BEATS
HIGH CARE CLASS

CEE MODEL ENTRANCE EXAM

(SET-3)

Instructions:

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

Date : 2081/09/13
(Dec 28)

Duration : 3 hours
Time : 10 A.M. – 1 P.M.

1. **Two stones are thrown horizontally from the top of a tower with velocities 5m/s and 10 m/s respectively at same instant. If T_1 and T_2 be their respective time of flights, then**
a) $T_1 = T_2$
b) $T_1 < T_2$
c) $T_1 > T_2$
d) T_1 & T_2 may or may not be same

2. **A body is moving with a constant speed V in a circle of radius r. Its angular acceleration is**
a) vr
b) $\dfrac{v}{r}$
c) $\dfrac{v}{r^2}$
d) zero

3. **A block sliding initially with a speed of 10 m/s on a rough horizontal surface, comes to rest in a distance of 7.0m. What is the coefficient of kinetic friction between the block and the surface? [g = 10 m/s²]**
a) 0.71
b) 0.81
c) 0.91
d) 0.62

4. **Two balls of different masses have the same kinetic energy. The ball having greater momentum will be**
a) lighter one
b) heavier one
c) both having equal momentum
d) nothing can be said

5. **The distances of Neptune and Saturn from the sun are nearly 10^{13} and 10^{12} m respectively. Assuming that they move in circular orbits, their periodic times will be in the ratio of**
a) 10
b) $10\sqrt{10}$
c) 100
d) 1000

6. **A man turns on a rotating table with an angular speed ω. He is holding two equal masses at arm's length. With moving his arms, he just drops the two masses. How will his angular speed change?**
a) It will be less than ω
b) It will be more than ω
c) It will be remain equal to ω
d) May be less, greater or equal to ω depending upon the quantity of masses

7. **Two stretched membranes of area 2m² and 3m² are placed in a liquid at the same depth. The ratio of the pressure on them is**
a) 1 : 1
b) 2 : 3
c) $\sqrt{2} : \sqrt{3}$
d) $2^2 : 3^2$

8. **If a bimetallic strip is heated, it will**
a) bends towards the metal with lower thermal expansion coefficient
b) bends towards the metal with higher thermal expansion coefficient
c) not bend at all
d) twist itself into a helix

9. **Assuming no heat losses, the heat released by the condensation of x g of steam at 100°C can be used to convert y g of ice at 0°C into water at 100°C, the ratio x : y is**
a) 1 : 1
b) 1 : 2
c) 1 : 3
d) 3 : 1

10. **In a given process on an ideal gas, dW = 0 and dQ < 0. What happens to the temperature of gas?**
a) Increases
b) Decreases
c) remains constant
d) first increases then decreases

11. **Newton's law of cooling holds good only, if the temperature difference between the body and its surrounding is**
a) less than 10°C
b) more than 50°C
c) more than 100°C
d) more than 200°C

12. **An open pipe is suddenly closed at one end with the result that the frequency of third harmonic of the closed pipe is found to be higher by 100 Hz than the fundamental frequency of the open pipe. The fundamental frequency of the open pipe is**
a) 200 Hz
b) 300 Hz
c) 240 Hz
d) 480 Hz

13. **An observer moves towards a stationary source of sound, with a velocity one-fifth the velocity of sound. What is the percentage increase in apparent frequency?**
a) Zero
b) 0.5%
c) 5%
d) 20%

14. **Rays of light falls on a glass plate of refractive index μ. If the angle between reflected and refracted rays is 90°, then the angle of incidence is**
a) $\sin^{-1}(\mu)$
b) $\cos^{-1}(\mu)$
c) $\tan^{-1}(\mu)$
d) $\tan^{-1}\left(\dfrac{1}{\mu}\right)$

15. **One cannot see through fog because of**
a) reflection
b) refraction
c) absorption
d) scattering

16. **When a beam of white light falls on an achromatic combination of prism, then there is**
a) dispersion only
b) deviation only
c) deviation and dispersion both
d) neither dispersion nor deviation

17. **The minimum distance between an object and its real image formed by a thin convex lens of focal length f is**
a) 4f
b) 2f
c) f
d) $\dfrac{f}{2}$

18. **Choose the correct statement:**
a) The Brewster's angle is independent of wavelength of light
b) The Brewster's angle is independent of the nature of the reflecting surface
c) The Brewster's angle is different for different wavelength
d) The Brewster's angle depends on wavelength but not on the nature of reflecting surface

19. **A spherical drop of mercury having a potential of 2.5V is obtained as a result of merging 125 droplets. The potential of a constituent droplet would be**
a) 1.0 V
b) 0.5 V
c) 0.2 V
d) 0.1 V

20. **The rate of disintegration of a fixed quantity of a radioactive substance can be increased by**
a) increasing the temperature
b) increasing the pressure
c) chemical reaction
d) it is not possible

