

GANPAT UNIVERSITY

M.Sc. Third Semester Examination (C.B.C.S) Nov-Dec, 2014

Subject: Chemistry (Organic Synthesis and Reaction Mechanism)

Paper: CHA 301 OSR

Time: 3 hours

Total Marks: 70

Instructions:

1. Attempt any three questions from each section, of which question No. 4 and 8 are compulsory
2. Answer each section in separate answer book.

SECTION: I

- Q-1 (A) Discuss the mechanism and synthetic applications of Arndt-Eistert reaction. 7
- (B) Describe mechanism and synthetic applications of Fries rearrangement. 7
- Q-2 (A) Give an account on synthons and synthetic equivalents. 7
- (B) Discuss mechanism and synthetic applications of Reformatsky reaction. 7
- Q-3 (A) Discuss the one group C-X disconnections with suitable example. 7
- (B) Explain mechanism and any three synthetic applications of following: 7
- i. Pinacol – Pinacolone rearrangement.
 - ii. Schmidt rearrangement.
- Q-4 Attempt All. 7
- a) Which Substance is used as Wittig reagent?
 - b) Define Mannich reaction.
 - c) Write principle of Hoffmann reaction.
 - d) What is Favorski rearrangement?
 - e) Define the term functional group inter conversion.
 - f) What is Umpolung?
 - g) What is Chemo Selective reaction?

SECTION: II

- Q-5 (A) Discuss two groups C-C disconnection with reference to Diels – Alder reaction. 7
(B) Discuss F.M.O. method for cycloaddition reaction of (2+2) and (4+2) system. 7
- Q-6 (A) Discuss the mechanism and stereo chemical aspects of reduction by Lithium Aluminium hydride. 7
(B) Explain co-relation diagram of cyclobutene - cyclobutadiene. 7
- Q-7 (A) What is regioselectivity? Discuss regioselective alkylation of ketones and regioselectivity in Michael reaction. 7
(B) Explain in Brief. 7
- i. Arylation of aromatic compounds by diazonium salt.
 - ii. Mechanism of allylic halogenation with NBS.
- Q-8 Attempt All. 7
- a) Give name and structure of two compounds having active methylene group.
 - b) Give full name and structural formula of D.C.C.
 - c) Write the definition of concerted reaction.
 - d) What is Con rotation?
 - e) Which symmetry operations are useful in pericyclic reaction?
 - f) What is Robinson annulation?
 - g) Give equation for preparation of aluminium t-butoxide.

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GANPAT UNIVERSITY
M.Sc. Third Semester Examination (C.B.C.S)
Subject: Chemistry (Organic)
Paper: CHA302 OCC: Organic and Computational Chemistry

Time: 3 hours

Total Marks: 70

Instructions:

1. Attempt any three questions from each section, of which question No. 4 and 8 are compulsory
2. Answer each section in separate answer book.

SECTION: I

Q-1	Write note on Cheminformatics.	14
Q-2	Write note on lead optimization.	14
Q-3	Discuss photochemical reaction in detail.	14
Q-4	Answer the following questions.	07
	a. Define direct drug design.	
	b. Explain computer assisted synthesis design.	
	c. Name any one structure database.	
	d. Give full form of SMILE.	
	e. Give full form of HTS.	
	f. Give any one lipophilic descriptor.	
	g. Draw structure of cyclohexadienone.	

SECTION: II

Q-5	Discuss principles and application of Green chemistry.	14
Q-6	Discuss fundamental, advantages, limitation and application of Microwave chemistry.	14
Q-7	a. Discuss preparation and reaction of Quinoline.	14
	b. Discuss preparation and reaction of Banzimidazole and indol.	

Q-8

Answer the following questions.

