   (d) $10^{-2} - 10^{-3}$ mm of Hg

89. **An α-particle and a proton are accelerated through the same potential. The ratio of final velocity attained by them**
    (a) $\sqrt{2}:1$ (b) $1:1$ (c) $1:\sqrt{2}$ (d) $1:2$

90. **X-rays of wavelength 3Å have a frequency of**
    (a) 10 Hz   (b) 10^{18} Hz   (c) 3×10^4 Hz   (d) 10^2 Hz

91. **Radiation coming from the Lyman series falls in the range**
    (a) Visible   (b) Infrared   (c) Ultraviolet   (d) Far infrared

92. **What fraction of a radioactive substance of initial mass is left after 4 days if its half-life is 8 days?**
    (a) $\dfrac{N_0}{\sqrt{2}}$ (b) $\dfrac{N_0}{2}$ (c) N_0 (d) $\dfrac{N_0}{4}$

93. **In fusion, % of mass converted into energy is about**
    (a) 0.01%   (b) 0.1%   (c) 1%   (d) 10%

94. **Positron has**
    (a) no charge and spin   (b) some mass and some charge
    (c) no mass and spin   (d) some mass but no charge

95. **Two photons approach each other. Their relative velocity will be**
    (a) 2c   (b) c   (c) $\dfrac{c}{2}$ (d) zero

96. **If the rest mass of a particle is m_0, then its mass when it moves with velocity 0.8c is**
    (a) $\dfrac{6}{5}m_0$ (b) $2\,m_0$ (c) $\dfrac{3}{2}\,m_0$ (d) $\dfrac{5}{3}\,m_0$

97. **Two inputs of NAND gates are shorted. This gate is equivalent to**
    (a) OR gate   (b) AND gate   (c) NOT gate   (d) NOR gate

98. **Before the saturation state of the diode at the plate voltages of 400V and 200V respectively the current is I_1 and I_2 respectively. The ratio of I_1 to I_2 will be**
    (a) $\dfrac{\sqrt{2}}{4}$ (b) $2\sqrt{2}$ (c) 2   (d) 1/2

99. **In an NPN transistor, the collector current is 10mA. If 90% of the electrons emitted reach the collector; then**
    (a) I_E = 1mA I_B = 11mA   (b) I_E = 11mA I_B = 1mA
    (c) I_E = 1mA I_B = 9mA   (d) I_E = 9mA I_B = 1mA

100. **The silicon semiconductor formed by doping trivalent atoms will be**
    (a) n-type   (b) p-type   (c) n-p-n type   (d) p-n-p type

101. **Study of treatment of disease is**
    (a) Aceology   (b) Audiology   (c) Angiology   (d) Oncology

102. **Pyorrhoea is caused by**
    (a) *Entamoeba coli*   (b) *E. gingivalis*   (c) *E. histolytica*   (d) *Escherian coli*

103. **Maurer's dot is produced by**
    (a) *P. vivax*   (b) *P. ovalae*   (c) *P. malariae*   d) *P. falciparum*

104. **Idochromatin in *Paramecium* is produced by**
    (a) Nucleus   (b) micronucleus   (c) macronucleus   (d) cytopyge

105. **Which period is known for the origin of amphibians?**
(a) Cambrian   (b) Ordovician   (c) Silurian   (d) Devonian

106. **Among the following organ, which is vestigial in humans?**
(a) Incisor   (b) Canine   (c) Premolar   (d) Molar

107. **The ancestral man who made the picture is**
(a) Java   (b) Handy   (c) Neanderthal   (d) cro-magnon

108. **Which types of spicules are found in *Leucosolenia*?**
(a) Spongin fibre   (b) siliceous spicules   (c) calcareous spicules   (d) all of them

109. **Which type of digestion occurs in *Hydra* is**
(a) Extra cellular   (b) Intracellular
(c) extracellular then intracellular   (d) intracellular then extracellular

110. **Neuron in earthworm is**
(a) Sensory   (b) motor   (c) adjuster   (d) unipolar.

111. **In earthworm chromophil cell produces**
(a) Saliva   (b) mucin   (c) proteolytic enzyme   (d) amylase

112. **Cockroach is**
(a) Ureotelic   (b) uricotelic   (c) ammonotelic   (d) aminotelic

113. **How many pairs of vocal cords are found in frog?**
(a) 2   (b) 1   (c) 3   (d) 4

114. **Gastrulation process never complete without**
(a) Epiboly   (b) invagination   (c) involution   (d) rotation

115. **Which type of migration occurs in Eel Fish?**
(a) Catadromous   (b) Anadromous   (c) Occeanodromous   (d) Potamodromous

116. **Which type of adaptation occurs in *Exocoetus*?**
(a) Aquatic   (b) Volant   (c) both a and b   (d) arboreal

117. **Earthworm locomotes by setae with muscle and coelomic fluid. Setae present in all segment except 1st, last and clitellum region towards ventral surface. By which cell, setae are produced in earthworms?**
(a) Chloragogen cell   (b) Trichogen cell
(c) Blood gland cell   (d) Setae forming cell.