21. **An infinite number of capacitors of capacitances C, 2C, 4C, 8C, 16C, 32C, ... are connected in series. What is the equivalent capacitance to this distribution of capacitors?**
a) C
b) C/2
c) 2C
d) 3C/2

22. **A piece of aluminium (Al) and Germanium (Ge) are cooled from T_1k to T_2k. The resistance of**
a) each of them increases
b) each of them decreases
c) Al decreases and that of Ge increases
d) Al increases and that of Ge decreases

23. **A square conducting loop of side length L carries a current I. The magnetic field at the centre of the loop is**
a) independent of L
b) proportional to L
c) inversely proportional to L
d) linearly proportional to L

24. **The core of a transformer is laminated because**
a) energy losses due to eddy currents may be minimized
b) the weight of the transformer may be reduced
c) rusting of the core may be prevented
d) ratio of voltage in primary and secondary may be increased

25. **A cell has emf 1.5V and internal resistance 0.5Ω. If a current of 1A is delivered through the cell, then terminal potential will be**
a) 2V
b) 1.5V
c) 1V
d) 0.5V

26. **Which of the following is most suitable for the core of electromagnets?**
a) Air
b) Soft iron
c) Steel
d) Cu – Ni alloy

27. **A sphere is released on a smooth inclined plane from the top. When it moves down, its angular momentum is**
a) conserved about every point
b) conserved about the point of contact only
c) conserved about the centre of sphere only
d) conserved about any point on a line parallel to the inclined plane and passing through the centre of the ball

28. **If g is same at a height h and at a depth d, then**
a) R = 2d
b) d = 2h
c) h = d
d) none

29. **A particle is executing SHM with amplitude A and has maximum velocity V. Its speed at displacement A/2 will be**
a) $\frac{\sqrt{3}}{2} V_0$
b) $V_0\sqrt{2}$
c) V_0
d) $\frac{V_0}{4}$

30. **An electric dipole, when held at 30° with respect to a uniform electric field of 10^4 NC^{-1} experiences a torque of 9×10^{-26} Nm. Find dipole moment of the dipole.**
a) 1.6×10^{-29} cm
b) 1.8×10^{-29} cm
c) 2.0×10^{-29} cm
d) 2.2×10^{-29} cm

31. **The resistance of a wire is RΩ. What will be its new resistance if it is stretched to n times its original length?**
a) $\frac{n^2}{R}$
b) $\frac{R}{n^2}$
c) n^2R
d) none of these

32. **If number of turns in moving coil galvanometer becomes half, then the deflection for the same current will become**
a) same
b) half
c) double
d) four times

33. **Two circular, similar, coaxial loops carry equal currents in the same direction. If the loops are brought near, what will happen?**
a) Current will increase in each loop
b) Current will decrease in each loop
c) Current will remain same in each loop
d) Current will increase in one and decrease in other

34. **The peak value of an alternating emf E given by $E = E_0 \cos\omega t$ is 10V and frequency is 50Hz. At time t = $\frac{1}{600}$ S, the instantaneous value of emf is**
a) 10V
b) $5\sqrt{3}$V
c) 5V
d) 1V

35. **Diamagnetic material in a magnetic field moves**
a) from stronger to the weaker parts of the field
b) from weaker to the stronger parts of the field
c) perpendicular to the field
d) none of the above direction

36. **Which one of the following is evidence for the expansion of the universe?**
a) Red shift
b) Blue shift
c) Birth of pulsars
d) Birth of Quasars

37. **If Q, E and W denotes respectively the heat added, change in internal energy and the work done in a closed cyclic process, then**
a) Q = 0
b) W = 0
c) Q = W = 0
d) E = 0

38. **The temperature of an ideal gas is increased from 120K to 480K. If at 120K the root mean square speed of the gas molecules is V, at 480K it becomes**
a) 4V
b) 2V
c) V/2
d) V/4

39. **A thin prism of glass is placed in air and water successively. If $^a\mu_g = \frac{3}{2}$ and $^a\mu_w = \frac{4}{3}$ then the deviation produced by the prism for a small angle of incidence when placed in air and water are in the ratio**
a) 9 : 8
b) 4 : 3
c) 3 : 4
d) 4 : 1

40. **An X-ray tube operates at 18 kV. Find the maximum speed of electron striking the target? [m_e = 9 × 10^{-31} kg, e = 1.6 × 10^{-19}C]**
a) $7 × 10^6$ m/s   b) $8 × 10^7$ m/s   c) $7 × 10^8$ m/s   d) $5 × 10^7$ m/s

41. **A proton accelerated through a potential V has de-Broglie wavelength λ. Then the de-Broglie wavelength of an α-particle, when accelerated through the same potential V is**
a) $\frac{\lambda}{2}$ b) $\frac{\lambda}{2\sqrt{2}}$ c) $\frac{\lambda}{8}$ d) $\frac{\lambda}{4}$

42. **A pipe closed at one end and open at the other will give**
a) all the harmonics   b) all even harmonics
c) all odd harmonics   d) none of the harmonics

