

INTERNAL ASSESSMENT EXAMINATION, 2020

DSE-1B (CHEMISTRY GENERAL)

Pick up the **correct alternative** from the options given in each question:

Full Marks: 10 (1 marks per MCQ)

- Number of carbon and nitrogen atoms in the product obtained from the reaction between ammonia and formaldehyde –
(a) 4, 6 (b) 6,4 (c) 6.6 (d) 4.4
- Select the correct combination of three reactions that are arranged sequentially featuring (i) a reaction in which a sacrificial alcohol is employed, (ii) a disproportionation reaction and (iii) a reaction in which the same kind of reagent is used as in (i) & (ii) -
(a) (i) Aldol condensation, (ii) Cannizzaro reaction and (iii) Perkin reaction
(b) (i) Oppenauer oxidation, (ii) Tischenko reaction and (iii) Meerwein-Ponndorf –Verley reduction
(c) (i) Benzoin condensation, (ii) Reaction of carbonyl compounds with HCN and (iii) Stephen reduction
(d) (i) Meerwein-Ponndorf –Verley reduction, (ii) Tischenko reaction and (iii) Oppenauer oxidation
- Select the correct combination of three reactions that are arranged sequentially featuring (i) hydride shift occurs, (ii) a reagent short of octet is formed *in situ* and (iii) nucleophilic substitution reaction -
(a) (i) Haloform reaction (ii) Friedel Craft acylation and (iii) Side chain halogenations of toluene
(b) (i) Mannich reaction (ii) Diazotization and (iii) Knoevenagel reaction
(c) (i) Cannizzaro reaction, (b) Reimer-Tiemann reaction and (iii) Hydroxylation of nitrobenzene
(d) (i) Tollens' reaction, (ii) Fries rearrangement and (iii) Libermann reaction
- Reaction between monochloroethane and sodium 2-methylpropan-2-olate furnishes-
(a) 2-ethoxy-2-methylpropane
(b) 2-methoxy-2-ethylpropane
(c) 2-ethoxy-3-methylpropane
(d) 2-methoxy-3-methylpropane
- What are the monomers that are used for the synthesis of Nylon-66?
(a) adipic acid & hexamethylenediamine
(b) adipic acid & ethylenediamine
(c) adipic acid & tetramethylethylenediamine
(d) adipic acid & hexamethylenetetramine
- Which of the followings is a triphenylmethane based dye?
(a) Methyl orange
(b) Congo red
(c) Crystal violet
(d) Bismarck brown

7. Metronidazole belongs to the family of
- (a) anti-bacterial drugs
 - (b) anti-protozoal drugs
 - (c) anti-depressant drugs
 - (d) anti-tubercular drugs
8. Which of the following is a characteristics of the soap molecule
- (a) Hydrophilic end
 - (b) Hydrophobic end
 - (c) Both a. and b.
 - (d) None of the above
9. What is the full form of DDT
- (a) Dichlorodiphenyltrichlorbutane
 - (b) Dichlorodiphenyltrichloromethane
 - (c) Dichlorodiphenyltrichloroethane
 - (d) Dichlorodiphenyltetrachloroethane
10. Which of the following is an artificial sweetener
- (a) Potassium glutamate
 - (b) Potassium saccharin
 - (c) Sodium saccharin
 - (d) Sodium glutamate

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SEC-4 (CHEMISTRY GENERAL)

Pick up the *correct alternative* from the options given in each question:

Full Marks: 10 (1 marks per MCQ)

- Ziegler-Natta catalyst and butyl lithium are used respectively in the syntheses of-
 - HDPE and LDPE
 - NOVALAC and PTFE
 - HDPE and Polyacrylo nitrile
 - LDPE and Orlon
- PLEXIGLAS IS-
 - Polymethyl acrylate
 - Polymonochlorotrifluoroethylene
 - Polyethyl acrylate
 - Polymethylmethacrylate
- In a polymer sample 20 molecules have molar mass 5000, 30 have 10,000 and 40 have 20,000. Numer average, weigt average molar mass and polydispersity indexrespectively are-
 - 13333, 16250 and 1.22
 - 12667, 14750 and 1.16
 - 16250, 13333 and 0.82
 - 14750, 12667 and 0.86
- Calculate the degree of polymerization when 99% of the monomer undergoes polymerization reaction-
 - 10
 - 5
 - 100
 - 1000
- The plot $(-d[M]/dt)$ vs. $[M]^{3/2}$ of an addition polymerization reaction gives a straight line. $[M]$ is the concentration of the monomer. The type of free radical polymerization process is-
 - unimolecular (uncatalysed)
 - bimolecular (catalysed)
 - unimolecular (catalysed)
 - bimolecular (uncatalysed)
- What kind of polymer is 'Rayon'?
 - Natural
 - Synthetic
 - Semi-synthetic
 - None of the above
- What kind of molecular force is present in 'Kevlar'?
 - van der Waals force
 - Hydrogen Bonding
 - Coulombic force
 - Dipole-Dipole interaction

8. Thermocol Sheet is made from
- (a) PVC
 - (b) PVA
 - (c) PAN
 - (d) Polystyrene
9. Novalac is made from
- (a) Phenol & Formaldehyde
 - (b) Phenol & Acetaldehyde
 - (c) Phenol & Acraldehyde
 - (d) Phenol & Crotonaldehyde
10. Polyacetylene is a
- (a) Unsaturated polymer
 - (b) Conjugated polymer
 - (c) Conducting polymer
 - (d) All of the above