118. **Chill- chill fever is caused due to release of**
(a) Trophozoites   (b) Cryptozoites
(c) micro-meta cryptozoites   (d) Merozoites

119. **What is the female counter part of prostate gland in the male?**
(a) Bartholin's gland   (b) Uterus   (c) Clitoris   (d) Graafian follicles

120. **In mammals, mammary glands are modified form of**
(a) Sweat Glands   (b) Sebaceous glands   (c) Thymus Glands   (d) Meibomian glands

121. **Vermiform appendix is a part of**
(a) Nervous System   (b) Digestive System   (c) Vascular System   (d) Reproductive System

122. **The endocrine part of the pancreas is known as**
(a) Crypts of Lieberkuhm   (b) Islets of Langerhans
(c) Payer's patches   (d) Acini

123. **Where does fertilization take place in human beings?**
(a) Uterus   (b) Vaginal   (c) Ovary   (d) Fallopian tubes

124. **Zymogen cells of gastric glands secrete**
(a) Pepsinogen   (b) Chemotrypsin   (c) Amylase   (d) Trypsin

125. **The right auriculo-ventricular aperture in mammal is guarded by**
(a) Bicuspid Valve   (b) Spiral Valve   (c) Semilunar Valve   (d) Tricuspid Valve

126. **Rete testis in man is a part of**
(a) Seminiferous tubules (b) Vasa efferentia   (c) Epididymis   (d) Vas deferens

127. **Reflex action is exhibited by**
(a) Brain   (b) Autonomic Nervous System
(c) Spinal Cord   (d) Peripheral Nervous System

128. **Serum is**
(a) Plasma   (b) plasma minus fibrinogen
(c) plasma minus calcium ion   (d) blood minus RBC.

129. **Hormone which regulates metamorphosis of tadpole is**
(a) G.H   (b) Thyroxin   (c) ACTH   (d) TSH

130. **Organs of Corti are related with**
(a) Sight   (b) Body equilibrium   (c) Hearing   (d) Taste

131. **Graafian follicles are found in**
(a) Testis   (b) Stomach   (c) Ovary   (d) Spleen

132. **Which type of cleavage occurs in frog?**
(a) Bilateral, holoblastic and equal   (b) Spiral , holoblastic and unequal
(c) Bilateral, holoblastic and unequal   (d) Spiral , holoblastic and equal

133. **Elderly people loss flexibility of the lens of eye and use bifocal lens for corrected vision. Which disease occurs in his/her eye?**
(a) cataract   (b) Presbyopia   (c) Hypermetropia   (d) Myopia

134. **Limbic system controls**
(a) Emotion   (b) Learning   (c) Memory   (d) all of them

135. **The bacterium that causes typhoid resides in chronic carriers in**
(a) Duodenum   (b) Ileum   (c) Gall bladder   (d) Urinary bladder

136. **Test for tuberculosis is**
(a) Mentos test   (b) Widal test   (c) Mantoux test   (d) Schick test

137. **The chylomicrons in fat absorption are comprised of**
(a) Bile salt, fatty acids and cholesterol   (b) Protein, fatty acids, and glycerol
(c) Fatty acids, Triglycerides and lipoprotein   (d) Fatty acids, sugar and protein

138. **The hardest substance in human body is**
(a) Keratin   (b) Dentine   (c) Enamel   (d) Chondrin

139. **Iron is absorbed from**
(a) Duodenum   (b) Jejunum
(c) Ileum   (d) Duodenum and proximal part of jejunum

140. **Jaundice is caused by**
(a) Excessive collection of iron in the body   (b) Excessive protein in the body
(c) Excess level of bilirubin in the body   (d) Excess vitamin A in the body

141. **Which of the following structures is not found in a prokaryotic cell?**
(a) Mesosome   (b) Plasma membrane   (c) Nuclear envelope   (d) Ribosome

142. **Select the mismatch**
(a) Gas vacuoles – Green bacteria   (b) Large central vacuoles – Animal cells
(c) Protists – Eukaryotes   (d) Methanogens – Prokaryotes

143. **Conjoint and closed vascular bundles are found in**
(a) Sunflower stem   (b) Maize stem   (c) Cucumber root   (d) Mango root

