## M.Sc. (Chemistry) Entrance Test, 2022

1. Deviations from ideal behavior will be more if the gas is subjected to :
(A) high temperature
(B) low pressure
(C) high temperature and low pressure
(D) low temperature and high pressure
2. The critical temperature of a gas is that temperature :
(A) above which it can no longer remain in the gaseous state
(B) above which it cannot be liquefied by pressure
(C) at which it solidifies
(D) at which volume of gas becomes zero
3. If a gas is heated at constant pressure, its density :
(A) will increase
(B) will decrease
(C) will remain unchanged
(D) may increase or decrease
4. Thermochemistry is the study of relationship between heat energy and :
(A) chemical energy
(B) activation energy
(C) friction energy
(D) none of these
5. The least random state of water system is :
(A) ice
(B) liquid water
(C) steam
(D) randomness is same in all
6. In which of the following change entropy decreases ?
(A) crystallization of sucrose from solution
(B) dissolving sucrose in water
(C) melting of ice
(D) vaporization of camphor
7. A process is spontaneous at all temperatures if :
(A) $\Delta \mathrm{H}>0$ and $\Delta \mathrm{S}>0$
(B) $\Delta \mathrm{H}>0$ and $\Delta \mathrm{S}<0$
(C) $\Delta \mathrm{H}=0$ and $\Delta \mathrm{S}<0$
(D) $\Delta \mathrm{H}<0$ and $\Delta \mathrm{S}>0$
8. Phase rule states :
(A) $\mathrm{P}+\mathrm{F}=\mathrm{C}+2$
(B) $\mathrm{P}+\mathrm{F}=\mathrm{C}-2$
(C) $\mathrm{P}+\mathrm{C}=\mathrm{F}+2$
(D) $\mathrm{P}+\mathrm{F}+\mathrm{C}=2$
9. Which has the highest depression in freezing point at one atmosphere ?
(A) 0.1 M NaCl solution
(B) $0.1 \mathrm{M} \mathrm{BaCl}_{2}$ solution
(C) 0.1 M sugar solution
(D) 0.1 M FeCl 3 solution
10. The solution in which the blood cells retain their normal form are with regard to the blood :
(A) isotonic
(B) hypertonic
(C) hypotonic
(D) none of these
(3)M-CL-13(CHEM)
11. The anhydride of $\mathrm{HNO}_{3}$ is :
(A) $\mathrm{N}_{2} \mathrm{O}_{3}$
(B) $\mathrm{N}_{2} \mathrm{O}_{5}$
(C) NO
(D) $\mathrm{P}_{2} \mathrm{O}_{5}$
12. The solubility of AgCl in a solution of common salt is lower than in water. This is due to :
(A) salt effect
(B) increase in ionic conc. product
(C) common ion effect
(D) complex formation
13. The concept of $t_{1 / 2}$ is useful for the reactions of:
(A) zero order
(B) first order
(C) second order
(D) all of these
14. Which is correct statement about proton ?
(A) It is nucleus of deuterium
(B) It is ionized hydrogen molecule
(C) It is ionized hydrogen atom
(D) It is $\alpha$-particle
15. The nitrogen atom has 7 protons and 7 electrons. The nitride ion will have :
(A) 10 protons and 7 electrons
(B) 7 protons and 10 electrons
(C) 4 protons and 7 electrons
(D) 4 protons and 10 electrons
16. Which of the following statements does not form part of Bohr's model of the hydrogen atom?
(A) Energy of an electron in the orbit is quantized
(B) The electron in the orbit nearer to the nucleus has the lowest energy
(C) Electrons revolve in different orbit nucleus
(D) The position and velocity of the electron in the orbit cannot be determined simultaneously
17. The quantum number not obtained from the Schrõdinger's wave equation is :
(A) $n$
(B) 1
(C) $m$
(D) $s$
18. The shape of an orbital is given by :
(A) spin quantum number
(B) magnetic quantum number
(C) azimuthal quantum number
(D) principal quantum number
19. Any $p$-orbital can accommodate upto :
(A) 4-electrons
(B) two electrons with parallel spins
(C) 6-electrons
(D) two electrons with opposite spins
20. de-Broglie equation is :
(A) $\lambda=h / m v$
(B) $\lambda=m v / h$
(C) $\lambda=h m v$
(D) $\lambda=h v / m$
(3)M-CL-13(CHEM)

