



CEE MODEL ENTRANCE EXAM

(SET-7)

Instructions:

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

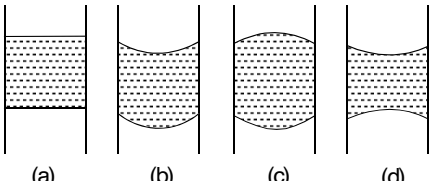
Date : 2081/10/12
(Jan 25)

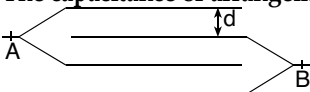
Duration : 3 hours
Time : 7 A.M. – 10 A.M.

- How many moles of HCl react with one mole of KMnO_4 ?
(a) 3 (b) 6 (c) 5 (d) 8
- If a 0.24g sample is burnt in air to produce 0.22g of CO_2 , what is the percent of carbon in the sample?
(a) 92% (b) 55% (c) 25% (d) 10%
- Orbitals possessing the almost same energy are called
(a) Hybrid orbitals (b) Valence orbitals (c) p-orbitals (d) Degenerate orbitals
- How many electrons are needed to balance the equation?
 $\text{XO}_3^- + \text{H}_2\text{O} + e^- \rightarrow \text{XH}_3 + \text{OH}^-$
(a) 8 (b) 6 (c) 4 (d) 3
- Conjugate base of Hydrazoic acid?
(a) HN_3^- (b) N_2^- (c) N_3^- (d) N^{3-}
- What volume of water is to be added to 150ml of 0.2N Na_2CO_3 solution to make it 0.05N?
(a) 450ml (b) 600ml (c) 750ml (d) 300ml
- Dialysis can separate
(a) glucose and fructose (b) glucose and naccine (c) glucose and sucrose (d) glucose and proteins
- In a crystal, the atoms are located at the position of
(a) maximum P.E (b) minimum P.E (c) zero P.E (d) infinite P.E
- Which of the following pairs will diffuse at the same rate through a porous plate?
(a) CO, NO_2 (b) NO_2 , CO_2 (c) NH_3 , NO_2 (d) NO, C_2H_6
- Liquor ammonia bottles are opened after cooling. This is because
(a) it is a mild explosive (b) it is a corrosive liquid
(c) it is a lachrymatory (d) it generates high vapour pressure
- The order of O-O bond length in O_2 , H_2O_2 , O_3 is
(a) $\text{O}_2 > \text{O}_3 > \text{H}_2\text{O}_2$ (b) $\text{O}_2 > \text{H}_2\text{O}_2 > \text{O}_3$ (c) $\text{H}_2\text{O}_2 > \text{O}_3 > \text{O}_2$ (d) $\text{O}_2 > \text{H}_2\text{O}_2 > \text{O}_3$
- If in the reaction $\text{N}_2\text{O}_4 \rightarrow 2\text{NO}_2$, α is the degree of dissociation of N_2O_4 , the number of molecules at equilibrium will be
(a) 3 (b) 1 (c) $1 - \alpha$ (d) $1 + \alpha$
- What will be the pH of a 10^{-8} M HCl solution?
(a) 8 (b) 7 (c) 6.98 (d) 14
- A first order reaction is 75% complete after 50 minutes. When was 50% of the reaction completed?
(a) 5 minutes (b) 10 minutes (c) 20 minutes (d) 25 minutes
- Four alkali metals A, B, C, and D are having respectively, standard electrode potentials as -3.05, -1.66, -0.40, and 0.8V. Which one is more reducing?
(a) A (b) B (c) C (d) D
- If the value of $H_R > H_P$, then the reaction is
(a) Exothermic (b) Endothermic (c) Spontaneous (d) Cannot be predicted
- The process requiring the absorption of energy is
(a) $\text{F} \rightarrow \text{F}^-$ (b) $\text{Cl} \rightarrow \text{Cl}^-$ (c) $\text{O} \rightarrow \text{O}^{2-}$ (d) $\text{H} \rightarrow \text{H}^-$
- Na^+ is isoelectronic with
(a) Ca^{2+} (b) Mg^{2+} (c) Zn^{2+} (d) Cu^{2+}
- The process in which metals is obtained in a fused state is called
(a) Roasting (b) Smelting (c) Calcination (d) Froth floatation
- In the extraction of copper from its sulphide ore, the metal is formed by the reduction of Cu_2O with
(a) FeS (b) CO (c) Cu_2S (d) SO_2
- An oxide that reacts exothermally with water is
(a) CaO (b) MgO (c) FeO (d) Al_2O_3
- Electrolysis of molten sodium chloride leads to the formation of
(a) $\text{Na} + \text{H}_2$ (b) $\text{Na} + \text{O}_2$ (c) $\text{H}_2 + \text{O}_2$ (d) $\text{Na} + \text{Cl}_2$
- Which is most soluble in water?
(a) BaSO_4 (b) CaSO_4 (c) MgSO_4 (d) BeSO_4
- Borazole is known as
(a) Organic benzene (b) Organic compound (c) Inorganic benzene (d) Inorganic compound
- Carbon monoxide is absorbed by
(a) Ammonical solution of cuprous chloride (b) Nickel tetracarbonyl
(c) Alcohols (d) Plants
- Conc. HNO_3 stains skin yellow because
(a) The proteins are converted into xanthoproteins (b) The water is removed by the acid
(c) The skin is burnt by the acid (d) Nitrocellulose is formed
- In the contact process, the arsenic impurity is removed by
(a) Pt (b) V_2O_5 (c) $\text{Fe}(\text{OH})_3$ (d) FeO
- Fluorine reacts with water to give
(a) HF and O_2 (b) HF and OF_2 (c) HF and O_3 (d) HF, O_2 and O_3
- BP and MP of inert gases are
(a) High (b) Low (c) Very high (d) Very low