144. **Agar-Agar is commercially obtained from**
(a) green algae   (b) blue-green algae   (c) brown algae   (d) red algae

145. **Which of the statements regarding haplontic life cycle is incorrect?**
(a) Sporophytic generation is represented only by the one-celled zygote
(b) There is no free-living sporophyte
(c) Mitosis in the zygote results in the formation of haploid spores
(d) The haploid spores divide mitotically and form the gametophyte

146. **In .... , a dominant and independent haploid gametophyte alternates with a short lived, dependent sporophyte**
(a) algae   (b) bryophytes   (c) pteridophytes   (d) gymnosperms

147. **The giant Redwood tree (*Sequoia sempervirens*) is a/an**
(a) angiosperm   (b) tree fern   (c) pteridophyte   (d) gymnosperm

148. **A prothallus is**
(a) A structure in pteridophytes formed before the thallus develops
(b) A sporophytic free living structure formed in pteridophytes
(c) A gametophytic free living structure formed in pteridophytes
(d) A primitive structure formed after fertilization in pteridophytes

149. **Gymnosperms do not bear fruits because they do not have**
(a) seeds   (b) ovary wall   (c) ovule   (d) leaves

150. **Who gave sexual system of classification?**
(a) Aristotle   (b) Theophrastus   (c) C. Linnaeus   (d) E. Haeckel

151. **.................. is the most abundant protein in animal world and .... is the most abundant protein in the whole biosphere**
(a) Collagen, Rubisco   (b) Collagen, Keratin   (c) Keratin, Rubisco   (d) Keratin, collagen

152. **The DNA double helix contains .... base pairs per turn of the helix**
(a) 10   (b) 11   (c) 20   (d) 5

153. **The branch of science which studies the interactions among organisms and between organisms and physical environment is called as**
(a) Epidemiology   (b) Ecology   (c) Ethology   (d) Etiology

154. **Mango trees do not and cannot grow in temperate regions. The most important environmental factor responsible for it is**
(a) Soil   (b) Temperature   (c) Water   (d) Light

155. **Lichens are the associations of**
(a) Bacteria and fungus (b) Algae and bacterium   (c) Fungus and algae   (d) Fungus and virus

156. **Species interaction with negative influence on both is referred to as**
(a) Amensalism   (b) Mutualism   (c) Commensalism   (d) Competition

157. **Which of the following ecological pyramids is always upright?**
(a) Pyramid of energy   (b) Pyramid of biomass   (c) Pyramid of number   (d) Pyramid of dry biomass

158. **The term 'molecular scissors' refer to**
(a) Recombinant DNA   (b) Restriction endonuclease enzyme
(c) Taq polymerase   (d) Palindromic nucleotide sequences

159. **A device in which large volume of living cells are cultured in order to get a specific product is called**
(a) PCR   (b) agitator   (c) bioreactor   (d) assimilator

160. **Bt cotton is not**
(a) a GM plant   (b) insect resistant
(c) a bacterial gene expressing system   (d) Resistant to all pesticide

161. **Animals that have had their DNA manipulated to possess and express a foreign gene are called**
(a) transgenic animals   (b) somatic hybrids   (c) soma clones   (d) super animals

162. **Transposons can be used during which one of the following?**
(a) Polymerase chain reaction   (b) Gene silencing
(c) Autoradiography   (d) Gene sequencing

163. **ABO blood grouping in human beings cites the example of**
(a) Incomplete dominance   (b) Co-dominance
(c) Multiple allelism   (d) Polygenic inheritance

164. **ABO blood groups in human beings are controlled by the gene I. The gene I has three alleles – I^A, I^B and I. Since there are three different alleles, six different genotypes are possible. How many phenotypes can occur?**
(a) Six   (b) Two   (c) Three   (d) Four

165. **Which of the following characters was not chosen by Mendel?**
(a) Pod shape   (b) Pod colour   (c) Position of flower   (d) Position of pod

166. **Which of the following will not result in variations among siblings?**
(a) Independent assortment of genes   (b) Crossing over
(c) Linkage   (d) Mutation

167. **Synthesis of DNA from RNA is explained by**
(a) Translation   (b) Reverse transcription
(c) Replication   (d) Transcription

168. **Purines found in both DNA and RNA are**
(a) Cytosine and thymine   (b) Adenine and thymine
(c) Adenine and guanine   (d) Guanine and cytosine

169. **During DNA replication, Okazaki fragments are used to elongate**
(a) the lagging strand towards replication fork
(b) the leading strand away from replication fork
(c) the lagging strand away from replication fork
(d) the leading strand towards replication fork

