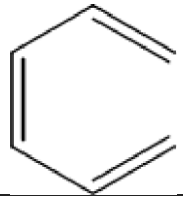
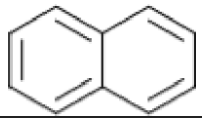
Program: First Year (ALL)
Engineering Curriculum Scheme: R-2019
First Year Semester I
Course Code: FEC103 and Course Name: Engineering Chemistry I

For the students: All the Questions are compulsory and carry equal marks.

Q. 01	Which of the following are Temporary hardness causing impurities
Option A:	$MgCO_3$
Option B:	$MgCl_2$
Option C:	$MgSO_4$
Option D:	$Ca(NO_3)_2$
Q. 02	$CaCO_3$ equivalent of 13.35 gm $AlCl_3$ salt is
Option A:	10 gm
Option B:	100 gm
Option C:	15 gm
Option D:	30 gm
Q. 03	EDTA method is also called as .
Option A:	Redox titration
Option B:	Complexometric titration
Option C:	Iodometric titration
Option D:	Neutralisatoion titration
Q. 04	Which indicator is used for estimation of hardness of water by complexometric titration method
Option A:	EDTA
Option B:	EBT
Option C:	Phenolpthalene
Option D:	Methyl Orange
Q. 05	In Reverse Osmosis using semi-permeable membrane
Option A:	Water flows from high Concentration to Low Concentration
Option B:	Salts flows from high Concentration to Low Concentration
Option C:	Water flows from low Concentration to high Concentration
Option D:	Salts flows from low Concentration to high Concentration
Q. 06	6 ml of waste water was refluxed with 25 ml of N/10 $K_2Cr_2O_7$ and after refluxing the excess dichromate required 20 ml of N/10 FAS. Calculate COD of sample.
Option A:	2000 ppm
Option B:	200 ppm
Option C:	20ppm
Option D:	10 pP
Q. 07	Which of the following compounds is aromatic?

Option A:	
Option B:	
Option C:	
Option D:	
Q. 08	Thermo-setting plastic is
Option A:	Plastic which on heating becomes soft and on cooling becomes hard
Option B:	Plastic which on heating becomes hard and can be soften again by heating
Option C:	Plastic which on heating becomes hard and can't be soften again by heating
Option D:	Plastic which is obtained by addition polymerisation
Q. 09	Which of the following is a thermosetting polymer?
Option A:	Polyethene
Option B:	Polyvinyl chloride
Option C:	Phenol formaldehyde
Option D:	Polystyrene
Q. 10	The major function of plasticizer is to
Option A:	Impart colour to the polymer
Option B:	Increase flexibility of polymer
Option C:	Speed up the reaction
Option D:	Act as a filler
Q. 11	Kevlar is synthesized from
Option A:	Terephtalic acid dichloride
Option B:	Phenol
Option C:	Benzene
Option D:	Ethylene dichloride
Q. 12	What is the purpose of addition of Barium salt in the plastic
Option A:	To improve hardness of plastic
Option B:	To improve strength of the plastic
Option C:	To make the plastic imprevious to X rays
Option D:	To avoid decomposion of plastic at moulding temperature
Q. 13	Which of the following is conducting polymer
Option A:	Phenol phormaldehyde

Option B:	Polystyrene
Option C:	Polyacetylene
Option D:	Polypropylene
Q. 14	Which of the following is obtained by addition polymerisation
Option A:	Nylon 66
Option B:	PVC
Option C:	Kevlar
Option D:	Bakelite
Q. 15	The total number of electrons in a subshell designated by azimuthal quantum number, 1 is given as--
Option A:	2 1 + 1
Option B:	1+1
Option C:	4 1 + 2
Option D:	21+2
Q. 16	Two values of spin quantum numbers +1/2 and -1/2 represent
Option A:	up and down spin of electrons respectively
Option B:	two quantum mechanical spin states which refer to the orientation of spin of the electron
Option C:	clockwise and anti-clockwise spin of the electrons respectively
Option D:	anti-clockwise and clockwise spin of the electrons respectively
Q. 17	The conclusion that every additional electron enters the orbital with lowest possible energy has been drawn from--
Option A:	Pauli's exclusion principle
Option B:	Hund's rule
Option C:	Aufbau principle
Option D:	De-Broglie's equation
Q. 18	Which of the following have higher energy level
Option A:	7s
Option B:	6p
Option C:	5f
Option D:	4f
Q. 19	Which of the following is intermolecular bonding?
Option A:	Ionic Bonding
Option B:	Covalent Bonding
Option C:	Hydrogen Bonding
Option D:	Metallic Bonding
Q. 20	What type of intermolecular force is responsible for the attraction between polar molecules?
Option A:	Dipole-dipole
Option B:	Ion-induced dipole
Option C:	Ion-dipole
Option D:	Dipole-Induced dipole
Q. 21	The boiling point of H_2O is much higher than the boiling point of H_2S because
Option A:	The intermolecular attractive forces are much greater in water than in H_2S

Option B:	Water has the lowest molecular weight.
Option C:	The H-O covalent bond is much stronger than the H-S and H-Se bonds.
Option D:	Water is less polar than hydrogen sulfide
Q. 22	What is Gibbs phase rule for chemical equilibrium system?
Option A:	P = C —1 —F
Option B:	P = C + 1 —F
Option C:	P F = C —2
Option D:	P + F = C + 2
Q. 23	The degree of freedom at a triple point in the phase diagram for water is--
Option A:	0
Option B:	1
Option C:	2
Option D:	3
Q. 24	An alloy of Cadmium and Bismuth contains 25% Cadmium, Find the mass of Eutectic in 1 Kg of solid alloy, if the Eutectic contains 40% of Cadmium.
Option A:	166 gm
Option B:	625 gm
Option C:	500 gm
Option D:	375 gm
Q. 25	Reduced phase rule is also known as-
Option A:	Short phase rule
Option B:	Condensed phase rule
Option C:	Gibb’s phase rule
Option D:	Equilibrium phase rule