43. **Boron rods in a nuclear reactor are used to**
a) absorbs excess neutrons   b) absorbs alpha particle
c) slow down the reaction   d) speed up the electron

44. **Bragg equation 2d sinθ = nλ will have no solution if**
a) $\lambda < 2d$ b) $\lambda > 2d$ c) $\lambda < d$ d) $\lambda > d$

45. **An X-ray tube is operating at 15KV. The lower limit of the wavelength of X-rays produced is**
a) $0.82 × 10^{-7}$ m   b) $0.82 × 10^{-8}$m   c) $0.82 × 10^{-10}$m   d) $0.82 × 10^{-13}$m

46. **Barrier potential difference is the potential difference across**
a) terminals of a cell   b) depletion layer
c) capacitor plates   d) ends of a conductor

47. **A radioactive elements has half life period of 800 years. After 6400 years, the amount that would have been decreased to**
a) $\frac{1}{16}$ b) $\frac{255}{256}$ c) $\frac{1}{256}$ d) $\frac{1}{4}$

48. **According to Einstein's photoelectric equation, the plot of the kinetic energy of the emitted photoelectrons from a metal versus frequency of the incident radiation gives a straight line whose slope:**
a) depends on the nature of metal used
b) depends on the intensity of radiation
c) depends on both the intensity of radiation and the nature of metal used
d) is the same for all metals and independent of the intensity of radiation

49. **Which of the following gate negate the signal?**
a) OR   b) NOT   c) NAND   d) NOR

50. **Which of the following field provides mass to particles?**
a) Gravitational Field   b) Electric field   c) Higg's field   d) All of the above

51. **The element generally extracted from sea-weed ashes is**
a. Cl_2 b. Na   c. I_2 d. K

52. **Silver containing lead as an impurity is purified by**
a. poling   b. cupellation   c. levigation   d. distillation

53. **Which of the following metal cannot be extracted by smelting process?**
a. Pb   b. Fe   c. Zn   d. Al

54. **Which metal carbonate liberate CO_2 gas on heating?**
a. Li_2CO_3 b. Na_2CO_3 c. K_2CO_3 d. Rb_2CO_3

55. **The nuclei of tritium (H^3) atom would contain neutrons**
a. 1   b. 2   c. 3   d. 4

56. **The conversion of atomic hydrogen into ordinary hydrogen gas is**
a. Exothermic change   b. Endothermic change
c. Nuclear change   d. Photochemical change

57. **Syngas is mixture of**
a. $CO_2 + H_2$ b. $CO + H_2$ c. $CO + CO_2$ d. $CO + N_2$

58. **Sodium ordinarily does not show an oxidation state of +2 because of its**
a. High 1st ionization energy   b. High 2nd ionization energy
c. Large ionic ionization   d. high electronegativity

59. **In the given reaction**
S + NaOH $\longrightarrow$ A + Na_2S + H_2O; A is
a. Na_2SO_4 b. Na_2SO_3 c. Na_2S d. $Na_2S_2O_3$

60. **Prussic acid is**
a. PH_3 b. HPO_3 c. HCN   d. HCl

61. **The purest form of carbon is**
a. Diamond   b. Graphite   c. Sugar charcoal   d. Fullerenes

62. **Which out of the following is called sugar of lead?**
a. $Pb(NO_3)_2$ b. $PbCl_2$
c. $PbCO_3.Pb(OH)_2$ d. $Pb(CH_3COO)_2$

63. **Nitrogen dioxide cannot be obtained by heating**
a. $Pb(NO_3)_2$ b. KNO_3 c. N_2O_4 d. N_2O_5

64. **When SO_2 is passed through acidified solution of H_2S**
a. H_2SO_4 is formed   b. H_2SO_3 is precipitated
c. Sulphur is precipitated   d. H_2S is reduced

65. The maximum volume at S.T.P. is occupied by
a. 12.8 g of SO_2 b. 6.02×10^{22} molecules of CH_4
c. 0.5 mol of NO_2 d. 1 g molecule of CO_2

66. If 1 mL of water contains 20 drops, then number of molecules in a drop of water is
a. 6.023×10^{23} b. 1.376×10^{26} c. 1.673×10^{21} d. 4.346×10^{20}

67. Bohr's model of atom is not in agreement with
a. Line spectra of hydrogen atom   b. Pauli's principle
c. Planck's theory   d. Heisenberg's principle

68. How many electrons in an atom with atomic number 105 can have $(n+\ell) = 8$?
a. 30   b. 17   c. 15   d. Unpredictable

69. The pair with similar geometry is
a. BF_3, NH_3 b. H_2O, C_2H_2 c. CO_2, SO_2 d. NH_3 and PH_3

70. Among the following species, the diamagnetic molecule is
a. CO   b. NO   c. O_2 d. B_2

71. A gas expands isothermally and reversibly. The work done by the gas is
a. Zero   b. Maximum   c. Minimum   d. Cannot be determined

