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Name.....*Hardeep*.....

Reg. No.....*02A1303030*.....

**THIRD SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
NOVEMBER 2013**

CH 09 304/PTCH 09 303—ORGANIC CHEMISTRY

Time : Three Hours

Maximum : 70 Marks

Part A

Answer all questions.

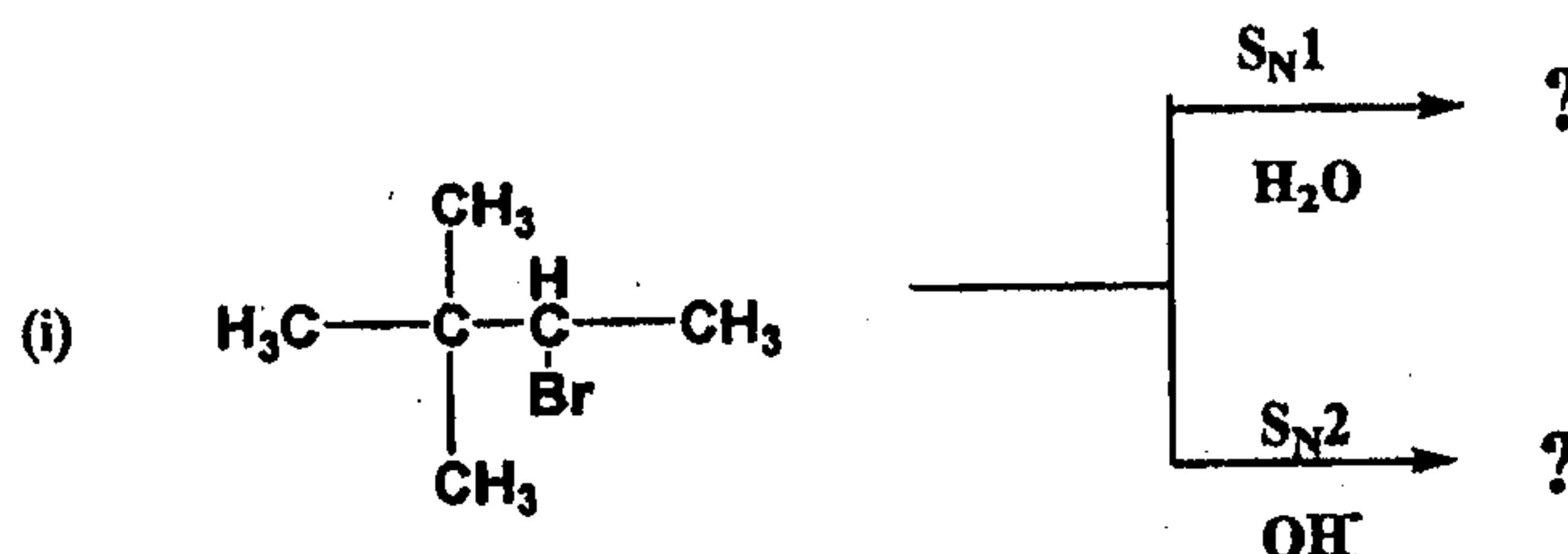
1. Why Grignard reagent is soluble in ether but not soluble in benzene ?
2. (a) What is meant by (b) sugars and non-sugars (c) reducing and non-reducing sugars ? Give examples.
3. Give the structure of vat dye ?
4. How do you prepare aspirin ?
5. Meso Tartaric acid is optically inactive. Why ?

(5 × 2 = 10 marks)

Part B

Answer any four questions.

6. (a) Predict and justify the products.