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21. Which of the following rules could explain the presence of three unpaired electrons in N -atom?
(A) Hund's rule
(B) Aufbau's principle
(C) Heisenberg's uncertainty principle
(D) Pauli's exclusion principle
22. The Aufbau principle implies that a new electron will enter an orbital for which :
(A) $n$ has a lower value
(B) 1 has a lower value
(C) $(n+1)$ value is maximum
(D) $(n+1)$ value is minimum
23. Which has minimum ionic radius ?
(A) $\mathrm{N}^{3-}$
(B) $\mathrm{K}^{+}$
(C) $\mathrm{Na}^{+}$
(D) $\mathrm{F}^{-}$
24. The second ionization energy is maximum for :
(A) Boron
(B) Beryllium
(C) Aluminium
(D) Magnesium
25. The amount of energy released on the addition of an electron in outermost shell of an atom is called :
(A) Ionization enthalpy
(B) Hydration enthalpy
(C) Electronegativity
(D) Electron gain enthalpy
26. To which of the following atom, the attachment of electron is most difficult ?
(A) Radon
(B) Nirogen
(C) Oxygen
(D) Radium
27. In which of the following pair, both the species are isoelectronic but the first one is larger in size than the second?
(A) $\mathrm{S}^{2-}, \mathrm{O}^{2-}$
(B) $\mathrm{Cl}^{-}, \mathrm{S}^{2-}$
(C) $\mathrm{F}^{-}, \mathrm{Na}^{+}$
(D) $\mathrm{N}^{3-}, \mathrm{P}^{3-}$
28. In which of the following molecules, bond angle is maximum ?
(A) $\mathrm{CH}_{4}$
(B) $\mathrm{H}_{2} \mathrm{O}$
(C) $\mathrm{NH}_{3}$
(D) $\mathrm{CO}_{2}$
29. The H -bond is strongest in :
(A) O-H----S
(B) $\mathrm{S}-\mathrm{H}----\mathrm{O}$
(C) F-H----F
(D) F-H----O
30. Which one of the following is paramagnetic ?
(A) $\mathrm{N}_{2}$
(B) NO
(C) CO
(D) $\mathrm{O}_{3}$
31. Which of the following shows H-bonding ?
(A) o-nirophenol
(B) Water
(C) Ethyl acetoacetate
(D) All of these
32. Dipole moment is shown by :
(A) 1,4-Dichlorobenzene
(B) cis-1,2-Dichloroethene
(C) trans-1,2-Dichloroethene
(D) None of these
33. The DM of $o, m$ and $p$-dichlorobenzene will be in the order :
(A) $o>p>m$
(B) $p>o>m$
(C) $m>o>p$
(D) $o>m>p$
34. The crystal lattice of ice is mostly formed by :
(A) ionic forces
(B) covalent bonds
(C) intramolecular H-bonds
(D) covalent as well as H -bonds
35. In NaCl crystal, the number of next nearest neighbours of each sodium ion is :
(A) $8 \mathrm{Cl}^{-}$ions
(B) $12 \mathrm{Na}^{+}$ions
(C) $12 \mathrm{Cl}^{-}$ions
(D) $24 \mathrm{Cl}^{-}$ions
36. Doping of AgCl crystals with $\mathrm{CdCl}_{2}$ results in :
(A) Frenkel defect
(B) Schottky defect
(C) Substitutional cation vacancy
(D) Formation of F-centres
37. Space lattice of $\mathrm{CaF}_{2}$ is :
(A) body centred cubic
(B) face centred cubic
(C) simple cubic
(D) hexagonal close packed
38. According to HSAB concept hard acid has :
(A) small ionic radius
(B) high positive charge
(C) low electronegativity
(D) all of these
39. Which of the following statements is true regarding HSAB principle ?