72. Which one of the following has $\Delta S°$ has greater than zero?
a. $CaO(s) + Co_2(g) \rightleftharpoons CaCO_3(s)$ b. $NaCl(aq) \rightleftharpoons NaCl(s)$

c. $NaNO_3(s) \rightleftharpoons Na^+(aq) + NO_3^-(aq)$ d. $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$

73. For a gaseous reaction: $xA + yB \rightleftharpoons \ell C + mD$
a. $K_p = K_c$ b. $K_p = (K_c)^{\ell+m}$
c. $K_p = K_c (RT)^{(\ell+m)-(x+y)}$ d. $K_p = 1/K_c$

74. Which of the following metal sulphide has maximum solubility in water?
a. CdS ($K_{sp} = 36 \times 10^{-30}$)   b. FeS ($K_{sp} = 11 \times 10^{-10}$)
c. HgS ($K_{sp} = 32 \times 10^{-54}$)   d. ZnS ($K_{sp} = 11 \times 10^{-22}$)

75. The solubility product of silver chloride is 1.8×10^{-10} at 298 K. The solubility of AgCl in 0.01 M HCL solution in mol/dm^3 is
a. 2.4×10^{-9} b. 3.6×10^{-8} c. 0.9×10^{-10} d. 1.8×10^{-8}

76. A solution of $MgCl_2$ in water has pH
a. < 7 b. > 7 c. 7   d. 14.2

77. If V_0 is the volume of a given mass of gas at 273 K at a constant pressure then according to Charle's law, the volume at 10°C will be
a. $11 V_o$ b. $\dfrac{1}{273}(V_0 + 10)$ c. $V_0 + \dfrac{10}{273}$ d. $\dfrac{283}{273} V_0$

78. Steam distillation is based on
a. Boyle's law   b. Charle's law
c. Dalton's law of partial pressure   d. Avogadro's law

79. How many number of atoms are there in a cube based unit cell having one atom on each corner and two atoms on each body diagonal of cube?
a. 8   b. 6   c. 4   d. 9

80. The rate of certain hypothetical reaction
$A + B + C \longrightarrow$ products, is given by
$r = \dfrac{dA}{dt} = k)A]^{1/2} [B]^{1/3} [C]^{1/4}$
The order of a reaction is given by
a. 1   b. 1/2   c. 2   d. 13/12

81. 10 g of a radioactive isotope is reduced to 1.25 g in 12 years. Therefore half-time period of the isotope is
a. 24 years   b. 4 years   c. 3 years   d. 8 years

82. The molarity of NO_3^- in the solution after 2 litres of 3M $AgNO_3$ is mixed with 3 lites of 1 M $BaCl_2$ is
a. 0.6 M   b. 1.2 M   c. 1.6 M   d. 0.8 M

83. The IUPAC name of following compound is

$$CH_3CH_2 - CH - CH - CH_2CH_3$$
$$\qquad\qquad |\qquad\ |$$
$$\qquad\qquad CH_3\ \ CHO$$

a) 2–sec butylbutanal   b) 2, 3–diethylbutanal
c) 2–ethyl–3–methylpentanal   d) 3–methyl–2–ethylpentanal

84. Which of the following species does not act as a nucleophile?
a) ROH   b) ROR   c) PCl_3 d) BF_3

85. $CH_3 - Br + NH_3 \longrightarrow CH_3 - NH_2 + HBr$. The reaction is classified as
a) substitution   b) addition   c) elimination   d) rearrangement

86. Which of the following compounds will show metamerism?
a) $CH_3-CO-C_2H_5$ b) $C_2H_5-S-C_2H_5$
c) CH_3-O-CH_3 d) $CH_3-O-C_2H_5$

