Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A+' Grade by NAAC.Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination –July 2020
IV Semester

Class : II UG | **Time : 3 Hours**
Major : Botany | **Max. Marks : 100**

18BBOI06 DSE-IV Chemistry theory for Botany

Part-A **10 x 1=10**
Choose the Correct Answer

1. Which of the following is carcinogenic?
   a.Methane b. Diethyl ether
   c. Ethanol d. Benzene
2. A suitable indicator for the titration between NaOH and HCl is
   a. Phenolphthalein b. Methyl orange
   c. Phenol yellow d. Methyl red
3. Urea is soluble in water due
   a. presence of C=O b. Vanderwal's forces
   c. H-bonding d. ionic nature
4. The P^H of water is
   a. = 7.0 b. >7.0
   c. >14.0 d. <7.0
5. The number of steroisomers possible for tartaric acid is
   a. 2 b. 3
   c. 1 d. 4
6. The group present in proteins is
   a. -NH- b. –O-
   c. –CONH- d. –COO-
7. The valency of carbon is
   a. 4 b. 3
   c. 2 d. 5
8. The requisite condition for a molecule to be active is the presence of
   a. Chirality b. Chiral centre
   c. Asymmetric carbon d. All the above
9. Identify the polar solvent from the following
   a. EtOH b.H_2O
   c. $CHCl_3$ d. benzene
10. Solids are purified by
    a. Extraction b. Vacuum filtration
    c. Distillation d. Crystallization

Part B **5 X 6=30**

Answer the following

Answer should not exceed 400 words or two pages

11. a. Give an account on health hazards in chemical laboratory.

(or)

11. b. What is a buffer solution. How is it prepared?

12. a. Illustrate the formation of ionic and covalent bonds with one example each.

(or)

12. b. Derive Kirchoff's equation.

13. a. What is meant by (+) & (-) and D & L notations?

(or)

13. b. Discuss optical isomerism exhibited by tartaric acid.

14. a. Describe the structure of glucose

(or)

14. b. Write an account on colour tests for proteins.

15. a. Discuss classification of secondary metabolites.

(or)

15. b. Explain soxhlet extraction.

Part C **5 x 12=60**

Answer the following

Answer should not exceed 800 words or four pages

16. a. Explain the precautionary measures to be taken while handling flammable, volatile, hazardous and corrosive chemicals.

(or)

16. b. i. Describe the principle of acid-base titrations

ii. Explain the terms mole fraction and molarity.

17. a. State Hess's law of heat of summation and discuss its applications.

(or)

17. b. i. Highlight on the importance of hydrogen bonding and hydrophobic interactions.

ii.Give an account of ionization of water and its P^H.

18. a. Explain the phenomenon of optical activity. How do you experimentally measure optical rotation and specific rotation?

(or)

18. b. Discuss optical and geometrical isomerism with suitable examples.

19. a. Describe i. properties and structure of sucrose

ii. Uses of starch and cellulose and their derivatives.

(or)

19. b. Discuss the classifications of proteins.

20. a. Write an account on plant metabolites.

(or)

20. b. Illustrate the following:

i.Simple distillation

ii.Gravity and vacuum filtration.

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