(A) a hard acid prefers to bind with hard base
(B) the term symbiosis was first used in chemistry by Jorgensen
(C) HSAB principle was given by Pearson
(D) All are correct
40. Which of the following compounds decompose on heating ?
(A) $\mathrm{NaHCO}_{3}$
(B) $\mathrm{Na}_{2} \mathrm{CO}_{3}$
(C) $\mathrm{CaCO}_{3}$
(D) $\mathrm{K}_{2} \mathrm{SO}_{4}$
41. Among the nitrates of alkali metals which one can be decomposed to its oxide on strong heating ?
(A) $\mathrm{NaNO}_{3}$
(B) $\mathrm{KNO}_{3}$
(C) $\mathrm{LiNO}_{3}$
(D) all of these
42. The anhydrous calcium sulphate is called :
(A) gypsum
(B) anhydrite
(C) lime
(D) plaster of Paris
(3)M-CL-13(CHEM)
43. Vegetable colouring matter in presence of moisture is bleached by $\mathrm{SO}_{2}$ due to :
(A) oxidation
(B) reduction
(C) sulphonation
(D) unsaturation
44. Which bond has the greatest polarity ?
(A) $\mathrm{H}-\mathrm{Cl}$
(B) $\mathrm{H}-\mathrm{Br}$
(C) HCl
(D) $\mathrm{H}-\mathrm{F}$
45. Which of the following statements is correct ?
(A) He has the lowest BP
(B) He is monoatomic
(C) Liquid He has almost zero viscosity
(D) all are correct
46. $\mathrm{HgI}_{2}$ on addition of excess of KI forms :
(A) $\mathrm{Hg}_{2} \mathrm{I}_{2}$
(B) Hg
(C) $\mathrm{K}_{2} \mathrm{HgI}_{4}$
(D) $\mathrm{Hg}+\mathrm{KI}_{3}$
47. Zinc white is a better white pigment than lead white because :
(A) it has more covering powder than lead white
(B) it is not blackened by the action of $\mathrm{H}_{2} \mathrm{~S}$
(C) it is soluble in water
(D) it becomes yellow when heated
48. Substance soluble in ammonia is :
(A) $\mathrm{Cu}(\mathrm{OH})_{2}$
(B) $\mathrm{Al}(\mathrm{OH})_{3}$
(C) $\mathrm{Cr}(\mathrm{OH})_{3}$
(D) $\mathrm{Fe}(\mathrm{OH})_{3}$
49. Magnetic moment of $\left[\operatorname{Ag}(\mathrm{CN})_{2}\right]^{-}$is zero. How many unpaired electrons are there ?
(A) Zero
(B) 4
(C) 3
(D) 1
50. The correct IUPAC name of $\mathrm{K}_{2}\left[\mathrm{Zn}(\mathrm{OH})_{4}\right]$ is :
(A) Potassium tetrahydroxy zinc (II)
(B) Potassium tetrahydroxozincate (II)
(C) Potassium tetrahydroxy zincate (IV)
(D) Potassium hydroxo zinc (II)
51. Which one of the following is responsible for the brown colour in the ring test for a nitrate ?
(A) $\left[\mathrm{Fe}\left(\mathrm{H}_{2} \mathrm{O}\right)_{5} \mathrm{NO}\right]^{2+}$
(B) $\quad\left[\mathrm{Fe}(\mathrm{CN})_{5} \mathrm{NO}\right]^{2-}$
(C) $\left[\mathrm{Fe}\left(\mathrm{NO}_{2}\right)_{6}\right]^{4-}$
(D) $\left[\mathrm{Fe}\left(\mathrm{H}_{2} \mathrm{O}\right)_{5} \mathrm{NO}_{2}\right]+$
52. Which of the following ions can be separated by using $\mathrm{NH}_{4} \mathrm{Cl}$ and $\mathrm{NH}_{4} \mathrm{OH}$ ?
(A) $\mathrm{Al}^{+3} \& \mathrm{Ba}^{+2}$
(B) $\mathrm{Cr}^{+3} \& \mathrm{Co}^{+2}$
(C) Both (A) and (B)
(D) None of these
53. In solid $\mathrm{CuSO}_{4} \cdot 5 \mathrm{H}_{2} \mathrm{O}$ copper is coordinated to :
