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**UNIVERSITY OF RUHUNA - FACULTY OF MEDICINE**  
**ALLIED HEALTH SCIENCES DEGREE PROGRAMME**  
**FOURTH BPHARM PART I EXAMINATION - DECEMBER 2016**  
**PH 4112 ADVANCED MEDICINAL CHEMISTRY I (SEQ)**

**TIME: TWO HOURS**

**INSTRUCTIONS**

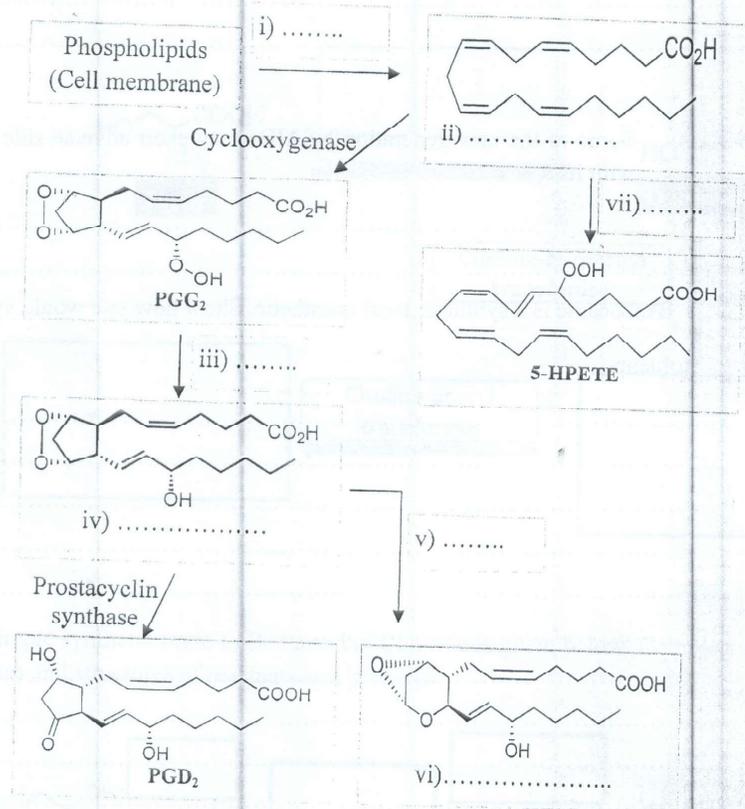
- Answer **all** questions.
- Do not use correction fluid.
- Answer questions in the given answer book.
- Marks will be deducted for illegible hand writing.

01. Answer **all** parts.

1.1

1.1.1 Complete the following biosynthesis pathway of eicosanoids.

(35 marks)



1.1.2 How do the conventional NSAIDs act as anti-inflammatory drugs?

(10 marks)

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2. Answer **all** parts.

2.1 Describe the step wise process of neurotransmission at cholinergic neurons. (15 marks)

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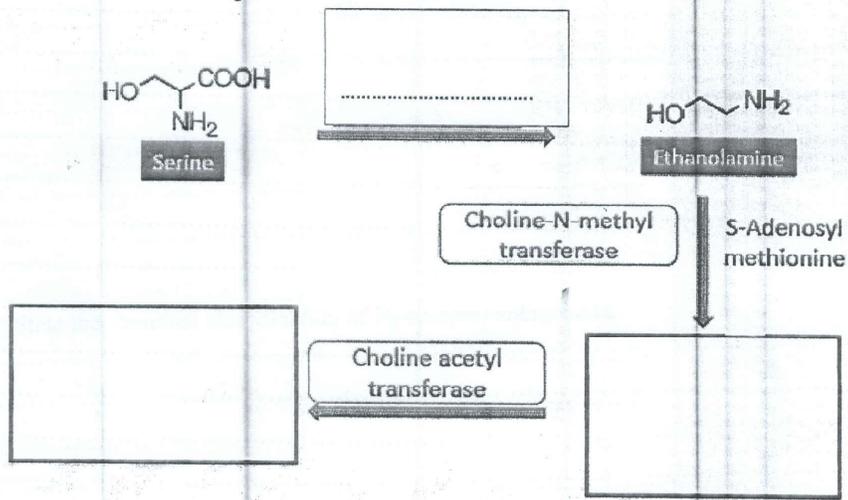
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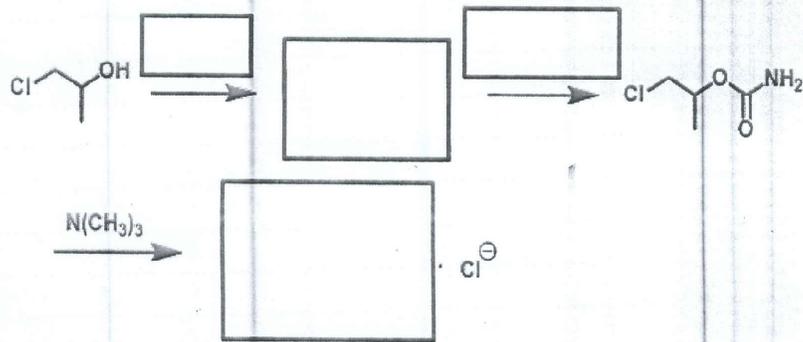
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2.2 Biosynthesis of acetylcholine is given below. Complete the schematic diagram with relevant names of the reactants, names and structures of products. (15 marks)



2.3 A simple synthetic route to Bethanechol Chloride is given below. Complete the diagram with names and structures of reactants and products. (20 marks)











4.2

4.2.1 Giving an example for each, define the following terms.

(10 marks)

a) *In vitro* bioassays.

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b) *In vivo* bioassays.

(10 marks)

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4.2.2 Draw the chemical structures of the following vitamins.

(30 marks)

a) Vitamin B<sub>1</sub>

b) Vitamin B<sub>6</sub>

c) Vitamin B<sub>9</sub>