30. Brass is an alloy of
 (a) Sn + Cu (b) Zn + Cu + Sn (c) Cu + Zn (d) Sn + Ag
31. Matte contains
 (a) Fe (b) Cu₂S (c) Cu₂S and FeS (d) CuS + Fe₂S₃
32. Which will give borax bead test with blue bead?
 (a) Cr³⁺ (b) Co³⁺ (c) Ni²⁺ (d) Cd²⁺
33. Two immiscible liquids may be separated by using
 (a) Fractionating column (b) Separating funnel
 (c) Vacuum distillation (d) Steam distillation
34. Name the following compound

$$\begin{array}{c} \text{CH}_3 \qquad \text{OH} \\ | \qquad | \\ \text{H}_3\text{C}-\text{CH}-\text{CH}_2-\text{CH}-\text{CH}_2\text{Cl} \end{array}$$
 (a) 4, 4-dimethyl-1-chloro-butanol (b) 1-chloro-4-hydroxy-2-butanol
 (c) 1-chloro-4-methyl-2-pentanol (d) 1-methyl-4-chloro-4-hexanol
35. When potassium acetate is electrolysed we get
 (a) C₂H₂ (b) C₃H₈ (c) C₂H₄ (d) C₂H₆
36. In a group of isomeric alkyl halides, the order of boiling point is
 (a) primary < secondary < tertiary (b) primary > secondary < tertiary
 (c) primary < secondary > tertiary (d) primary > secondary > tertiary
37. An organic compound dissolved in dry benzene evolves hydrogen on treatment with sodium. It is
 (a) Aldehyde (b) Ketone (c) Alcohol (d) Ether
38. Ethers are not distilled to dryness for fear of explosion. This is due to the formation of
 (a) Peroxides (b) Ketones (c) Oxides (d) Alcohols
39. Low reactivity of ketones w.r.t aldehydes is due to
 (a) greater steric hindrance
 (b) greater +I effect but less steric hindrance
 (c) greater +I effect of alkyl group
 (d) both greater +I effect of alkyl group and greater steric hindrance of alkyl group
40. In the following reaction product formed is CH₃COCl $\xrightarrow[\text{BaSO}_4]{\text{Pd/H}_2}$ Product
 (a) acetaldehyde (b) acetone (c) carboxylic acid (d) acetic anhydride
41. The reaction of acid derivatives with nucleophiles is in the order
 (a) RCONH₂ > RCOOR > (RCO)₂O > RCOCl (b) RCOCl > (RCO)₂O > RCOOR > RCONH₂
 (c) RCOCl > (RCO)₂O > RCONH₂ > RCOOR (d) RCOCl > RCOOR > (RCO)₂O > RCONH₂
42. Which of the following is acid anhydride?
 (a) Al₂O₃ (b) CO₂ (c) CO (d) CaO
43. Acetone oxime on catalytic hydrogenation gives
 (a) Propanamine (b) Isopropyl amine (c) Ethyl methyl amine (d) Ethyl amine and CH₄
44. Which of the following is known as the artificial oil of bitter almonds?
 (a) Benzene (b) Aniline (c) Phenol (d) Nitrobenzene
45. Which of the following is a step growth polymer?
 (a) Bakelite (b) Polyethylene (c) Teflon (d) PVC
46. The drug used as an antidepressant is
 (a) Luminal (b) Tofranil (c) Mescaline (d) Sulphadiazine
47. Alizarin gives blue color by mordanting it with chloride of a metal. The metal ion is
 (a) Ba²⁺ (b) Al³⁺ (c) Cr³⁺ (d) Fe³⁺
48. Coal tar is the main source of
 (a) Cycloalkanes (b) Heterocyclic compounds
 (c) Aromatic compounds (d) Aliphatic compounds
49. When benzaldehyde is treated with acetic anhydride in the presence of sodium acetate, the reaction is called
 (a) Kolbe's reaction (b) Perkin's reaction
 (c) Aldol reaction (d) Cannizzaro's reaction
50. p-nitrophenol is a stronger acid than phenol because nitro group is
 (a) acidic (b) electron attracting (c) electron repelling (d) basic
51. If the time period of oscillation of a pendulum is measured as 2.5 s using a stopwatch with the least count 1/2 s, then the permissible error in the measurement is
 (a) 10% (b) 15% (c) 20% (d) 25%
52. Which one of the following quantities is an axial vector?
 (a) Force (b) Torque (c) Velocity (d) acceleration
53. A drunkard is walking along a straight road. He takes 5 steps forward and 3 steps backward and so on. Each step is one metre long and takes one second. There is a pit on the road 11 metre away from the starting point. The drunkard will fall into the pit after
 (a) 21 s (b) 29 s (c) 31 s (d) 41 s