07

- a. Give full form of NMR.
- b. Draw structure of Pteridine.
- c. Give example of any one cycloaddition reaction.
- d. Give structure of purine.
- e. Define nanochemistry.
- f. Give any one α,β - unsaturated compounds.
- g. Give full form of IR

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GANPAT UNIVERSITY
M.Sc. Third semester Examination (C.B.C.S) Nov-Dec, 2014
Subject: Chemistry (Organic)
Paper: CHA 303 Medicinal Chemistry

Time: 3 hours

Total Marks: 70

Instructions:

- (1) Attempt any three questions from each section, which question No. 4 and 8 are Compulsory
- (2) Answer each section in separate answer book.

Section: I

- Que.-1**
- a. Distinguish between competitive and non competitive Antagonists. 07 mark
 - b. Write a note on Receptor theories. 07 mark
- Que.-2**
- a. Explain Absorption in pharmacokinetic phase of drug action. 07 mark
 - b. Discuss Metabolism in drug discovery. 07 mark
- Que.-3**
- a. Give a classification of Chemotherapy. 07 mark
 - b. Give a synthesis of Melphalan and Amantadine. 07 mark
- Que.-4** Answer following question 07 mark
- a. Who was called Father of chemotherapy?
 - b. Which different between H₁ and H₂ receptor?
 - c. What is Prodrugs?
 - d. Draw structure of Benzocaine.
 - e. Give a list of desirable requirements for a lead.
 - f. Give a uses and side effects of Cyclophosphamide.
 - g. Give role of Virus in Cancer.
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Section: II

- Que.- 5**
- a. Short note: Ant diabetic drugs. 07 mark
 - b. Give a synthesis and mode of action of Amlodipine. 07 mark
- Que.- 6**
- a. Explain mechanism and side effects of Anti depressants. 07 mark
 - b. Give synthesis and uses of Diazepam and Chlopromazine. 07 mark
- Que.- 7**
- a. Give a classification of Analgesics drugs. 07 mark
 - b. Give synthesis and uses of Methadone and Ibuprofen. 07 mark
- Que.- 8** Answer the following questions. 07 mark
- a. Give two drugs name of α -receptor blocking agents.
 - b. Draw structure of Captopril.
 - c. Write a name of Butyrophenone drugs.
 - d. Draw structure of Imipramine.
 - e. Give uses of Li (Lithium) and its salts in drugs.
 - f. Give uses of Naproxen and Nimesulide.
 - g. Draw structure of Paracetamole.

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GANPAT UNIVERSITY
M.Sc. Third Semester Examination (C.B.C.S) Nov-Dec, 2014
Subject: Research Methodology (Organic /Analytical)
Paper: CHA 304 RMD

Time: 3 hours

Total Marks: 70

Instructions:

1. Attempt any three questions from each section, of which question No. 4 and 8 are compulsory
2. Answer each section in separate answer book.

SECTION: I

- Q-1 a) Write a detailed note on various types of research. 07
b) Discuss the importance of literature survey in research with respect to patent. 07
- Q-2 a) How will you write the research report? 07
b) Write a note on analysis of data. 07
- Q-3 a) Discuss various types of paragraphs used in documentation. 07
b) Write a note on use of tables and figures in documentation. 07
- Q-4 a) Give objectives of research. 07
b) What is the full form of MEDLINE and NLM?
c) What type of motivations we get from research?
d) Enlist the tools of qualitative research.
e) Enlist the most useful list of books for literature review.
f) "There is" or "It is" is example of _____
g) "We don't have nothing." is example of _____

SECTION: II

- Q-5 Enlist various types of research grant from DST. Explain any two research grant from DST in detail. 14
- Q-6 a) Give name of any five research journals related to chemistry. Write a note on Abstract and Conclusion section of research report. 07
b) Describe barriers of communication skills. 07
- Q-7 a) Discuss various activities performed in industry institute interaction. 07
b) Write on key determinants of initial project cost. 07
- Q-8 a) The most important component of non-verbal communication is _____
b) How interaction between industry and academia be achieved?
c) The first indicator in project cost analysis is _____
d) What are the full form of AICTE and ICMR?
e) Enlist different types of charts available in MS Excel.
f) Give examples of recurring and non-recurring expenses.
g) Enlist any four international grant/scholarship for research.

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