

**BACHELOR OF PHARMACY HONOURS**  
**FMU6505 - MEDICINAL CHEMISTRY- LEVEL 6**  
**FINAL EXAMINATION**  
**DURATION: THREE (03) HOURS**

**DATE: 05<sup>TH</sup> AUGUST 2021**

**TIME: 1.30 P.M. – 4.30 P.M.**

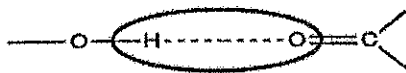
**Part B (20 Marks)**

01.

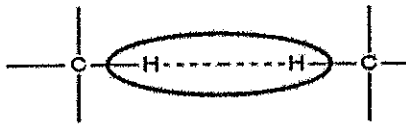
1.1 Explain what is meant by “Structure Activity Relationship” (SAR). (04 marks)

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1.2 Identify the two drug-receptor bonds given below. (04 marks)



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1.3 List two (02) other bond types that can form between a drug and a receptor. (02 marks)

I.....

II.....

02. Benzimidazoles is a class of Anthelmintics.

2.1 Name three (03) other classes that come under chemical classification of Anthelmintics (03 marks)

I.....

II.....

III.....



Index No .....

2.2 Name two (02) drugs come under benzimidazoles (04 marks)

I.....

II.....

2.3 Draw the basic structure of benzimidazole (03 marks)

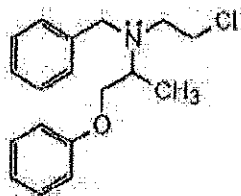
**Part C (60 Marks)**

01. Two main groups of  $\alpha$  adrenergic receptor blocking agents are selective and non-selective  $\alpha$  blockers.

1.1 What receptors are blocked by non-selective  $\alpha$  blockers? (02 marks)

1.2 Phenoxybenzamine is an example for non-selective  $\alpha$  blockers. Name two (02) other examples for this group. (04 marks)

1.3 Phenoxybenzamine has a prolonged and irreversible  $\alpha$  receptor blockade nature. Explain this statement using its structure. (09 marks)

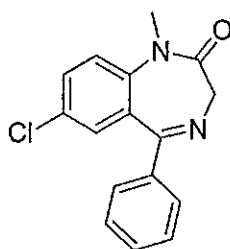


Phenoxybenzamine

02.

2.1 Name three (03) main groups of anxiolytics, sedatives and hypnotics. (03 marks)

2.2 Structure of diazepam is given below. In its metabolism, it gets converted to nordazepam and oxazepam. Draw the structures of these two metabolites. (04 marks)



Diazepam

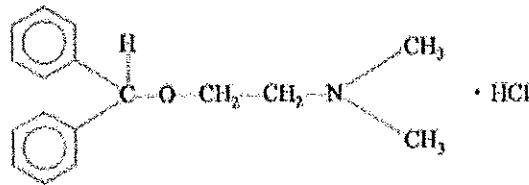
2.3 Explain the structure activity relationship of diazepam. (08 marks)

03.

3.1 Write four (04) classes of Histamine H<sub>1</sub>-Receptor antagonists, categorized based on their chemical structure. (04 marks)

3.2 What are the cardinal factors which prevent second-generation non-sedating antihistamines from penetrating the blood-brain barrier? (03 marks)

3.3 Diphenhydramine hydrochloride is an antihistaminic. This can be synthesized starting from diphenylmethane. Give the synthetic pathway using a reaction scheme. (08 marks)



04.

4.1 Name the three (03) classes of antiviral agents, categorized based on their mode of action. (03 marks)

4.2 Name three (03) agents that can interfere with viral nucleic acid replication. (03 marks)

4.3 Amantadine is an antiviral drug and it can be synthesized from adamantane. Give the synthetic pathway using a reaction scheme. (09 marks)