54. The air friction produces a vertical retardation equal to 10% of the acceleration due to gravity ($g = 10 \text{ ms}^{-2}$). The maximum height will be decreased by:
 (a) 11% (b) 10% (c) 9% (d) 8%
55. A person sitting in an open car moving at constant velocity throws a ball vertically up into the air. The ball falls
 (a) outside the car (b) in the car to the side of the person
 (c) in the car ahead of the person (d) exactly in the hand which threw it up
56. A rifle bullet loses $(1/20)^{\text{th}}$ of its velocity in passing through a plank. The least number of such planks required just to stop the bullet is
 (a) 5 (b) 10 (c) 20 (d) 11
57. The angular momentum of a moving body remains constant if
 (a) net external force is applied (b) net pressure is applied
 (c) net external torque is applied (d) net external torque is not applied
58. Two springs of spring constants k_1 and k_2 are joined in series. The effective spring constant of the combination is given by
 (a) $\sqrt{k_1 k_2}$ (b) $\frac{(k_1 + k_2)}{2}$ (c) $k_1 + k_2$ (d) $\frac{k_1 k_2}{k_1 + k_2}$
59. A vertical glass capillary tube, open at both ends, contains some water. Which of the following shapes may be taken by the water in the tube?
- 
- (a) (b) (c) (d)
60. Two hail stones with radii in the ratio of 1: 2 fall from a great height through the atmosphere. Then the ratio of their momenta after they have attained terminal velocity is:
 (a) 1 : 1 (b) 1 : 4 (c) 1 : 16 (d) 1 : 32
61. Which of the following waves is used in sonography?
 (a) Light (b) X-rays (c) Ultrasonic waves (d) Seismic waves
62. Beats are the result of
 (a) diffraction
 (b) destructive interference
 (c) constructive and destructive interference
 (d) superposition of two waves of nearly equal frequency
63. A star appears yellow. If it starts accelerating towards the earth how will its colour appear to change?
 (a) It will turn gradually red (b) It will turn gradually blue
 (c) It will turn suddenly red (d) It will turn suddenly blue
64. A bimetallic strip is made of aluminium and steel. If $\alpha_{\text{Al}} > \alpha_{\text{steel}}$ then on heating, the strip will
 (a) remain straight
 (b) get twisted
 (c) will bend with aluminium on concave side
 (d) will bend with steel on concave side
65. The freezing point of the liquid decreases when pressure is increased, if the liquid
 (a) Expands while freezing (b) Contracts while freezing
 (c) Does not change in volume while freezing (d) None of these
66. If C_H , C_N and C_O denote the r.m.s. velocities of hydrogen, nitrogen and oxygen respectively at a given temperature, then
 (a) $C_N > C_O > C_H$ (b) $C_H > C_N > C_O$ (c) $C_O = C_H = C_N$ (d) $C_O > C_H > C_N$
67. For nitrogen, $C_p - C_v = x$ and for argon, $C_p - C_v = y$. The relation between x and y is given by
 (a) $x = y$ (b) $x = 7y$ (c) $y = 7x$ (d) $x = y/2$
68. Four engines are working between the temperature ranges given below. For which temperature range the efficiency is maximum?
 (a) 100 K, 80 K (b) 40 K, 20 K (c) 60 K, 40 K (d) 120 K, 100 K
69. Newton's law of cooling is used in the laboratory for the determination of the
 (a) specific heat of gases (b) the latent heat of gases
 (c) specific heat of liquids (d) latent heat of liquids
70. In which of the following cases, man will not see an image greater than himself?
 (a) concave mirror (b) convex mirror (c) plane and concave mirror (d) Plane mirror
71. Monochromatic light is refracted from air into the glass of refractive index μ . The ratio of the wavelength of incident and refracted waves is
 (a) $1 : \mu$ (b) $1 : \mu^2$ (c) $\mu : 1$ (d) $1 : 1$
72. Stars are not visible in the day time because
 (a) stars hide behind the sun
 (b) stars do not reflect sun rays during day
 (c) stars vanish during the day
 (d) atmosphere scatters sunlight into a blanket of extreme brightness through which faint stars cannot be visible

