

16U317

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Name:

Reg. No.....

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2017

(Regular/Supplementary/Improvement)

(CUCBCSS - UG)

CC15U CHE3 C03 - ORGANIC CHEMISTRY

(Chemistry - Complementary Course)

(2015 Admission Onwards)

Time : Three Hours

Maximum : 64 Marks

SECTION A

Answer *all* questions. Each question carries 1 mark

1. Write down the structural formula of 5-Ethyl-3,4,6,6-tetramethylhept-1-yne.
2. A neutral species with an unpaired electron is.....
3. Conformational isomers exist inequilibrium and are unseparable.
4. Conversion of an enantiomer into an equimolar (dl) mixture is
5. Towards aromatic electrophilic substitution reaction, nitro group isdirecting.
6. Depict the structure of tropylium cation.
7. Butane is prepared by the electrolysis of concentrated aqueous solution of
8. A plant polysaccharide made up of alpha glucose units is.....
9. Draw the structure of coniine.
10. Neral is the geometric isomer of.....

(10 x 1 = 10 Marks)

SECTION B

Answer *any seven* questions. Each question carries 2 marks

11. What is meant by inductive effect? Name two groups which shows -I effect.
12. Define *hyperconjugation*.
13. How can maleic acid be converted into fumaric acid?
14. How can enantiomers be differentiated from diastereomers?
15. Convert benzene to p-nitrotoluene.
16. Predict the product obtained when diethylether is heated with excess of HI.
17. How does ammonia react with methanal? Mention the use of the product.
18. What is a zwitter ion? Represent an amino acid in a zwitter ionic way.
19. Write down the structural formulae of adenine and guanine.

20. Give the structure of piperine. Mention its uses.

(7 x 2 = 14 Marks)

SECTION C

Answer *any four* questions. Each question carries 5 marks

21. Discuss the mechanism of nitration and chlorination of benzene.

22. Explain the term steric hindrance with a suitable example.

23. Discuss the optical isomerism of lactic acid.

24. Explain the ortho- para directive influence of -NH₂ group in aromatic electrophilic substitution reactions.

25. What are crown ethers? Mention their applications.

26. Explain and illustrate Iodoform test.

(4 x 5 = 20 Marks)

SECTION D

(Answer *any two* questions. Each question carries 10 marks)

27. Discuss the method of preparation and synthetic applications of benzenediazonium chloride in detail.

28. a. State isoprene rule

b. What is vulcanization? Mention its advantages.

c. What are terpenoids? How are they classified?

d. Give the sources, structure and physiological activity of any two alkaloids.

29. a. Explain DNA fingerprinting and discuss its applications.

b.i) Explain the terms saponification number and iodine value of fats and oils.

ii) Explain mutarotation.

30. Discuss the various electron displacement effects in organic compounds with suitable examples.

(2 x 10 = 20 Marks)