170. **If adenine makes 30% of DNA molecule, what will be the percentage of thymine in it?**
(a) 20%   (b) 25%   (c) 30%   (d) 40%

171. **In E. coli, the lac operon gets switched on when**
(a) Lactose is present and it binds to the repressor
(b) Repressor binds to operator
(c) RNA polymerase and it binds to RNA polymerase
(d) Lactose is present and it binds to RNA polymerase

172. **A nucleoside differs from a nucleotide. It lacks the**
(a) base   (b) sugar   (c) phosphate group   (d) hydroxyl group

173. **Some amino acids are coded by more than one codon, hence the genetic code is**
(a) overlapping   (b) degenerate   (c) wobbled   (d) unambiguous

174. **Which of the following has proved helpful in preserving pollen as fossils?**
(a) Pollen kit   (b) Cellulosic intine   (c) Oil content   (d) Sporopollenin

175. **In ginger, vegetative propagation occurs through**
(a) bulbils   (b) runners   (c) rhizome   (d) offsets

176. **The Avena curvature is used for bioassay of which hormone?**
(a) IAA   (b) Ethylene   (c) ABA   (d) GA_3

177. **Which of the following is not a product of light reaction of photosynthesis?**
(a) ATP   (b) NADH   (c) NADPH   (d) Oxygen

178. **At the end of glycolysis, six carbon compound ultimately changes into**
(a) Ethyl alcohol   (b) Acetyl Co-A   (c) Pyruvic acid   (d) ATP

179. **Meristematic tissue responsible for increase in girth of tree trunk is**
(a) Intercalary meristem   (b) Lateral meristem
(c) Phellogen   (d) Apical meristem

180. **The process responsible for facilitating loss of water in liquid form from tip of grass blades at night and in early morning is**
(a) transpiration   (b) root pressure   (c) imbibition   (d) plasmolysis

181. **If 'JUICE' is coded as '19-41-17-5-9', then 'TOY' will be coded as.**
(a) 39-29-49   (b) 41-31-51   (c) 13-23-3   (d) 15-25-5

182. **S, M, T, W, T, F, ?**
(a) S   (b) M   (c) T   (d) K

183. **Which one will replace the question mark?**

(a) 8   (b) 14   (c) 10   (d) 6
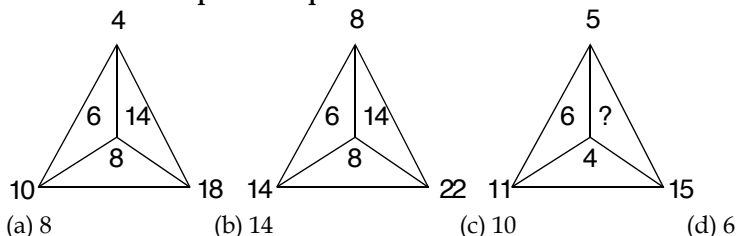
184. **Which of the following figure represents the correct relation?**
Currency, Rupee, Dollar

A   B   C   D
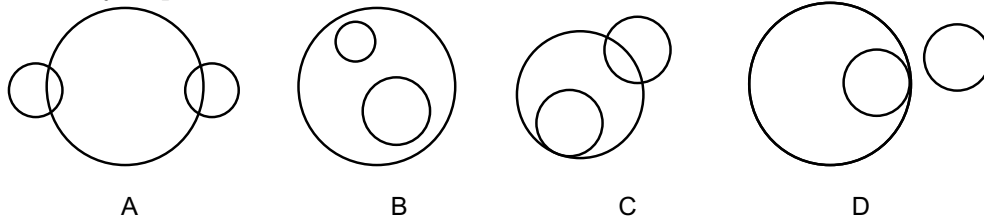
185. **Pointing to a man, a lady said, "His mother is the only daughter of my mother." How is the lady related to the man?**
(a) Mother   (b) Daughter   (c) Sister   (d) Aunt

186. **In a row at a bus stop, A is 7ᵗʰ from the left and B is 9ᵗʰ from the right. They both interchange their positions. Now, A becomes 11ᵗʰ from the left. How many people are there in the row?**
(a) 10   (b) 20   (c) 19   (d) 18

187. **If 3ʳᵈ December 2003 was Sunday, what day was 3ʳᵈ January 2001?**
(a) Friday   (b) Wednesday   (c) Monday   (d) Tuesday

188. **Hemant, in order to go to university, started from his house in the east and came to a crossing. The road to the left ends is a theatre, straight ahead is the hospital. In which direction is the university?**
(a) North   (b) South   (c) East   (d) West

