



**MANIPAL COLLEGE
OF PHARMACEUTICAL SCIENCES**
MANIPAL
A constituent institution of Manipal University

BPPharm Third Semester- End Semester- Make up Examination 2023

PCH-BP301T: Pharmaceutical Organic Chemistry-II

Date: 17/1/2023

Duration: 03 hours

Max. Marks: 75

Instructions: Answer ALL questions.

Multiple Choice Questions 20 x 1 mark = 20 marks

1. What kind of intermolecular force is present in hexane molecule?
 - a) dipolar interactions
 - b) present in the same group
 - c) Van der Waals interactions
 - d) hydrogen bonding
2. Which of the following statement is true about saponification value of oil?
 - a) The shorter the chain of fatty acid, the lower is the saponification value
 - b) The higher the saturation in fatty acid, the lower is the saponification value
 - c) The lower the saturation in fatty acid, the higher is the saponification value
 - d) The shorter the chain of fatty acid, the higher is the saponification value
3. The drying oils can be used in
 - a) paints and varnishes
 - b) as cooking oil
 - c) bakery products
 - d) parenteral preparations
4. The normal bond angle of cyclobutane as per Bayer's theory is
 - a) 90°
 - b) 40°
 - c) 60°
 - d) 120°
5. Which of the major product is formed when bromination of 4-nitrobiphenyl is carried out:
 - a) 4-nitro-4'-bromobiphenyl
 - b) 4-nitro-2'-bromobiphenyl
 - c) 4-nitro-2-bromobiphenyl
 - d) 4-nitro-3-bromobiphenyl

6. One of the following compounds is more reactive

- a) naphthalene
- b) benzene
- c) phenanthrene
- d) anthracene

7. According to Sachse-More theory, one of the following is highly stable:

- a) cyclohexane
- b) cyclopentane
- c) cyclopropane
- d) cyclobutane

8. The intermolecular force which binds base pairs in DNA is

- a) hydrogen bonding
- b) London forces
- c) dipolar interactions
- d) all the above

9. One of the following analytical constants help in classifying oils into drying, semidrying and non-drying:

- a) acetyl value
- b) acid number
- c) ester value
- d) iodine value

10. One of the following is an example for non-benzenoid aromatic compound:

- a) biphenyl
- b) azulene
- c) xylene
- d) styrene

11. Benzene is a membered hydrocarbon

- a) 3
- b) 4
- c) 5
- d) 6

12. Phenol is ----- in nature

- a) acidic
- b) basic
- c) neutral
- d) aliphatic

13. one of the following is an electron withdrawing group

- a) $-NH_2$
- b) $-NO_2$
- c) $-CH_3$
- d) $-CH_2-CH_3$

14. -----is meta director

- a) -NH_2 b) -NO_2 c) -CH_3 d) -Cl

15. In Friedel Crafts reaction -----is used as catalyst

- a) Aluminium chloride b) ethanol c) sodium chloride d) acetic acid

16. Phenols react with ferric chloride to give----- colour

- a) white b) violet c) black d) yellow

17. Benzene reacts with nitrating mixture to give

- a) bromobenzene b) nitrobenzene c) chlorobenzene d) iodobenzene

18. Aniline is a.....amine

- a) aliphatic b) strongly acidic c) aromatic d) alicyclic amine

19. The Pka of phenol is

- a) 3 b) 1 c) 5 d) 10

20. Electron withdrawing groups -----acidity of carboxylic acids

- a) increases b) decreases c) have no change on d) destroy



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Long Answers

2 x 10 marks = 20 marks

- 1a) Define acid value. Give the principle involved in its estimation. 5 marks
- b) Write the difference between oils and fats. 5 marks
2. Explain the structure of benzene with orbital diagram. Explain nitration of benzene with reaction. 10 marks

Short Answers

7 x 5 marks = 35 marks

1. Explain the method of preparation, qualitative tests and uses of phenol
2. Explain sulphonation and Friedel crafts reaction with equation. Give the use of saccharin sodium.
3. Discuss the method of preparation and acidity of carboxylic acids. Give the uses of cresol.
4. Give any two methods of preparation and the substitution reactions of biphenyl.
5. Write a note on reactions of naphthalene.
6. Give any one method of preparation of naphthalene and anthracene.
7. Explain the stability of cyclohexane. Discuss the Bayer's strain theory.