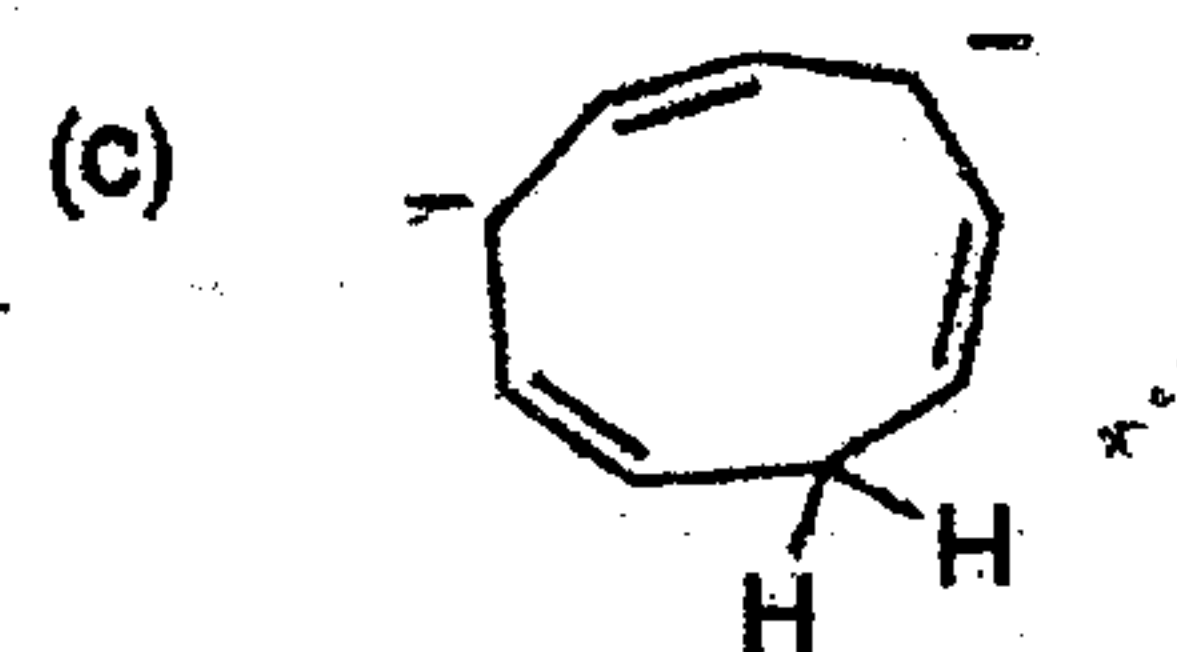
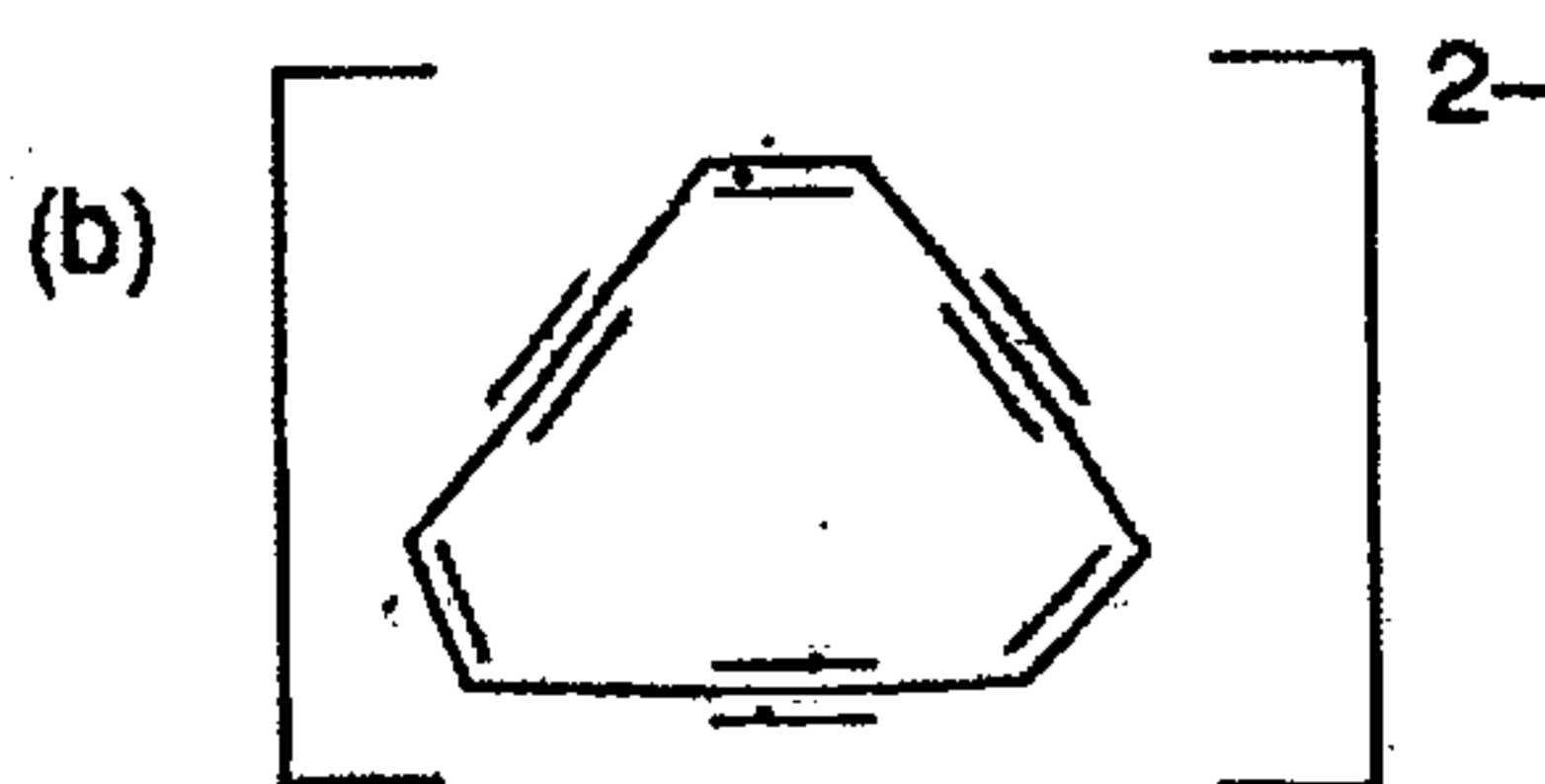
