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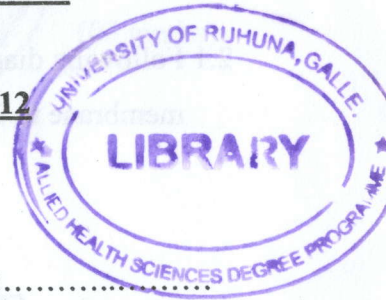


**UNIVERSITY OF RUHUNA – FACULTY OF MEDICINE**

**ALLIED HEALTH SCIENCE DEGREE PROGRAMME**

**FIRST B. PHARM. PART II EXAMINATION- MARCH 2012**

**PH 1232 BIOCHEMISTRY II**



INDEX NO:.....

DATE : March 16<sup>th</sup> 2012

TIME : 9.00a.m.- 11.00 a.m

**INSTRUCTIONS**

- Answer all questions
- No paper should be removed from the examination hall
- Marks will be deducted for illegible hand writing
- Do not use any correction fluids
- Answer each question in a separate book

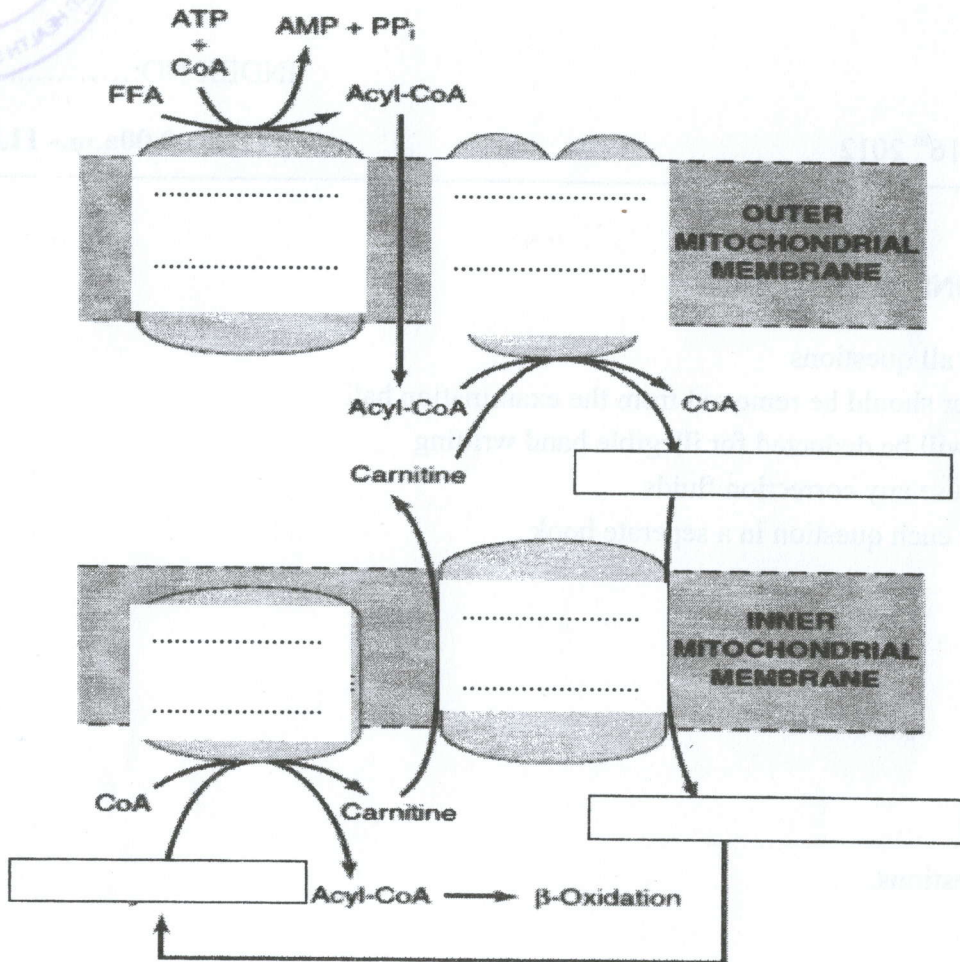
Answer all questions.

**1. Briefly describe**

- 1.1. structural organization of proteins. (25 marks)
- 1.2. urea cycle. (25 marks)
- 1.3. the basic principle of protein biosynthesis in the development of antibiotics. (25 marks)
- 1.4. the biochemical basis of phenylketonuria. (25 marks)

2.

2.1 Following diagram illustrate the penetration of free fatty acid from mitochondrial membrane to inner mitochondrial matrix. Complete the diagram.



(25 marks)

2.2.

2.2.1. Define ketone bodies.

(10 marks)

2.2.2. Illustrate the interrelationships of ketone bodies.

(15 marks)

2.3.

2.3.1. Indicate main steps in the cholesterol biosynthesis.

(10 marks)

2.3.2. List the functions of lipoprotein lipase.

(10 marks)

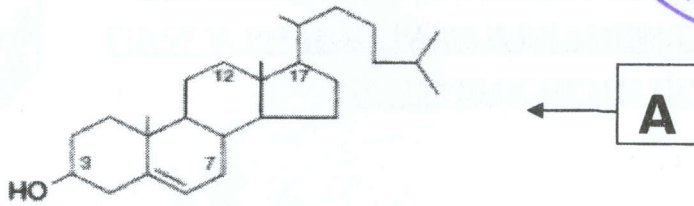
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2.4.

2.4.1. Name the structure given below.

(05 marks)



2.4.2. Name the precursor of this molecule.

(05 marks)

2.4.3. List three bio-compounds which use the above molecule (A) as the precursor.

(10 marks)

2.4.4. Briefly indicate the synthesis of gall stones.

(10 marks)

3.

3.1. Describe the structure of hemoglobin molecule.

(20 marks)

3.2. Explain briefly the process of oxygenation of hemoglobin.

(20 marks)

3.3. List two genetic disorders of hemoglobin.

(10 marks)

3.4.

3.4.1. Explain the mechanism of the development of porphyria.

(10 marks)

3.4.2. Write the causes for the erythropoietic porphyria indicating the organs affected.

(20 marks)

3.4.3. Indicate four main differences between hereditary and acquired porphyria.

(20 marks)

4.

4.1. Illustrate the structure of purine and pyrimidine nucleotides.

(20 marks)

4.2. Describe the functional importance of nucleotides for a living organism.

(10 marks)

4.3. Describe the synthesis of purine nucleotides from Inosine Monophosphates (IMP).

(40 marks)

4.4. Describe how IMP is synthesized and regulated by 'one step purine salvage pathway'.

(15 marks)

4.5. Briefly explain the different regulatory factors of purine synthesis.

(15 marks)