(A) 4 water molecules
(B) 5 water molecules
(C) one sulphate molecule
(D) one water molecule
54. Which of the following has lowest value of magnetic behaviour ?
(A) $\left[\mathrm{Cr}(\mathrm{CN})_{6}\right]^{3-}$
(B) $\left[\mathrm{Fe}(\mathrm{CN})_{6}\right]^{3-}$
(C) $\left[\mathrm{Mn}(\mathrm{CN})_{6}\right]^{3-}$
(D) $\quad\left[\mathrm{Co}(\mathrm{CN})_{6}\right]^{3-}$
55. Complex ions $\left[\mathrm{Ni}(\mathrm{CN})_{6}\right]^{4-},\left[\mathrm{Ni}\left(\mathrm{Cl}_{6}\right)^{4-}\right.$ similar in their properties :
(A) oxidation state and geometry
(B) coordination number, EAN
(C) magnetic moment and geometry
(D) all of the above
56. A red solid is insoluble in water but soluble in the presence of KI. Heating the red solid in a test tube result in the formation of yellow sublimate in the part of test tube. The red solid is :
(A) $\mathrm{Pb}_{3} \mathrm{O}_{4}$
(B) $\mathrm{HgI}_{2}$
(C) HgO
(D) $\left(\mathrm{NH}_{4}\right)_{2} \mathrm{Cr}_{2} \mathrm{O}_{7}$
57. Which of the following pairs of cations can be separated by passing $\mathrm{H}_{2} \mathrm{~S}$ gas through the mixture in the presence of 0.2 M HCl ?
(A) $\mathrm{Pb}^{+2}, \mathrm{Cu}^{+2}$
(B) $\mathrm{Ag}^{+}, \mathrm{Cu}^{+2}$
(C) $\mathrm{Bi}^{+3}, \mathrm{Cd}^{+2}$
(D) $\mathrm{Zn}^{+2}, \mathrm{Cu}^{+2}$
58. Acidic $\mathrm{K}_{2} \mathrm{Cr}_{2} \mathrm{O}_{7}$ reacts with $\mathrm{H}_{2} \mathrm{~S}$ to produce :
(A) $\mathrm{Cr}^{+3}$ ions $\& \mathrm{~S}$
(B) $\mathrm{Cr}^{+3}$ ions $\& \mathrm{SO}_{2}$
(C) $\mathrm{Cr}^{+6}$ ions \& S
(D) $\mathrm{Cr}^{+3}$ ions \& $\mathrm{H}_{2} \mathrm{SO}_{4}$
59. Which of the following are coloured ?
(A) $\mathrm{PbCl}_{2} \& \mathrm{PbI}_{2}$
(B) $\mathrm{AgCl} \& \mathrm{PbI}_{2}$
(C) $\mathrm{AgI} \& \mathrm{PbI}_{2}$
(D) $\mathrm{PbCl}_{2} \& \mathrm{AgCl}$
60. Which of the following reagents can be used to distinguish between $\mathrm{SO}_{2}$ and $\mathrm{CO}_{2}$ ?
(A) Zinc nitroprusside paste in water
(B) Acidified dichromate paper
(C) Potassium iodate and Starch
(D) All of the above
61. Alkyl cyanide ( $\mathrm{R}-\mathrm{CN}$ ) and alkyl isocyanide ( $\mathrm{R}-\mathrm{NC}$ ) are :
(A) Tautomers
(B) Metamers
(C) Functional isomers
(D) Geometrical isomers
62. Resonance is due to :
(A) Delocalization of sigma electrons
(B) Delocalization of pi electrons
(C) Migration of H -atoms
(D) Migration of protons
63. Glucose and fructose are :
(A) chain isomers
(B) position isomers
(C) functional isomers
(D) optical isomers
64. The stabilization due to resonance is maximum in :
(A) Cyclohexane
(B) Cyclohexa-1,3,5-triene
(C) Cyclohexene
(D) Cyclohexa-1,2-diene
65. Lactic acid exhibit optical activity in :
(A) Crystalline state
(B) Liquid state
(C) Solution
(D) All of these
66. The first Nobel Prize in Chemistry awarded to :
(A) Pasteur
(B) Vant Hoff
(C) Rutherford
(D) Madam Curie
67. The gas which is used for artificial ripening of fruits is :