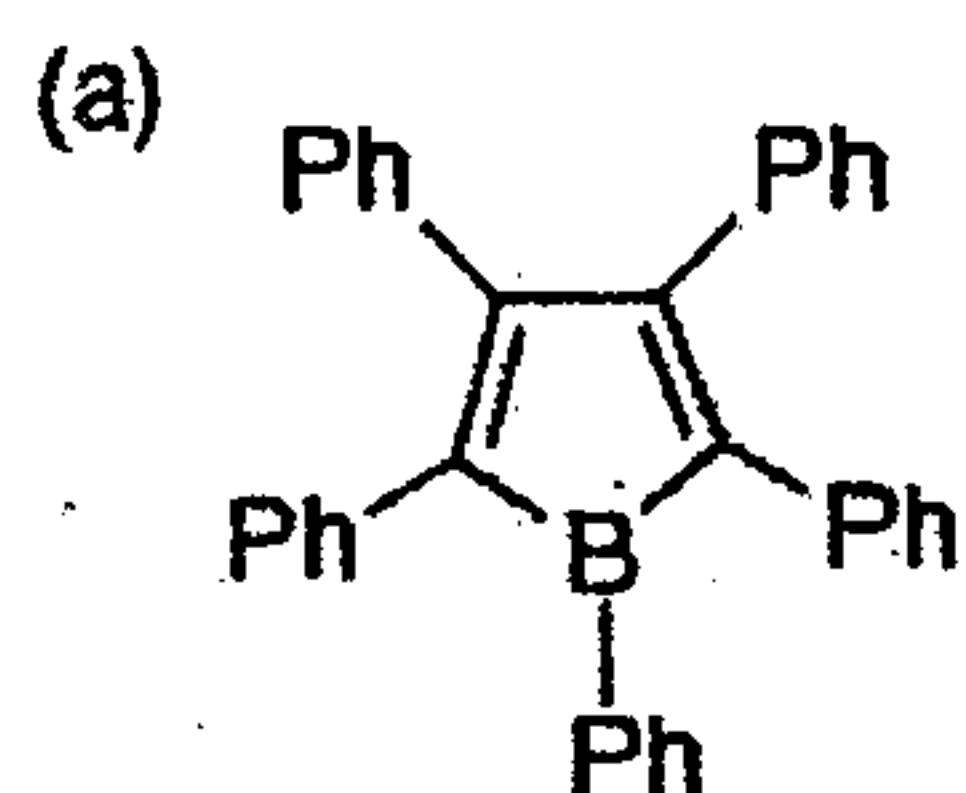


