Faculty of Medicine, University of Ruhuna

Third Examination for Medical Degrees (Part II) - September 2019
Pharmacology Paper I
Thursday 12th September 2019

Answer all 05 questions   (9.00 a.m. - 11.30 a.m.) 2 ½ hours
Answer each question in a separate book

1.

    1.1. Describe the pharmacological basis of using

        1.1.1. propranolol in angina pectoris   **(25 marks)**

        1.1.2. propofol in general anesthesia   **(25 marks)**

    1.2. Describe the mode of action of lignocaine   **(25 marks)**

    1.3. Compare minipill with a combined contraceptive pill   **(25 marks)**

2.

    2.1.

        2.1.1. List three (03) groups of antidepressants with an example to each   **(15 marks)**

        2.1.2. Describe the mechanism of action of one drug you mentioned in 2.1.1

                (30 marks)

    2.2.

        2.2.1. List three (03) antiepileptic drugs used in the treatment of status epillepticus

                (15 marks)

        2.2.2. Explain the pharmacological basis of using a drug you mentioned in 2.2.1

                (30 marks)

        2.2.3. List two (02) clinically important adverse effects of the drug you described in
            2.2.2   **(10 marks)**

3.

3.1. List three (03) groups of first line anti-hypertensive drugs with an example to each group **(15 marks)**

3.2. Write an anti-hypertensive drug for a patient with heart failure from the drugs stated in 3.1 **(05 marks)**

3.3. Describe the pharmacological basis of using the anti-hypertensive drug you stated in 3.2 in a patient with heart failure **(40 marks)**

3.4. List two (02) adverse effects of the drug you stated in 3.2 **(10 marks)**

3.5. State the benefits of nocturnal anti-hypertensive therapy **(20 marks)**

3.6. Name two (02) anti-hypertensive drugs which are used in the initial treatment of malignant hypertension **(10 marks)**

4.

4.1.

4.1.1. Define the term bioavailability **(10 marks)**

4.1.2. List five (05) factors affecting bioavailability of a drug **(10 marks)**

4.1.3. Explain the therapeutic index and outline its clinical significance with examples **(30 marks)**

4.2. A 55 year-old female presented with joint pain and stiffness for one month duration. Clinical diagnosis was made as rheumatoid arthritis and treatment was commenced to relieve the symptoms until the results of investigations are available to confirm the diagnosis.

4.2.1. List two (02) drugs and their routes of administration to control the symptoms of the above patient **(10 marks)**

4.2.2. With the results of investigations, the clinical diagnosis was confirmed and a disease modifying anti-rheumatoid drug (DMARD) was initiated

4.2.2.1. Write a first-line DMARD **(10 marks)**

4.2.2.2. Describe the aims of the commencement of DMARD stated in 4.2.2.1 **(20 marks)**

4.2.2.3. List two (02) investigations which should be done regularly for early detection of adverse effects of DMARD **(10 marks)**

2

5. Briefly describe the pharmacological basis for selection or omission of each medication for the following patients with diabetes mellitus.

5.1. Metformin for a 50 year-old newly diagnosed male with body mass index of 23 Kg/m^2 and glycosylated haemoglobin of 9% **(25 marks)**

5.2. Soluble insulin infusion for a 16 year-old patient admitted with random blood glucose of 530 mg/dL and ketonuria **(25 marks)**

5.3. Enalapril for a 40 year-old male with type 2 diabetes for 5 years, found to have blood pressure of 160/90 mmHg **(25 marks)**

5.4. Omitting pioglitazone from oral hypoglycemic regimen in a 65 year-old woman who was diagnosed to have heart failure when admitted with fractured femoral neck **(25 marks)**