(A) $\mathrm{C}_{2} \mathrm{H}_{6}$
(B) $\mathrm{C}_{2} \mathrm{H}_{2}$
(C) $\mathrm{C}_{2} \mathrm{H}_{4}$
(D) Marsh gas
68. When propyne is treated with aqueous $\mathrm{H}_{2} \mathrm{SO}_{4}$ in presence of $\mathrm{HgSO}_{4}$, the major product is :
(A) Propanal
(B) Propyl hydrogen sulphate
(C) Acetone
(D) Propanol
69. Nobel's oil is :
(A) fire extinguisher
(B) explosive
(C) insecticide
(D) rodenticide
70. The following reaction is :
$\mathrm{RONa}+\mathrm{XR}^{\prime} \longrightarrow \mathrm{R}-\mathrm{O}-\mathrm{R}^{\prime}+\mathrm{NaX}$
(A) Kiliani synthesis
(B) Williamson's synthesis
(C) Reimer-Tiemann's reaction
(D) Tischenko reaction
71. Which compound will not reduce Fehling's solution ?
(A) Ethanal
(B) Methanal
(C) Benzaldehyde
(D) Fructose
72. Which acid is present in vinegar ?
(A) $\mathrm{CH}_{3} \mathrm{COOH}$
(B) HCl
(C) Citric acid
(D) Tartaric acid
73. Which one of the following aldehydes gives Cannizzaro's reaction when heated with strong alkali ?
(A) Benzaldehyde
(B) Acetaldehyde
(C) Propenaldehyde
(D) All of these
74. Production of Caprolactum, which is a raw material and monomer unit of Nylon-6, is done with :
(A) Beckmann's rearrangement
(B) Benzoin condensation
(C) Claisen condensation
(D) Wittig reaction
75. A plastic Bakelite is a compound of HCHO with :
(A) Benzene
(B) Ammonia
(C) Phenol
(D) Hydrocarbon
76. Diels-Alder reaction is :
(A) used to produce six membered ring
(B) stereospecific in nature
(C) rate of reaction increases if electron donating groups are on dienes
(D) all of the above
77. When wine is put in air, it becomes sour due to :
(A) oxidation of $\mathrm{C}_{2} \mathrm{H}_{5} \mathrm{OH}$
(B) reduction of $\mathrm{C}_{2} \mathrm{H}_{5} \mathrm{OH}$
(C) formation of $\mathrm{C}_{2} \mathrm{H}_{5} \mathrm{NH}_{2}$
(D) dissolution of $\mathrm{CO}_{2}$
78. An alkyne which, when added to a solution of $\mathrm{AgNO}_{3}$ in alcohol forms a precipitate. The alkyne is a :
(A) Terminal alkyne
(B) Non-terminal alkyne
(C) Both (A) and (B)
(D) None of these
79. When aniline is heated with benzaldehyde, the product is :
(A) Benzoin
(B) Schiff's base
(C) Azoxy benzene
(D) Unsaturated acid
80. Which is sweetest among sugars ?
(A) Sucrose
(B) Fructose
(C) Glucose
(D) Lactose
81. Protein is an important constituent of our diet. It functions mainly as :
(A) a source of energy
(B) construction material
(C) reserve food
(D) shock absorber
82. Oils are :
(A) Phospholipids
(B) Steroids
(C) Liquid fats
(D) All of these
83. Degree of unsaturation in oils and fats is measured in terms of :
(A) Saponification value
(B) Iodine value
(C) Acetyl value
(D) $\quad \mathrm{R} / \mathrm{M}$ value
84. Which one is not present in RNA ?
(A) Uracil
(B) Thymine
(C) Ribose
(D) Phosphate
85. The helical structure of protein is stabilized by :
(A) Peptide bonds
(B) Hydrogen bonds
(C) Dipeptide bonds