87.   **In the free radical chlorination of methane, the chain initiating step involves the formation of**
       a) chlorine free radical   b) hydrogen chloride
       c) methyl radical   d) chloromethyl radical.
88.   **Which one of the following gives only one monochloro derivative?**
       a) n-hexane   b) 2-methylpentane
       c) 2, 3-dimethylpentane   d) neo-pentane
89.   **Aromatisation of n-hexane gives :**
       a) cyclohexane   b) benzene   c) cycloheptane   d) toluene
90.   **Which of the following represents the correct reaction?**
       a) $CH_4 + 2H_2O \longrightarrow CO_2 + 4H_2$ b) $CH_4 + H_2O \longrightarrow CO + 3H_2$
       c) $CH_4 + H_2O \longrightarrow CH_3OH + H_2$ d) $CH_4 + H_2O \longrightarrow HCHO + 2H_2$
91.   **In the preparation of chlorobenzene from aniline, the most suitable reagent is**
       a) Chlorine in the presence of ultraviolet light
       b) Chlorine in the presence of $AlCl_3$
       c) Nitrous acid followed by heating with Cu_2Cl_2 /HCl
       d) HCl and Cu_2Cl_2
92.   **Which of following can be used as solvent for Grignard reagent?**
       a) H_2O b) C_2H_5OH c) CH_3OH d) $C_2H_5OC_2H_5$
93.   **Freon-12 is commonly used as**
       a) insecticide   b) refrigerant   c) a solvent   d) a fire extinguisher
94.   **Acid catalyzed hydration of alkenes except ethene leads to the formation of**
       a) primary alcohol
       b) secondary or tertiary alcohol
       c) mixture of primary and secondary alcohols
       d) mixture of secondary and tertiary alcohols
95.   **Commercially carboxylic acids are reduced to alcohols by converting them to the _____.**
       a) esters   b) aldehydes   c) ketones   d) amines
96.   **Ether which is liquid at room temperature is**
       a) $C_2H_5OCH_3$ b) CH_3OCH_3 c) $C_2H_5OC_2H_5$ d) None of these
97.   **For carbylamine reaction, we need hot alcoholic KOH and**
       a) any primary amine and chloroform   b) chloroform and silver powder
       c) a primary amine and an alkyl halide   d) a monoalkylamine and trichloromethane
98.   **Azo dye is prepared by the coupling of phenol with**
       a) diazonium chloride   b) o-nitroaniline   c) benzoic acid   d) chlorobenzene
99.   **Which of the following compounds is formed when benzyl alcohol is oxidised with $KMnO_4$?**
       a) CO_2 and H_2O b) Benzoic acid   c) Benzaldehyde   d) Benzophenone
100.   **The polymer used in making hair synthetic hair wigs is mage up of**
       a) $CH_2=CHCl$ b) $CH_2=CHCOOCH_3$
       c) $C_6H_5CH=CH_2$ d) $CH_2=CH-CH=CH_2$
101.   **Which is the most acceptable theory for origin of life?**
       (a) Abiogenesis theory   (b) Biogenesis theory
       (c) Miller and Urey   (d) Oparin and Halden
102.   **Abiogenesis theory was disapproved on the basis of boiled material by**
       (a) F. redi   (b) L. Pasteur   (c) Anximander   (d) L Splanzinii
103.   **Which is the living fossil among them?**
       (a) *Neoplina*   (b) *Lingula*   (c) *Latimaria*   (d) *Ginko*
104.   **Age of agriculture belongs to**
       (a) Paleolithic   (b) Mesolithic   (c) Neolithic   (d) Bronze age
105.   **Which Protozoa has no contractile vacuole?**
       (a) *Entamoeba histolytica* (b) *Amoeba proteus* (c) *Euglena*   (d) *Paramecium*
106.   **Neuro motor system is shown by**
       (a) *Trypanosoma*   (b) *Trichomonas*   (c) *Paramecium*   (d) *Giardia*
107.   **If a carmine particle is put just above the osculum of sponge**
       (a) it will be ingested and digested   (b) It will be ingested and then thrown away
       (c) it will be thrown away   (d) it remains where it was
108.   **Food digestion takes place in *Hydra* by**
       (a) Epithelial tissue   (b) Endothelio-muscular cell
       (c) Endothelio-gland cell   (d) Cnidoblast cell
109.   **A person goes to astrologer for advice to solve mars affecting problem. Which organism is suggested to be used as ring?**
       (a) *Tubipora*   (b) *Corallium*   (c) *Helcyonium*   (d) *Oculina*
110.   **Laurer's canal is found in**
       (a) *Taenia*   (b) *Fasciola*   (c) *Planaria*   (d) *Echinococus*
111.   **The sequence of layers of body wall in Ascaris is:**
       (a) Cuticle-epidermis- longitudinal muscle layer
       (b) Cuticle-epidermis-circular muscle layer
       (c) Cuticle-epidermis-longitudinal muscle layer-circular muscle layer
       (d) Cuticle-epidermis-circular muscle layer-longitudinal muscle layer

112. ***Bonellia* feeds with the help of**
    (a) Tentacles   (b) Parapodia   (c) Proboscis   (d) setae

113. **Ziemen's dot is found in**
    (a) *Plasmodium vivax*   (b) *Plasmodium malaria*
    (c) *Plasmodium falciparum*   (d) *Plasmodium ovalae*

114. **Which of the following in *Plasmodium* causes chills and fever:**
    (a) *Gametocytes*   (b) *Haemoglobin*   (c) *Trophozoites*   (d) *Haemozoin*

115. **Cuticle of annelids is:**
    (a) Non-chitinous and albuminoid   (b) Chitinous
    (c) Chitinous and albuminoid   (d) Non-chitinous

116. **Which cell produces setae in earthworm?**
    (a) Goblet cell   (b) Chief cell   (c) Parietal cell   (d) Trichogen cell

117. **Allantois of the mammalian embryo helps in**
    (a) Respiration   (b) Excretion   (c) Protection   (d) Nutrition

118. **Innominate vein in frog is made by combination of**
    (a) Lingual and mandibular   (b) Internal jugular and sub-scapular
    (c) Brachial and musculocutaneous   (d) Hepatic portal and anterior abdominal