73. A thin glass (refractive index 1.5) lens has optical power of $-8D$ in air. Its optical power in a liquid medium with refractive index 1.6 will be
 (a) 1 D (b) $-1 D$ (c) 25 D (d) $-25 D$
74. To increase both the resolving power and magnifying power of a telescope
 (a) both the focal length and aperture of the objective has to be increased
 (b) the focal length of the objective has to be increased
 (c) the aperture of the objective has to be increased
 (d) the wavelength of light has to be decreased
75. The dual nature of light is exhibited by
 (a) photoelectric effect (b) refraction and interference
 (c) diffraction and reflection (d) diffraction and photoelectric effect
76. The force between two charges situated in air is F . The force between the same charges if the distance between them is reduced to half and they are situated in a medium having dielectric constant 4 is
 (a) $\frac{F}{4}$ (b) $4F$ (c) $16F$ (d) F
77. The flux through a cube of side 'a' if a point charge of q is at one of its corner will be
 (a) $\frac{2q}{\epsilon_0}$ (b) $\frac{q}{8\epsilon_0}$ (c) $\frac{q}{\epsilon_0}$ (d) $\frac{q}{2\epsilon_0} 6a^2$
78. The capacitance of arrangement of 4 plates of area A at distance d as shown in Fig. is

 (a) $\epsilon_0 A/d$ (b) $2 \epsilon_0 A/d$ (c) $3 \epsilon_0 A/d$ (d) $4 \epsilon_0 A/d$
79. A uniform wire of resistance R , of radius r is uniformly drawn until its radius is reduced to r/n . Its new resistance is
 (a) nR (b) n^2R (c) n^3R (d) n^4R
80. A cell of internal resistance r is connected to an external resistance R . The current will be maximum in R , if
 (a) $R = r$ (b) $R < r$ (c) $R > r$ (d) $R = r/2$
81. The material of potentiometer wire is
 (a) Copper (b) Steel (c) Manganin (d) Aluminium
82. A charge q is moving in a magnetic field, then the magnetic force does not depend upon
 (a) charge (b) mass (c) velocity (d) magnetic field
83. If a long hollow copper pipe carries a direct current, the magnetic field associated with the current will be
 (a) only inside the pipe (b) only outside the pipe
 (c) neither inside nor outside the pipe (d) both inside and outside the pipe
84. Net magnetic flux through any closed surface is always
 (a) positive (b) negative (c) zero (d) cannot say
85. Average energy stored in a pure inductance L , when a current i flows through it is
 (a) Li^2 (b) $Li^2/2$ (c) $2Li^2$ (d) $Li^2/4$
86. The peak value of alternating current is $5\sqrt{2}$ ampere. The root mean square value of current will be
 (a) 5 A (b) 2.5 A (c) $5\sqrt{2}$ A (d) 10 A
87. An ideal transformer has N_P turns in the primary and N_S turns in the secondary. If voltage per turn is V_P for primary and V_S for secondary then $\frac{V_S}{V_P}$ is equal to
 (a) 1 (b) N_S/N_P (c) N_P/N_S (d) $(N_P/N_S)^2$
88. The important conclusion given by Millikan's experiment about the charge is
 (a) charge is never quantised (b) charge has no definite value
 (c) charge is quantised (d) charge on oil drop always increases
89. The electron in the hydrogen atom jumps from excited state ($n = 3$) to its ground state ($n = 1$) and the photons thus emitted irradiate a photosensitive material. If the work function of the material is 5.1 eV, the stopping potential is estimated to be
 (the energy of the electron in n^{th} state $E_n = -\frac{13.6}{n^2}$ eV)
 (a) 5.1 V (b) 12.1 V (c) 17.2 V (d) 7 V
90. Solid targets of different elements are bombarded by highly energetic electron beams. The frequency (f) of the characteristic X-rays emitted from different targets varies with atomic number Z as
 (a) $f \propto \sqrt{Z}$ (b) $f \propto Z^2$ (c) $f \propto Z$ (d) $f \propto Z^{3/2}$
91. If 13.6 eV energy is required to ionize the hydrogen atom, then the energy required to remove an electron from $n = 2$ is
 (a) 10.2 eV (b) 0 eV (c) 3.4 eV (d) 6.8 eV
92. The ratio of kinetic energy to the total energy of an electron in a Bohr orbit of the hydrogen atom is
 (a) 2 : -1 (b) 1 : -1 (c) 1 : 1 (d) 1 : -2
93. Two deuterons each of mass m fuse to form helium resulting in release of energy E . The mass of helium formed is
 (a) $m + E/c^2$ (b) $2m + E/c^2$
 (c) E/mc^2 (d) $2m - E/c^2$
94. The reaction ${}_{48}\text{Cd}^{107} \rightarrow {}_{47}\text{Ag}^{107}$ may occur
 (a) only by electron emission (b) only by electron capture
 (c) only by positron emission (d) either by electron capture or positron emission