189. **Who among P, Q, R, S, T is in exactly the middle while standing in a line?**
(i)   Q is to the immediate right of R.   (ii)   T is exactly between P and R.
(iii) Q is exactly between R and S.
(a) P   (b) Q   (c) R   (d) S

190. **Statement:** Should people with educational qualification higher than the optimum requirements be debarred from seeking jobs?
Arguments:
I.   No. It will further aggravate the problem of educated unemployment.
II.   Yes. It creates complexity among employees and affects the work adversely.
III.   No. This goes against the basic rights of individuals.
IV.   Yes. This will increase productivity.
A.   Only I and III are strong.
B.   All are strong.
C.   Only II and IV are strong.
D.   Only III is strong..

191. **A trader gains 15% after selling an item at a 10% discount on the printed price. The ratio of the cost price and the printed price is?**
(a) 18:23   (b) 17:18   (c) 17:23   (d) 18:25

192. **C's age is twice the average age of A, B and C. A's age is one-half the average age of A, B and C. If B is 5 years old, the average age of A, B and C is**
(a) 9 years   (b) 10 years   (c) 12 years   (d) 15 years

193. **The average of the first 9 prime number is:**
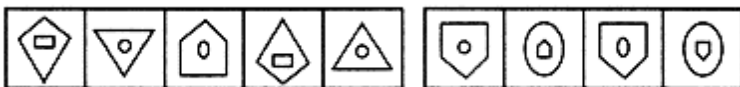(a) 9   (b) 11   (c) $11\frac{1}{9}$ (d) $11\frac{2}{9}$

194. **If 6 men and 8 boys can do a piece of work in 10 days and 26 men and 48 boys can do the same in 2 days, then the time taken by 15 men and 20 boys to do same type of work will be**
(a) 7 days   (b) 6 days   (c) 5 days   (d) 4 days

195. **Select a figure from the Answer Figures which will continue the same series as established by the Problem Figures.**
        Problem Figures: **Answer Figures:**

        (1)   (2)   (3)   (4)   (5)   (a)   (b)   (c)   (d)

196. **Select a suitable figure from the Answer Figures that would replace the question mark (?).**
        Problem Figures: **Answer Figures:**

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

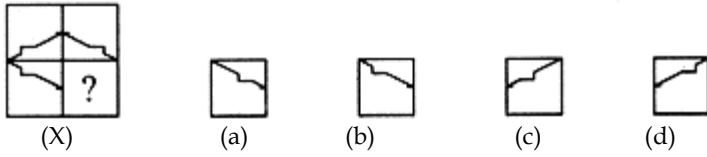197. **Select a suitable figure from the Answer Figures that would replace the question mark (?).**
        Problem Figures: **Answer Figures:**
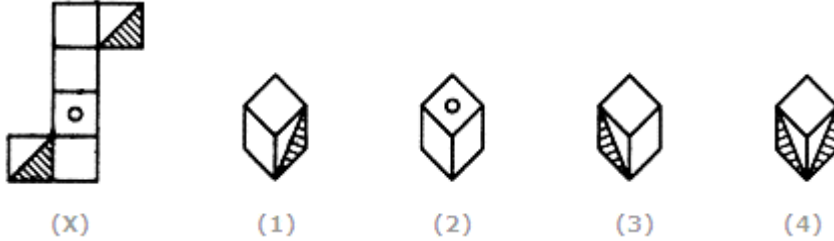
        (1)   (2)   (3)   (4)   (a)   (b)   (c)   (d)

198.   In each of the following questions, select a figure from amongst the four alternatives, which when placed in the blank space of figure (X) would complete the pattern.
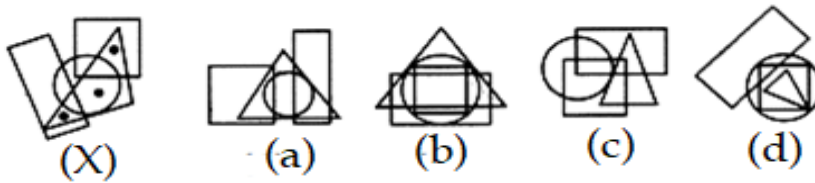

(X)   (a)   (b)   (c)   (d)

199.   Choose the box that is similar to the box formed from the given sheet of paper (X).

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

(a) 1 and 4 only   (b) 1 and 3 only   (c) 3 and 4 only   (d) 2 and 4 only

200.   From amongst the figures marked (a), (b), (c) and (d), select the figure which satisfies the same conditions of placement of the dots as in figure (X).

(X)   (a)   (b)   (c)   (d)

♦♦♦ Thank You !!! ♦♦♦