119. **Bidder's canal of frog is present in**
    (a) Liver   (b) Kidney   (c) Testes   (d) Urinary bladder

120. **Which type of placenta is found in human being?**
    (a) Bidiscoidal   (b) Metadiscoidal
    (c) Haemochial   (d) metadiscoidal and haemochorial

121. **Which ion is contained in vitamin C?**
    (a) Zn^{++} (b) ascorbat ion   (c) Mg^{++} (d) Na^{++}

122. **Which gastrin is used for testing gastric function ?**
    (a) *Minigastrin*   (b) *Gastrin*   (c) *Big gastrin*   (d) *Pentagastrin*

123. **Maximum water absorption occurs in human being by**
    (a) caecum   (b) ileum   (c) colon   (d) Jejunum

124. **What happens when partial pressure of O_2 decreases in O_2 – dissociation curve?**
    (a) temperature increase   (b) temperature decrease
    (c) curve moves towards left   (d) CO_2 decrease

125. **Trachea is lined by**
    (a) Pseustratified epithelial tissue
    (b) Columnar Pseustratified epithelial tissue
    (c) Ciliated columnar pseudostratified epithelial tissue
    (d) ciliated epithelial tissue

126. **What happens when primary urine reaches to PCT of nephron. As we know PCT is permeable to water. Then what % of water diffuses from PCT**
    (a) 100   (b) 65   (c) 25   (d) 10

127. **Which louder sound is produced during closing of auriculoventricular valves at the start of ventricular systole by heart in human being?**
    (a) Dub   (b) Lub   (c) Murmur   (d) love

128. **When a person is injured by falling from taller tree and his right side of brain is injured. Then which side of leg or hand is paralyzed?**
    (a) right   (b) left   (c) mid   (d) both right and left

129. **Short time memory is controlled by**
    (a) Pre-frontal cortex   (b) cerebellum   (c) cerebrum   (d) hippocampus of temporal lobe

130. **Penile erection is mainly activated by**
    (a) sympathetic stimulation
    (b) Parasympathetic stimulation
    (c) both sympathetic and sympathetic stimulation
    (d) Inhibition activity.

131. **After ovulation, the ruptured follicle is quickly filled with blood, and at this time, the follicle is called**
    (a) corpus hemorrhagic   (b) Graafian follicle
    (c) corpus callosum   (d) ovarian hemorrhage

132. **Otoconia are suspended in:**
    (a) Perilymph   (b) Endolymph   (c) Synovial fluid   (d) Haemolymph

133. **Tarsal gland is modified form of**
    (a) Sebaceous gland   (b) Sweat gland   (c) lingual gland   (d) Harderian gland

134. **Odd one out:**
    (a) Oxytocin – parathyroid   (b) Steroids - adrenal cortex
    (c) Growth hormone -pituitary   (d) Insulin – β cells

135. **Hardness of bone is due to**
    (a) $CaCO_3$ (b) Calcium phosphate
    (c) Calcium hydroxyphosphate   (d) Calcium silicate

136. **Formation of antibodies takes place by**
    (a) albumin   (b) globulin   (c) fibrinogen   (d) plasmocyte

137. **Aplastic aenemia is caused by**
(a) Deficiency of Iron   (b) Genetic
(c) Non-genetic   (d) failure of RBC formation in bone marrow

138. **When a person takes contaminated food along with rhabditoid and the person is effected from Ascariasis disease. Then which part of human being is affected among them?**
(a) stomach   (b) jejunum   (c) Ileum   (d) colon

139. **Which type of taxis is shown by *Euglena***
(a) Tropo taxis   (b) Klinotaxis   (c) Menotaxis   (d) Telotaxis

140. **Which is first antibody to be synthesis by foetus of 5 months? Presence of this antibody in new born child indicates the infection like congenital syphilis (5%).**
(a) IgA   (b) IgM   (c) IgE   (d) IgG

141. **Which organelle is responsible for lipid synthesis**
(a) Smooth E.R.   (b) RER   (c) Golgi bodies   (d) Centrosome

142. **Acrosome during spermiogenesis is formed by**
(a) Golgi body   (b) RER   (c) SER   (d) Centrosome

143. **Aleurone layer found in maize grain is for the storage of**
(a) Protein (e.g., of proteioplast)   (b) Carbohydrate
(c) liquid   (d) Fat

144. **Which contractile protein is found in microfilament**
(a) Actin   (b) Myosin   (c) Collagen   (d) Elastin

145. **Shape of chromosome can be determined at**
(a) Anaphase   (b) Prophase   (c) Metaphase   (d) Telophase

146. **Segregation or disjunction of homologous chromosome takes place in**
(a) Anaphase I   (b) Telophase I   (c) Pachytene   (d) Diakinesis

147. **Milk protein is**
(a) Lactose (Milk sugar)   (b) Myosin
(c) Casein   (d) Pepsin

