



**KENYATTA UNIVERSITY**

**UNIVERSITY EXAMINATIONS 2011/2012**

**SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF  
SCIENCE**

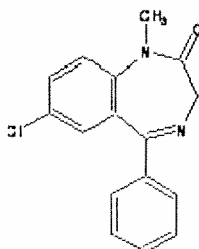
**SCH 414: MEDICINAL CHEMISTRY II**

**DATE: THURSDAY 5<sup>TH</sup> APRIL 2012**

**TIME: 11.00 A.M. – 1.00 P.M.**

**INSTRUCTIONS:** Answer **ALL** questions.

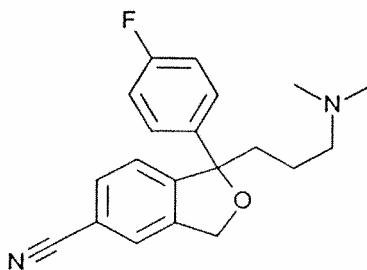
1. (a) One of the trade names for the compound (1) is Diazepam.



**1**

- |       |                                      |           |
|-------|--------------------------------------|-----------|
| (i)   | Give its other two trade names.      | [2 marks] |
| (ii)  | To what class of drugs it belongs.   | [2 marks] |
| (iii) | Give its chemical name.              | [2 marks] |
| (iv)  | Describe its specific action (uses). | [2 marks] |

(b) The chemical name for compound (2) is (RS)-1-[3-(dimethylamino) propyl]-1-(4-fluorophenyl)-1,3-dihydroisobenzofuran-5-carbonitrile.



**2**

- |       |                                      |           |
|-------|--------------------------------------|-----------|
| (i)   | Give its trade names.                | [2 marks] |
| (ii)  | To what class of drugs it belongs.   | [2 marks] |
| (iii) | Describe its specific action (uses). | [2 marks] |

2. The following are the trade names for two drugs used clinically to treat obesity.

- (i) Phentermine
- (ii) Methylphenidate

- (a) Name the class of drugs to which these belongs. [2 marks]
- (b) Describe their action and related side effects. [4 marks]
- (c) Give at least one trade name for each of these. [4 marks]
- (d) Describe syntheses of these drugs. [10 marks]

3. A class of barbiturates finds their usage in the treatment of insomnia and preoperative medication. Name **two** potent drugs and discuss the synthesis **one** of the drugs. [7 Marks]

4. (a) How expectorants and antitussives are classified? Give names, structures and synthesis of **two** such drugs belonging to centrally acting antitussive agents. [12 Marks]

(b) Describe how WHO has defined the normal adult blood pressure. Give **two** examples of antihypertensive drugs providing their structures, chemical names, uses and synthesis. [14 Marks]

5. Describe how general anaesthetics are classified. Give an example from each class with name, chemical name, uses and synthesis. [20 marks]

6. (a) Describe how histamine is biosynthesized in the body under the influence of antigens. [4 Marks]

(b) What main physiological effects are produced in the body on the release of histamine? [4 Marks]

(c) Give structure, physical properties, uses and synthesis of the following antihistamines: [10 Marks]

- (i) Chlorpheniramine maleate
- (ii) Mepramine maleate