95. **One curie represents**
(a) 3.7×10^7 disintegration/sec (b) 3.7×10^{10} disintegrations/sec
(c) 10^6 disintegration/sec (d) 1 disintegrations/sec
96. **During electromagnetic interaction, the particles exchanged are**
(a) Nutrons (b) Photons (c) Gravitons (d) Gluons
97. **In a semiconducting material, the mobilities of electrons and holes μ_e are μ_h respectively. Which of the following is true?**
(a) $\mu_e > \mu_h$ (b) $\mu_e < \mu_h$ (c) $\mu_e = \mu_h$ (d) $\mu_e < 0; \mu_h > 0$
98. **Barrier potential of a p-n junction diode does not depend upon**
(a) temperature (b) forward bias (c) doping density (d) diode design
99. **The output is low when either of the input is high, then this represents which of the following gates?**
(a) OR (b) NOR (c) AND (d) NAND
100. **Stars derive energy from**
(a) carbon cycle (b) nitrogen cycle (c) helium cycle (d) proton-proton cycle
101. **Presence of recessive traits is 16%. The frequency of the dominant allele in a population is**
(a) 0.6 (b) 0.32 (c) 0.84 (d) 0.92
102. **Eusthenopteron connects**
(a) Reptiles and birds (b) Birds and mammals
(c) Fishes and amphibians (d) Amphibians and reptiles
103. **The age of human being belongs to**
(a) Pliocene (b) Pleistocene (c) Holocene (d) Miocene
104. **Pre-historic man is**
(a) Cro-Magnon man (b) Neanderthal man
(c) Homo erectus (d) Homo Sapiens
105. **Speed of ciliary movement of Protozoans ranges from**
(a) 0.2 – 3 μ m/sec. (b) 0.4 – 2m/sec. (c) 15 – 300 μ m/sec. (d) 8.1 m/sec
106. **Which type of pseudopodia is found in *Amoeba proteus*?**
(a) Lobopodia (b) Filopodia (c) Reticulopodia (d) Axopodia
107. **Which is the Zoonotic parasite among them?**
(a) Euglena (b) Giardia (c) Trypanosoma (d) Trichomonas
108. **Which of the following is a human parasitic protozoan found in the mouth attacking gums and teeth?**
(a) Entamoeba histolytica (b) Entamoeba gingivalis
(c) Amoeba (d) Trypanosoma
109. **Totipotent cells of sponges are**
(a) Myocytes (b) Thesocytes (c) Archaeocytes (d) Chromocytes
110. **In *Hydra*, the ovary contains**
(a) Few ova (b) Single ovum (c) Sperms (d) Many ova
111. **The gastrula of *Hydra* is known as stereo gastrula because it is**
(a) Solid (b) Hollow (c) 2-layered (d) Encapsulated
112. **Miracidium larva occurs in the life cycle of**
(a) Liver fluke (b) Tapeworm (c) *Ascaris* (d) Malarial parasite
113. **Which Plasmodium causes blood clotting in brain of human being?**
(a) Plasmodium vivax (b) Plasmodium malaria
(c) Plasmodium falciparum (d) Plasmodium ovalae
114. **Which enzyme is produced by sporozoite of Plasmodium?**
(a) Lysolecithin (b) Proteolytic enzyme (c) Trypsin (d) Trypsin and amylase
115. **Oxygen circulates to various tissues of the earthworm by:**
(a) Blood corpuscles (b) Plasma
(c) Blood corpuscles and Plasma (d) Coelomic fluid
116. **In earthworm which cell replaces the destroyed cell of the epidermis?**
(a) Epidermis (b) Supporting cell (c) Basal cell (d) Goblet cell
117. **The parthenogenesis process that takes place in termites is**
(a) Complete (b) Incomplete (c) Artificial (d) All of them
118. **The best definition of the process of gastrulation is that, it is a process where the**
(a) Single layered blastula becomes two layered
(b) Archenteron is formed
(c) Cells move to occupy their definite position
(d) Zygote gets converted to a larva.
119. **The portal system carries blood**
(a) From capillaries (b) From capillaries
(c) From capillaries to capillaries (d) From liver to intestine