(D) van der Waal's forces
86. Alkaline hydrolysis of an ester is called :
(A) Neutralisation
(B) Esterification
(C) Polymerisation
(D) Saponification
(3)M-CL-13(CHEM)
87. The order of basic strength of heterocyclic compounds is :
(A) pyridine $>$ pyrrole $>$ furan $>$ thiophene
(B) pyrrole $>$ pyridine $>$ furan $>$ thiophene
(C) furan $>$ pyrrole $>$ pyridine $>$ thiophene
(D) thiophene $>$ pyrrole $>$ furan $>$ pyridine
88. Bee wax is :
(A) tripalmitin
(B) cetyl palmitate
(C) myricyl palmitate
(D) myricyl cerotate
89. The formation of cyanohydrin from a ketone is an example of :
(A) Nucleophilic substitution
(B) Nucleophilic addition
(C) Electrophilic substitution
(D) Electrophilic addition
90. Which of the following five membered rings is most resonance stabilised ?
(A) Furan
(B) Pyrrole
(C) Thiophene
(D) Pyridine
91. Five membered rings come under which category of heterocycle classification on the basis of chemical behaviour ?
(A) excessive heterocycle
(B) deficient heterocycle
(C) equivalent heterocycle
(D) cannot say about five membered rings
92. The region of electromagnetic spectrum for NMR is :
(A) Microwave
(B) UV-rays
(C) Infrared
(D) Radio frequency
93. NMR spectroscopy indicates the chemical nature of the $\qquad$ and spatial positions of. $\qquad$
(A) Electrons, Protons
(B) Neutrons, Electrons
(C) Nuclei, Electrons
(D) Nuclei, Neighbouring nuclei
94. If the number of protons and neutrons is even the spin of the nucleus will be :
(A) Integral spin
(B) Half Integral spin
(C) Zero spin
(D) Positive spin
95. The uncertainty principle states that the error in measurement is due to :
(A) Dual nature of particles
(B) Due to the small size of particles
(C) Due to large size of particles
(D) Due to error in measuring instrument
96. The legend system present in Vitamin $B_{12}$ is :
(A) Porphyrin
(B) Corrin
(C) Phthalocyanine
(D) Crown ether
97. Most animal cells have :
(A) Higher concentration of $\mathrm{K}^{+}$ions outside the cell membrane
(B) Higher concentration of $\mathrm{Na}^{+}$ions inside the cell membrane
(C) Higher concentration of $\mathrm{K}^{+}$ions inside and higher concentration of $\mathrm{Na}^{+}$ion outside the cell membrane.
(D) Higher concentration of $\mathrm{Na}^{+}$ions inside and lower concentration of $\mathrm{K}^{+}$ions outside the cell membrane.
98. Haemoglobin and myoglobin binds :
(A) only $\mathrm{O}_{2}$
(B) $\mathrm{CO}, \mathrm{NO}$
(C) $\mathrm{CN}^{-}$
(D) All of these
99. The last line in the plot of conductance versus volume of NaOH in all the titration is due to :
(A) decrease in the $\mathrm{OH}^{-}$ions
(B) increase in the $\mathrm{OH}^{-}$ions
(C) decrease in the $\mathrm{H}^{+}$ions
(D) increase in the $\mathrm{Na}^{-}$ions
100. The Schrödinger wave equation is a :
(A) Linear differential equation
(B) Non-linear differential equation
(C) Second order equation
(D) First-order equation