148. **Virus is a**
(a) living particle (b) non-living particle (c) obligate parasite (d) Bacteriophage

149. **Two flagella, one on each end is called**
(a) Amphitrichous   (b) Cephalotrichous
(c) Monotrichous   (d) Peritrichous

150. **Genetic transfer through viruses in bacteria is called**
(a) Transduction   (b) Translation   (c) Transcription (d) Transposition

151. **Flagella of bacteria is made up of**
(a) Flagellin protein (b) Collagen protein (c) Elastin protein (d) Fibrin protein

152. **Female cone represents**
(a) Inflorescence   (b) Fruit   (c) Seed   (d) Female gamete

153. **Snakes of plant kingdom (Botanical snakes) are**
(a) Bryophytes   (b) Thallophytes   (c) Pteridophytes (d) Gymnosperm

154. **Lichens are bio-indicator of**
(a) SO_2 pollution (air pollution)   (b) Soil pollution
(c) Noise pollution   (d) Water pollution

155. **Secondary meristem develops from**
(a) Primary permanent tissue   (b) Secondary permanent tissue
(c) Apical meristem   (d) Lateral meristem

156. **Flowering hormone is**
(a) Adrenaline   (b) Florigen   (c) Ethylene   (d) Gibberellin

157. **Many grasses leaves are capable of folding and unfolding due to**
(a) Bulliform cells (b) Mesophyll cell   (c) Spongy tissue (d) Epidermis

158. **Distribution of hormones in plant takes place by**
(a) Osmosis   (b) OPD   (c) Suction pressure (d) Diffusion

159. **In seed germination the first phenomenon that takes place is**
(a) Osmosis   (b) Diffusion   (c) Movement   (d) Imbibition

160. **The ultimate gain of light reaction is**
(a) ATP and $NADPH_2$ (b) $NADPH_2$ and glucose
(c) Only ATP   (d) O_2 and glucose

161. **Gibberellin stimulates flowering in**
(a) The long day plants   (b) Short day plant
(c) Both long day and Short day plants   (d) None

162. **The cell organelle in which aerobic respiration takes place is**
(a) Mesosome   (b) Cytoplasm   (c) Mitochondria   (d) Oxysome

163. **The 1st step of photosynthesis is**
(a) Excitement of an electron of chlorophyll by a proton of light
(b) Production of O_2
(c) Excitement of proton
(d) Production of glucose

164. **Crossing over takes place between**
(a) non-sister chromatids of homologous chromosomes
(b) sister chromatids
(c) same chromatids
(d) chromatids of other different chromosomes

165. **Transfer of trait from father to grandson through daughter is called**
(a) Holandric inheritance
(b) Criss-cross inheritance
(c) Halogenic inheritance
(d) Dominant inheritance

166. **Genotype of Turner's Syndrome is**
(a) 44 + XX
(b) 44 + XY
(c) 44 + XO
(d) 44 + XXX

167. **Transformation experiment was conducted by**
(a) Frederick Griffith
(b) Linus Paulin
(c) Meselson and Stahl
(d) Watson and Crick

168. **Nucleoside is composed of**
(a) Sugar + Nitrogenous base
(b) Nitrogenous base + Phosphate
(c) Sugar + Nucleotide
(d) Nucleotide – Sugar

169. **The smallest RNA is**
(a) mRNA
(b) rRNA
(c) tRNA
(d) All are same

170. **Endosperm in angiosperms is**
(a) Haploid
(b) Diploid
(c) Tetraploid
(d) Triploid

171. **A bisexual flower which never opens has ....phenomenon.**
(a) Chasmogamy
(b) Xenogamy
(c) Allogamy
(d) Cleistogamy

172. **To obtain virus free plants which technology is preferred**
(a) Lateral short culture
(b) Root tip culture
(c) Shoot tip culture
(d) Intercalary meristem culture

173. **Progeny of single self-fertilized homozygous plant is**
(a) Gene pool
(b) Gene drift
(c) Evolutionary line
(d) Pure line

174. **Superiority of hybrid over its parent is called**
(a) F hybrid
(b) Heterosis
(c) Dominant
(d) Super dominant

175. **Keystone species in ecosystem are those**
(a) Present in maximum number
(b) That are most frequent
(c) Attaining a large biomass
(d) Contributing to ecosystem properties

176. **Ozone depletion in the stratosphere is caused by**
(a) CO_2
(b) N_2
(c) CFC
(d) F_2

177. **Pneumatophores are present in the plants growing in**
(a) Marshy saline area
(b) Sunny area
(c) Muddy area
(d) Desert area

178. **In plants like Chrysanthemum, Mentha and Jasmine, the stem is a sub-arial modification called**
(a) Sucker
(b) Stolon
(c) Offset
(d) Runner

179. *Tagetes* **belong to the family.**
(a) Compositae
(b) Asteraceae
(c) Cruciferae
(d) Both a and b