120. **Brachial and Musculo - cutaneous veins in frog unite to form**
(a) Innominate vein (b) External jugular vein
(c) Subclavian vein (d) Postcaval vein
121. **Which vitamin is used for the formation of Anti-Venem?**
(a) Vitamin B₁₅ (b) Vitamin B₁₇ (c) Vitamin Q (d) Vitamin C
122. **Which taste papillae have no taste buds?**
(a) Filiform (b) Foliate (c) Circumvallate (d) Fungiform
123. **A tracheotomy is done to**
(a) throw away from trachea (b) make respiration easier
(c) decorate with ring (d) insert nasogastric tube
124. **Little's or Keisselbach's area in the nasal septum is the most common site of epistaxis (nasal bleeding). Nasal septum is formed by:**
(a) Ethmoid bone (b) Vomer (c) Cartilage (d) All of the above
125. **What percentage of the glomerular filtrate formed in the glomerular capsule is eventually reabsorbed back to blood?**
(a) 10% (b) 25% (c) 70-80% (d) 100%
126. **'Decompression sickness' that occurs in divers ascending rapidly to surface is associated with the formation of**
(a) Thrombus (b) Aneurysm (c) Varicosity (d) Embolism
127. **Parkinson's disease affects**
(a) Brain (b) lungs (c) Muscles (d) kidney
128. **Colour vision in men is**
(a) Trichromatic (b) Bichromatic (c) Monochromatic (d) Achromatic
129. **Otolith is composed of**
(a) Mucopolysaccharide (b) Calcium carbonate (c) Lipid (d) Protein
130. **Which of the following controls the function of sertoli cells?**
(a) FSH (b) ACTH (c) Estrogen (d) Testosterone
131. **Vaginal orifice and urethral orifice open into**
(a) Cervix (b) Vulva (c) labia majora (d) labia minora
132. **Diabetes insipidus is caused by the imbalance of**
(a) glucose level (b) oxytocin (c) Insulin (d) ADH
133. **Acromegaly results due to the excess production of the following**
(a) Growth hormone (b) Insulin (c) Thyroxine (d) Adrenaline
134. **Most cost effective and extensible applied method of treatment of TB in Nepal is**
(a) BCG (b) DOTs (c) Rifampicin (d) AZT
135. **Breast cancer is an example of**
(a) Sarcoma (b) Adenoma (c) Carcinoma (d) Lymphoma
136. **Tendon is made up of**
(a) Yellow fibrous connective tissue (b) Adipose tissue
(c) Modified white fibrous tissue (d) Areolar tissue
137. **Ends of long bones are covered with**
(a) Muscles (b) Ligaments (c) Hyaline cartilage (d) Elastic cartilage
138. **Sarcomere is the distance between**
(a) Z-line and Z-line (b) Two I- bands (c) Two A- bands (d) Two surface of Z-lines
139. **Glands and ducts are internally lined with**
(a) Columnar epithelium (b) Cuboidal epithelium
(c) Ciliated columnar epithelium (d) Transitional epithelium
140. **The type of immunity acquired at birth due to the passage of antibodies across the placenta to the foetus is**
(a) naturally acquired active immunity (b) artificially acquired passive immunity
(c) naturally acquired passive immunity (d) artificially acquired active immunity
141. **Anaerobic chemo-heterotrophs belong to**
(a) Protista (b) Monera (c) Animalia (d) Plantae
142. **Antibiotics cannot be produced from**
(a) Penicillium (b) virus (c) lichen (d) Bacillus
143. **Which is not usually present in bacterial cell walls?**
(a) Cellulose (b) Muramic acid (c) Glucosamine (d) Diamino pimelic acid
144. **Common pigments of all algae are**
(a) chlorophyll a and chlorophyll b (b) chlorophyll a and chlorophyll c
(c) chlorophyll a and carotene (d) chlorophyll a and xanthophyll
145. **Asexual spore in Spirogyra is**
(a) Zoospore (b) Aplanospore (c) Zygosporangium (d) Azygosporangium