## GENERAL APTITUDE

101. Direction : Study the following information carefully and answer the question given below :

It has been given that-
A is + from point $B$ states $B$ is to the NORTH of $A$.
A is $=$ from point B states B is to the SOUTH of A .
A is $\|$ from point B states A is to the East of B .
A is * from point $B$ states $A$ is to the WEST of $B$.
Now, $S$ is $=20 \mathrm{~m}$ from point P . Point Q is $=15 \mathrm{~m}$ from point R. Point U is +15 m from Point V. Point T is $\| 20 \mathrm{~m}$ from point V. Point U is $\| 16 \mathrm{~m}$ from point Q. Point $R$ is $\| 30 \mathrm{~m}$ from point P .
$U$ is in which direction with respect to $P$ ?
(A) East
(B) South-East
(C) North-East
(D) South-West
102. Complete the series :

3933129513 ?
(A) 2052
(B) 2049
(C) 1951
(D) 1849
(3)M-CL-13(CHEM)
103. Direction : Study the following information carefully and answer the question given below :
' $\mathrm{B}+\mathrm{A}$ ' means ' A is son of $\mathrm{B}^{\prime}$
' $\mathrm{B} \times \mathrm{A}$ ' means A is father of $\mathrm{B}^{\prime}$
'A \% B' means 'A is son-in-law of B'
' $\mathrm{B}-\mathrm{A}$ ' means ' A is wife of B '
' A * B ' means ' B is brother of A '
' $\mathrm{A} \# \mathrm{~B}$ ' means ' B is the only sister of A '
Which symbol will come in place of question marks in the following equation to show that L is paternal aunt of P ?
$\mathrm{P} \times \mathrm{Q} \times \mathrm{R}+\mathrm{S}$ ? L
(A) \#
(B) $\times$
(C) -
(D) Either (A) or (C)
104. Direction : Read the information carefully and answer the question given below :

In a certain code language,
'speak nicely to all' is coded as "ka cu ma he"
'all are like us' is coded as " si fo he to"
'teach us lesson nicely' is coded as " po ma fo re"
'lesson like all humans' is coded as "he re gu si"
What would be the code for 'speak to me' ?
(A) ma ka go
(B) lo ma fo
(C) re ma ku
(D) ka cu lo
105. Suggest : Demand :: $\qquad$ :
(A) Take: Grab
(B) Question: Ask
(C) Give : Receive
(D) Deny : Request
106. Find out the number of triangles in the given figure :

(A) 12
(B) 14
(C) 16
(D) 18
107. Direction : Read the following information carefully and answer the question given below :

Eight friends $\mathrm{P}, \mathrm{Q}, \mathrm{R}, \mathrm{S}, \mathrm{T}, \mathrm{U}, \mathrm{V}$ and W are standing in a straight line facing north, but not necessarily in the same order.
$R$ and $W$ are immediate neighbours of $S . V$ is immediate neighbour of $U$ and $W$. T and Q are immediate neighbours of P . Neither T nor R is at the extreme ends of the line. $U$ is on the right of $T$.