- (b) Explain (i) E₁ and E₂ mechanism using Menthyl chloride,

7. (i) Convert D-Arabinose to glucose and mannose ; (ii) Explain mutarotation with suitable example.
8. (i) Explain the role of sulphuric acid in nitration with proper reactions ; (ii) Explain Friedel Crafts reaction with push pull mechanism.
9. How do you synthesize Nicotine starting from succinimide.
10. What is meant by isoprene rule and special isoprene rule ? Also give evidences for isoprene rule.

Turn over

11. Predict whether or not the following structures would show strong delocalization and stabilization (aromatic), weak stabilization by conjugation (nonaromatic), or strong destabilization (antiaromatic) relative to acyclic model structures. Explain the basis for your prediction.

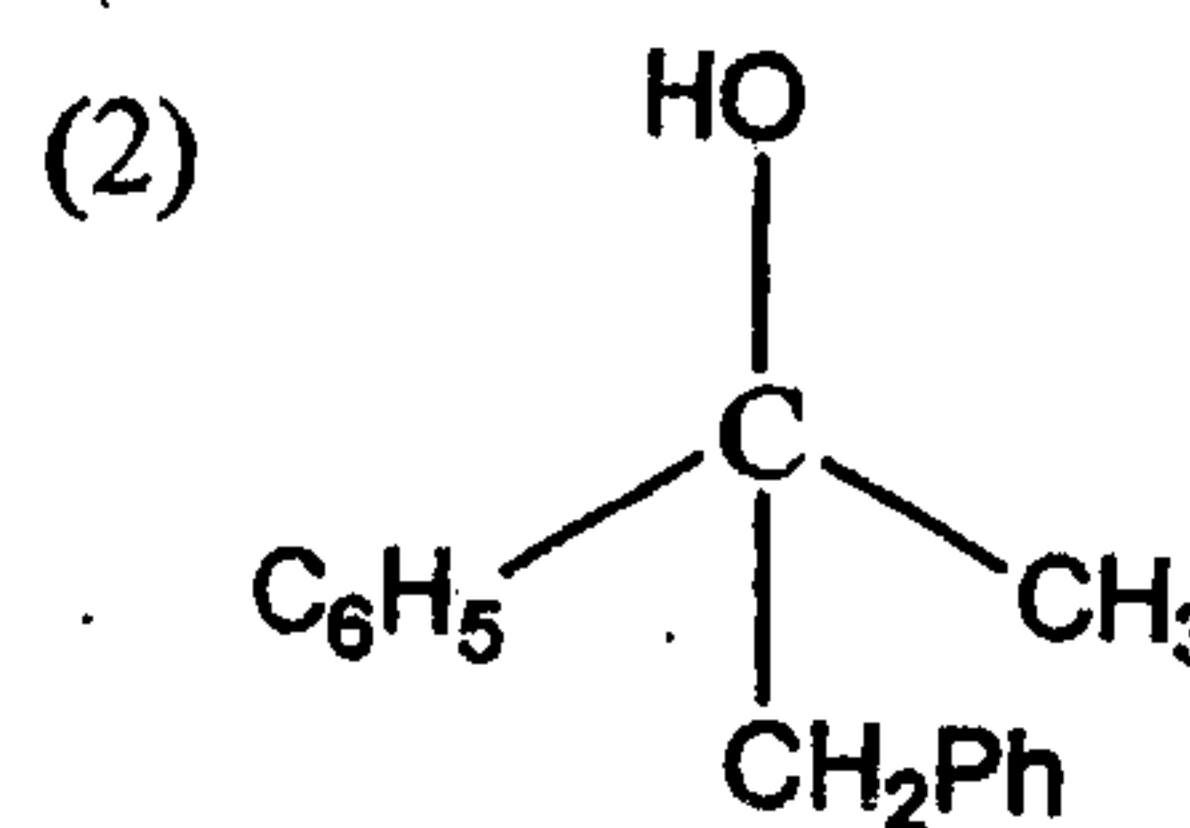
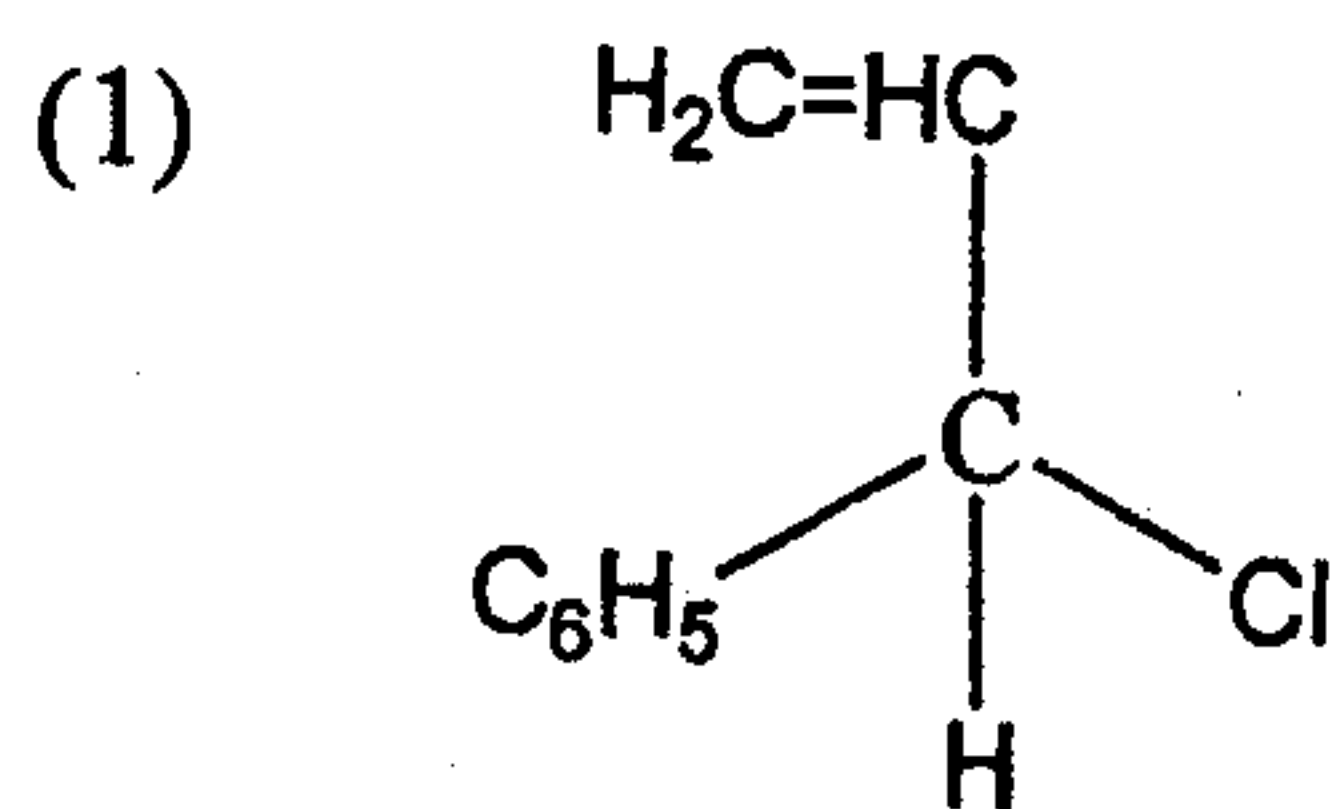