180. **Single cotyledon of monocot is**
(a) Plumule
(b) Mesocotyl
(c) Coleorhiza
(d) Scutellum

181. **Arrange the words in a meaningful, logical order:**
1. Puberty   2. Adulthood   3. Childhood
4. Infancy   5. Senescence   6. Adolescence
(a) 2,4,6,3,1,5
(b) 4,3,1,6,2,5
(c) 4,3,6,2,1,3
(d) 5,6,2,3,4,1

182. **What is 100th letter of the series ABBCCCDDDD.**
(a) I
(b) J
(c) K
(d) N

183. **Which of the following diagrams indicates the best relation between Iron, Lead, Nitrogen?**
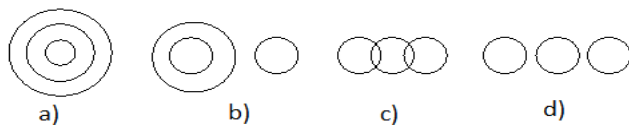
184. **P × Q means P is the sister of Q. P + Q means P is the father of Q. P – Q means P is the mother of Q. Which of the following means S is the aunt of T?**
(a) T × M + S
(b) S + T × M
(c) S × M + T
(d) S × M + R – T

185. **Bharati is 8 ranks ahead of Gita, who ranks 26th in a class of 42. What is Bharati's rank from the last?**
(a) 9th
(b) 24th
(c) 25th
(d) 34th

186. **A man is facing south. He turns 135° clockwise and then 180° anti-clockwise. Which direction is he facing now?**
(a) North-east
(b) West
(c) South-east
(d) South-west

187. **If today is Thursday, then what will be the day on 363rd day?**
(a) Sunday
(b) Saturday
(c) Thursday
(d) None of them

188. A, B, C, D and E are sitting on a bench. A is sitting next to B. C is sitting next to D, D is not sitting with E who is on the left and end of the bench. C is on the second position from the right. A is to the right of B and E. A and C are sitting together. In which position is A sitting?
(a) Between B and D   (b) Between B and C   (c) Between E and D   (d) Between C and E

189. If '+' means '÷', '×' means '–', '÷' means '+' and '–' means '×', then 16 ÷ 8 × 6 – 2 + 12 = ?
(a) 23   (b) 24   (c) 17   (d) 22

190. **Statements:**
I. Some actors are singers.   II. All the singers are dancers.
Conclusions:
I. Some actors are dancers.   II. No singer is an actor.
(a) If only conclusion I follows.   (b) If only conclusion II follows.
(c) If either of the conclusion I or II follows   (d) If neither of the conclusions I and II follows.

191. A is two years older than B who is twice as old as C. If the total of the ages of A, B and C are 27, then how old is B?
(a) 7   (b) 8   (c) 9   (d) 10

192. The average of the two-digit numbers which remains same when the digits interchange their positions is
(a) 55   (b) 55.5   (c) 56   (d) 56.5

193. A and B together finish a work in 30 days. They worked together for 20 days and then B left. After another 20 days. A finished the remaining work. In how many days A alone can finish the work?
(a) 40   (b) 50   (c) 54   (d) 60

194. If A:B = 7:9, B:C = 3:5, then A:B:C is
(a) 7:9:5   (b) 21:35:45   (c) 7:9:15   (d) 7:3:5

195. If A's salary is 25% less than that of B, then how much percent is B's salary more than that of A ?
(a) $33\frac{1}{3}\%$ (b) 30%   (c) 40%   (d) 50%

196. On the same side of a tower, two objects are located. Observed from the top of the tower, their angles of depression are 45° and 60°. If the height of the tower is 150m, the distance between the objects is
(a) 63.5 m   (b) 76.9 m   (c) 86.7 m   (d) 90 m

197. Select a suitable figure from the Answer figures that would replace the question mark (?).
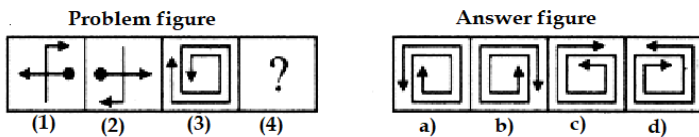
198. Find the numbers of triangles.
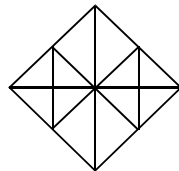
(a) 22   (b) 24   (c) 28   (d) 32

199. Select a figure from amongst the four alternatives, which when placed in the blank space of figure (X) would complete the pattern.
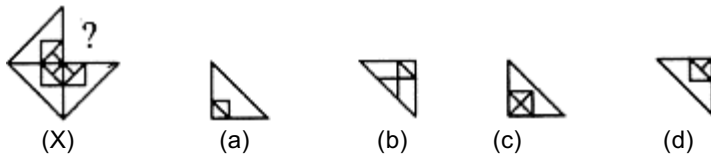
200. A set of three figures X, Y and Z is showing a sequence of folding of a piece of paper. Which would most closely resemble the unfolded form in the figure (Z).