146. **Protonema in moss is**
(a) diploid sporophyte (b) haploid gametophyte
(c) haploid sporophyte (d) diploid gametophyte
147. **Kidney-shaped scaly structure in ferns is**
(a) prothallus (b) protonema (c) indusium (d) ramenta
148. **A group of the plant without ovary belong to**
(a) fungi (b) gymnosperms (c) pteridophytes (d) bryophyte
149. **Cuscuta is**
(a) root parasite (b) stem parasite (c) leaf parasite (d) partial parasite
150. **Fruit developing from spike inflorescence is**
(a) syconus (b) sorosis (c) balausta (d) pepo
151. **The plant, *Tagetes* (marigold) belongs to the family**
(a) Solanaceae (b) Leguminosae (c) Compositae (d) Malvaceae
152. **Single-seeded fruit is present in the members of the family**
(a) tomato (b) garden pea (c) sunflower (d) grasses
153. **Ozone on the earth surface is**
(a) useful gas (b) pollutant gas
(c) essential for O₂ formation (d) required for life
154. **Endangered plant species of Nepal is**
(a) *Nardostachys* (b) *Cycas* (c) *Rauwolfia* (d) *Pinus*
155. **Most influential factor of determining vegetation is**
(a) sunlight (b) soil (c) humidity (d) rainfall
156. **The conversion of atmospheric nitrogen into soil nitrogen is**
(a) nitrification (b) ammonification (c) nitrogen fixation (d) denitrification.
157. **Smallest cell organelle in plant cell is**
(a) plastid (b) nucleus (c) ribosome (d) dictyosome
158. **Nucleoprotein in animal cell is synthesized in**
(a) cytoplasmic membrane (b) nucleolus
(c) cytoplasm (d) nucleus
159. **The first living cell was discovered by**
(a) Robert Hooke (b) Louis Pasteur (c) Leuwenhoek (d) Ehrenberg
160. **Direct division of cell is**
(a) mitosis (b) meiosis (c) amitosis (d) endomitosis
161. **Plant lysosome is**
(a) lysosome (b) glyoxisome (c) sphaerosome (d) peroxisome
162. **The primary cell wall does not contain**
(a) cellulose (b) lignin (c) pectin (d) hemicellulose
163. **The number of parental phenotypes in polygenic inheritance due to 2 genes is**
(a) 3 (b) 4 (c) 2 (d) 5
164. **Holandric genes are found in**
(a) Y chromosomes (b) XY chromosomes
(c) X chromosomes (d) somatic chromosomes
165. **Proof reading of DNA is assisted by the enzymes**
(a) RNA polymerase I (b) DNA polymerase II
(c) DNA polymerase I (d) Helicase
166. **A male would be colourblind only if**
(a) father is colourblind (b) father is carrier
(c) father is normal (d) mother is colour blind
167. **Subterminal apical meristem is present in**
(a) stem (b) root (c) branch (d) leaf
168. **Spongy parenchyma is found in**
(a) stem (b) leaves (c) branch (d) roots
169. **Imbibition is**
(a) endothermic (b) exothermic (c) catabolic (d) anabolic
170. **Maximum osmotic pressure is found in**
(a) hydrophytes (b) xerophytes (c) chersophytes (d) mesophytes
171. **ATP ratio in C₃ and C₄ plants for the synthesis of single glucose molecule in photosynthesis is**
(a) 2/3 (b) 2/2 (c) 3/5 (d) 5/3
172. **The minerals involved in the photolysis of water is**
(a) Mn. (b) Ca (c) Mg (d) Zn
173. **Which is essential production in respiration?**
(a) H₂O (b) ATP (c) CO₂ (d) Ethanol
174. **When RQ becomes less than unity, then the substrate should be**
(a) carbohydrate (b) dry seed (c) organic acid (d) lipid

175. Seed dormancy is associated with
 (a) starch (b) ethylene (c) abscisic acid (d) gibberellic acid.
176. Proper chromosome division occurs during
 (a) Metaphase (b) Anaphase I (c) Anaphase II (d) Telophase
177. Which of the following is not a carbohydrate?
 (a) Tryptophan (b) Chitin (c) Cellulose (d) Glycogen
178. Primary endospermic nucleus (PEN) is produced from
 (a) syngamy (b) sexual fertilization
 (c) vegetative fertilization (d) fertilization
179. Callus is
 (a) mass of differentiated tissues (b) mass of cells from single origin
 (c) mass of undifferentiated tissues (d) enzymes for breaking callose
180. Agar agar is extracted from
 (a) red algae (b) blue-green algae (c) brown algae (d) green algae
181. In a certain code language, if INTELLIGENCE is written as ETNIGILLECNE, then how is MATHEMATICAL written in that code?
 (a) AMHTMETACILA (b) TAMMEHITALAC
 (c) HIAMMETALACI (d) HTAMTAMELACI
182. Find out the correct alternative.
 bca - b - aabc - a - caa
 (a) acab (b) bcbb (c) cbab (d) ccab
183. Which one will replace the question mark?


