Index No:. .....

UNIVERSITY OF RUHUNA – FACULTY OF MEDICINE

ALLIED HEALTH SCIENCES DEGREE PROGRAMME

FOURTH B. PHARM PART II EXAMINATION –JULY 2016

PH 4213: ADVANCED MEDICINAL CHEMISTRY II (SEQ)

TIME: TWO HOURS

INSTRUCTIONS

- Answer all questions.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

1.

1.1 Briefly describe the chemical structural characteristics of the following,

1.1.1. Piperazines (*15 marks*)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

1.1.2. Adamantone amines (*15 marks*)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

4

1.2 Show by means of chemical equation/s how you would synthesize the following medicines. Give essential experimental conditions in each case.

1.2.1. Niclosemide (*25 marks*)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

1.2.2. Pamaquine (*25 mark*

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

1.3 Give chemical classification of antifungal agents. (*20 marks*)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

2.

2.1. Sulfonylureas are a class of oral hypoglycemic agents. Draw the general structure of sulfonylureas. ***(15 marks)***

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

2.2. Give three examples for first generation sulfonylureas and draw the structure of one of them. ***(20 marks)***

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

2.3. Give the generic names of drugs given below which act on the respiratory system. ***(15 marks)***

.....

.....

.....

.....

.....

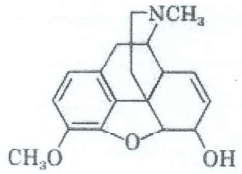
.....

.....

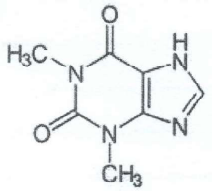
.....

Index No:.....

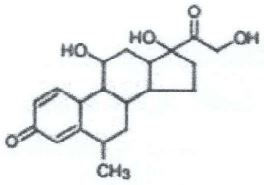
i.



ii.



iii.



2.4. Draw the chemical structures of the thyroid hormones T3 and T4 .

(*20 marks*)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Index No:.....

2.5. Describe the pathway of synthesis of T4 hormone. (*30 marks*)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

3.

3.1. Draw the general structure of thiazide diuretics . (*15 marks*)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

2

45

Index No:.....

3.2. Write down three (03) important points on the structure activity relationship of thiazide diuretics. ***(15 marks)***

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

3.3. Give two (02) diuretics having different chemical structures compared to thiazides. Draw the chemical structure of **one** diuretic you have given. ***(20 marks)***

.....

.....

.....

.....

.....

.....

.....

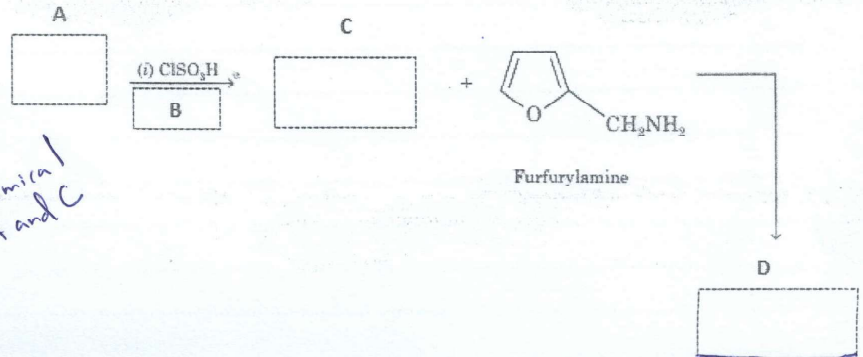
.....

.....

.....

.....

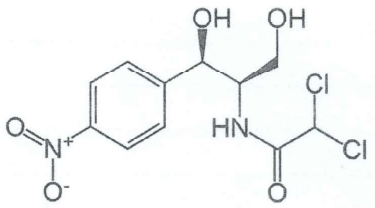
3.4. Complete the synthesis pathway of furosemide given below by filling A, B, C and D. ***(40 marks)***



3.5) Give the chemical names of A and C

4.

4.1. Give generic name of the following protein synthesis inhibitor. (*05 marks*)



.....

.....

.....

4.2. Briefly explain the structure activity relationship (SAR) of penicillin. (*20 marks*)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

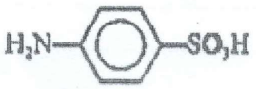
.....

.....

.....

.....

4.3. Briefly discuss the chemical synthesis pathway of sulphonamide which starts from sulphanilic acid. (The chemical structure of sulphanilic acid is given below). (*30 marks*)



Sulphanilic acid

.....

.....

.....

Index No:.....

4.5) Briefly explain the structure activity relationship of Isoniazid (25 marks)

4.4. Briefly explain the structure activity relationship of cephalexin. (*20 marks*)