(4 × 5 = 20 marks)

Part C

Answer section (a) or section (b) of each question.

12. (a) (i) How is ethylacetoacetic ester prepared? How will you obtain the following compounds from ethylacetoacetic ester? Ethyl methyl ketone; (ii) succinic acid; (iii) Assign the R or S configuration to each of the following:



Or

- (b) How will you prepare (i) 2 propanol; (ii) Propionic acid; (iii) 2-butyne, (iv) tert-butyl alcohol and (v) new Grignard reagent from Grignard reagent.

13. (a) Convert:

- an aldohexose into an aldopentose by Ruff's method.
- an aldopentose into ketohexose by Wolfram's method and
- D-fructose into D-glucose.

Or

- (b) How do you synthesize (i) tryptophan by Azlactone synthesis method; (ii) Glycine by Strecker synthesis method; (iii) alanine by Kopp synthesis method?

14. (a) Explain reduction of nitrobenzene under different conditions.

Or

(b) Write the following name reactions with examples (i) Reimer Tiemann Reaction (ii) Kolb's reaction ; (iii) Ledrer – Manasse reactions.

15. (a) How do you synthesize (i) L (+) – ascorbic acid ; (ii) Citral.

Or

(b) How do you synthesize (i) DDT ; (ii) saccharin ; (iii) vanillin.

(4 × 10 = 40 marks)