2	2	1	3
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5	4	5	15
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5	5	3	?
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 (a) 11 (b) 19 (c) 15 (d) 22
184. Which of the following diagrams indicates the best relation between:
Ant, Insect, Living Beings
- 


a)



b)



c)



d)
185. A and B are married couple. C and D are brothers. C is brother of A. How is D related to B?
 (a) Brother in law (b) Brother (c) Son in law (d) Cousin
186. If the position of the first and third digits within each number are interchanged, which of the following will be the third digit of the second lowest number?
 519 364 287 158 835
 (a) 9 (b) 5 (c) 7 (d) 8
187. How many leap years do 300 years have?
 (a) 75 (b) 74 (c) 72 (d) 73
188. One morning after sunrise, Nandita and Ravi were sitting in a lawn with their back towards each other. Nandita's shadow fell exactly towards her left hand side. Which direction was Ravi facing?
 (a) East (b) West (c) North (d) South
189. Six friends A, B, C, D, E, and F are sitting in a row facing East, C is between A and E. B is just to the right of E but left of D. F is not at the right end. Who is to the left of A?
 (a) E (b) C (c) D (d) F

190. Each of the questions given below consists of a statement, followed by two arguments numbered I and II. You must decide which of the arguments a 'strong' argument is and which a 'weak' argument is and give an answer to the below:

Statement: Are nuclear families better than joint families?

Arguments:

I. No. Joint families ensure security and also reduce the burden of work.

II. Yes. Nuclear families ensure greater freedom.

- a. If only argument I is strong
- b. If only argument II is strong
- c. If either I or II is strong
- d. If both I and II are strong.

191. A vendor bought toffees at 6 per rupee. How many toffees per rupee must he sell to gain 20%?

- (a) 3
- (b) 4
- (c) 5
- (d) 6

192. Q is as much younger than R as he is older than T. If the sum of the ages of R and T is 50 years. What is definitely the difference between R and Q's age?

- (a) 1 years
- (b) 2 years
- (c) 25 years
- (d) Data inadequate

193. The average of 20 numbers is zero of them, at the most. How many may be greater than zero?

- (a) 0
- (b) 1
- (c) 10
- (d) 19

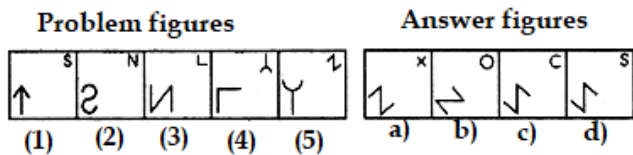
194. A and B can do a piece of work in 40 and 50 days. If they work at it on an alternate day with A beginning, how many days the work will be finished?

- (a) 40
- (b) 44
- (c) $44\frac{2}{5}$
- (d) $44\frac{1}{2}$

195. If a 30 m ladder is placed against 15m wall such that it just reaches the top of the wall, then the elevation of the wall is equal to

- (a) 30°
- (b) 45°
- (c) 50°
- (d) 60°

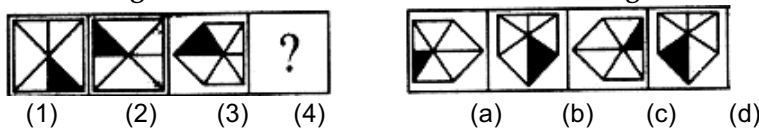
196. Select a figure from the Answer Figures which will continue the same series as established by the Problem Figures.



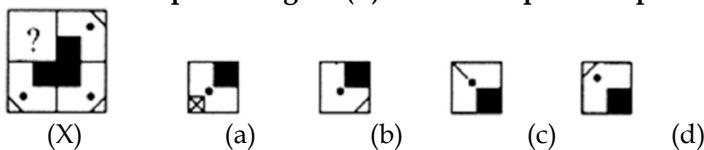
197. Select a suitable figure from the Answer Figures that would replace the question mark (?).

Problem Figures:

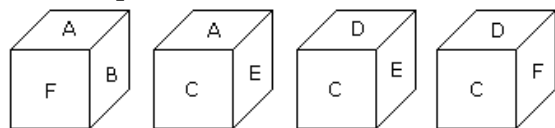
Answer Figures:



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.



199. From the positions of a cube are shown below, which letter will be on the face opposite to face with 'A'?



- (a) D
- (b) B
- (c) C
- (d) F

200. Find the water image.