Who among the following are at the extreme ends of the line ?
(A) $\mathrm{Q}, \mathrm{U}$
(B) $\mathrm{P}, \mathrm{U}$
(C) R, U
(D) $\mathrm{W}, \mathrm{U}$
108. In the following question, there is a statement followed by two arguments I and II. Read carefully and choose the right option from the given possible answers :

Given answers :
(a) Only argument I is strong
(b) Only argument II is strong
(c) Either I or II is strong
(d) Neither I nor II is strong

Statement-Should the age of retirement in government services be increased in view of longer life span in India ?

## Arguments-

I. Yes, other countries have already taken such decision.
II. Yes, it is a genuine demand of lakh of employees.
(A) (a)
(B) (b)
(C) (c)
(D) (d)
109. In the following figure,

Rectangle represents males
Triangle represents educated
Circle represents urban
Square represents civil servants


Who among the following is an educated male who is not an urban resident ?
(A) 11
(B) 9
(C) 5
(D) 4
110. Arrange the words given below in a meaningful sequence :

1. Hecto 2. Centi 3. Deca 4. Kilo 5. Deci
(A) $1,3,4,5,2$
(B) $1,5,3,4,2$
(C) 2, 5, 3, 1, 4
(D) $5,2,1,4,3$

## GENERAL ENGLISH

111. Directions : Which of the phrases given below should replace the phrase given in bold in the following sentence to make the sentence grammatically correct? Gionee has been found guilty for intentionally inflicting malware in over 20 million phones by a Chinese court.
(A) had been found guilty for
(B) has been found guilty of
(C) has been found being guilty with
(D) have found to guilty for
112. The four sentences (labelled 1, 2, 3, 4) below, when properly sequenced would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer :
113. Relying on narrative structure alone, indigenous significances of nineteenth century San folktales are hard to determine.
114. Using their supernatural potency, benign shamans transcend the levels of the San cosmos in order to deal with social conflict and to protect material resources and enjoy a measure of respect that sets them apart from ordinary people.
115. Selected tales reveal that they deal with a form of spiritual conflict that has social implications and concern conflict between people and living or dead malevolent shamans.
116. Meaning can be elicited, and the tales contextualized, by probing beneath the narrative of verbatim, original-language records and exploring the connotations of highly significant words and phrases.
(A) 1432
(B) 1423
(C) 1324
(D) 1342
117. Fill in the blank :

We must not carp. $\qquad$ .the errors of our ancestors.
(A) From
(B) With
(C) In
(D) About
114. Direction : Select the option which contains the part of the sentence which has an error (spelling, grammatical or contextual) :

The model is based on legislation drafted(A)/in France where businesses are required(B)/to send scrap food to(C)/waste management plants to be used as a fertilizer.(D)/
(A) the model is based on legislation drafted
(B) in France where businesses are required
(C) to send scrap food to
(D) waste management plants to be used as a fertilizer.
115. Direction : The following question has two blanks, each blank indicating that something has been omitted. Choose the set of words for each blank that best fits in the context of the sentence :

It is the Centre's responsibility to ensure that the Environment Protection Act, the $\qquad$ law that enables anti-pollution rules to be issued, is. $\qquad$ .in letter and spirit.
(A) overarching, implemented
(B) ancient, assumed
(C) principal, controlled
(D) primary, rejected
116. Find the correctly spelt word :
(A) Scrible
(B) Scribbale
(C) Screebble
(D) Scribble
117. In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.

To shoot the breeze
(A) to do random acts hoping one will be successful
(B) to have a casual conversation
(C) Fail to win appreciation
(D) to brag about some mild achievements
118. Out of the four alternatives choose the one which can be substituted for the given words/sentence in the question :

Loop of rope
(A) Repine
(B) Rankle
(C) Noose
(D) Flay
119. Find the antonym of OBSEQUIOUS :
(A) Clear
(B) Clever
(C) Dandified
(D) Domineering
120. Find the synonym of ANTEDILUVIAN :
(A) Antiquated
(B) Parched
(C) Nonsectarian
(D) Nonsensical

