647510 **MSC4OrgC403x** **Seat No :_____**

M.Sc.(Chem.) Semester - 4 (*CBCS*) Examination
April/May-2022 (NEW COURSE)
Heterocyclic Chemistry (Core)

Time: 2:30 Hours **Marks: 70**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q.1 (a)	Generate the correct Structure from followings IUPAC names. a) thieno[3,4-*d*]isoxazole b) pyrido[2,3-*b*]pyrazine c) 4*H*-imidazo[5,4-*d*]thiazole d) pyrrolo[1,2-*a*]quinoxaline e) imidazo[2,1-*b*]thiazole f) 3-oxa-1-thia-8-azaspiro[4.5]deca-6,9-diene g) imidazo[2,1-*b*]-1,3,4-oxadiazole h) 7-thia-1-azaspiro[4.5]dec-3-en-9-yne	**4 Marks**
Q.1 (b)	**Answer any two question out of three.**	**10 Marks**
(1)	Discuss the properties and Three synthesis of Oxirane.	5
(2)	Give Two synthesis of followings: (1) Azetidine. (2) 1,2-Diazetidine.	5
(3)	Explain rules for the systematic IUPAC nomenclature of Spiro heterocycles with examples.	5
Q.2 (a)	Why Pyridine is more basic than Pyrrole?	**4 Marks**
Q.2 (b)	**Answer any two question out of three.**	**10 Marks**
(1)	Describe physical properties and any Two preparation of Furan.	5
(2)	Discuss any Two synthesis of followings: (1) Isoindole. (2) Benzofuran.	5
(3)	Discuss Electrophilic reaction and any Two synthesis of Indole.	5
Q.3 (a)	Discuss any Four synthesis of Pyrimidine.	**4 Marks**
Q.3 (b)	**Answer any two question out of three.**	**10 Marks**
(1)	Provide Electrophilic reactions and any Two synthesis of Pyridine.	5
(2)	Explain any Two synthesis of followings: (1) Pyrazine. (2) Quinoxaline.	5
(3)	Discuss any Three synthesis of Pyridazine.	5
Q.4 (a)	Explain any Two synthesis of Benzopyran-4-one.	**4 Marks**
Q.4 (b)	**Answer any two question out of three.**	**10 Marks**
(1)	Describe Electrophilic reaction and Two preparation of Acridine.	5
(2)	Elaborate any Two synthesis of followings: (1) Quinoline. (2) Benzopyran-2-one.	5
(3)	Discuss Nucleophilic reaction and Two synthesis of Isoquinoline.	5
Q.5 (a)	Discuss any Two synthesis of Triazenes.	**4 Marks**
Q.5 (b)	**Answer any two question out of three.**	**10 Marks**
(1)	Describe Electrophilic reaction and Two preparation of Pyrazole.	5
(2)	Give Two synthesis of followings: (1) Imidazole. (2) Oxadiazole.	5
(3)	Provide two synthesis of followings: (1) Isothiazole. (2) Thiadiazole.	5

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