(6 pages)

1699/PC1 **OCTOBER 2011**

Paper – I : ORGANIC CHEMISTRY

Time : Three hours Maximum : 100 marks

SECTION A — (20 × 1 = 20 marks)

Answer ALL questions.

Choose the correct answer.

1. What is the type of hybridisation in Carbocation?

   (a) sp (b) sp^2

   (c) sp^3 (d) d^2sp^3.

2. Dissociation of carboxylate ion gives

   (a) Carbene (b) Carbanion

   (c) Carboniumion (d) Carbon-monoxide.

3. What is the symbol of identify operator?

   (a) I (b) E

   (c) S (d) J

4. Rotation axis of symmetry BF_3 molecule.

   (a) C_2 (b) C_3

   (c) C_4 (d) C_6.

5. What is the expansion of PDC?

   (a) Pyridinium dichlorate

   (b) Pyridinium dichromate

   (c) Potassium dichromate

   (d) Phenyl dichromate.

6. ———— is an oxidising gent.

   (a) $LialH_4$ (b) $NaBH_4$

   (c) Sn/Hel (d) Lead tetra acetate.

7. The synthetic equivant of R^+ is

   (a) ROH, (b) Rel

   (c) RM_gBr, (d) Rli.

8. In reterosynthetic analysis, the starting structure is

   (a) Reactant (b) Target

   (c) Precursor (d) Intermediate.

9. How many optical isomers possible for glucose?

   (a) 4 (b) 8

   (c) 12 (d) 16

10. What is gun cotton?

(a) Cellulose triacetate

(b) Cellulose diacetate

(c) Cellulose trinitrate

(d) Carboxymethyl cellulose.

Say True or Flase:

11. Primary carbonium ion is more stable than secondary carbonium ion.

12. Ammonia is an example for C_{3r} point group.

13. Selenium dioxide converts vitamin A into Retinene.

14. Disconnection of α-hydroxy ketone requires arylarion as equivalent.

15. Starch is the polymer of sucrose.

Fill in the blanks:

16. Dimerisation of carbene gives _____

17. If two similar groups are on the same side the diastereomer is called as _____

18. Amines react with peroxyacids to give _____

19. Disconnections usually take place adjacent to _____

20. Raffinose on hydrolysis gives glucose, fructose and _____

SECTION B — (5 × 6 = 30 marks)

Answer ALL questions by choosing either (a) or (b).

21. (a) Write any four reactions of nitrenes.

Or

(b) Describe the stability of carbanions.

22. (a) Explain any two methods of resolution of racemic mixtures.

Or

(b) Give an account of moleculary symmetry and chirality.

23. (a) Write a note on hydroboration of alkenes.

Or

(b) Mention any two reactions of wilkinson's catalyst.

24. (a) Explain Robinson annelation with examples.

Or

(b) Write notes one group C-X disconnection.

25. (a) List out the properties of alkaloids.

Or

(b) Write the Nomen elative of alkaloids.

SECTION C — (5 × 10 = 50 marks)

Answer ALL questions by choosing either (a) or (b).

26. (a) Explain the methods of determining reaction mechanism.

Or

(b) Discuss the stability and reactivity of carbocation.

27. (a) Explain stereoselective and stereospecific reactions. (5 + 5)

Or

(b) Write the point group classifications with examples.

28. (a) Write the reactions of:

(i) Sodium borohydride

(ii) 9-BBN (5 + 5)

Or

(b) Explain metal hydride reduction reactions.

29. (a) Describe any four guidelines for good disconnections.

Or

(b) Mention 1,2-and 1,3-difunction alised compounds with examples and their structures. (5 + 5)

30. (a) Elucidate the structure of glucose.

Or

(b) Discuss the structural determination of progesterone.

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