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DEPARTMENT OF PHYSICAL AND CHEMICAL SCIENCES

**BCH 210- Metabolism of Lipids    Second Semester 2018/2019    Time: 2 Hrs**

**Instructions: Answer three (3) Questions out of five Questions. Each Question carries 20 marks**

1. (a) Draw the structures of these fatty acids (i)  $C_{18} \Delta^{9,12}$  (ii) homo- $\gamma$ -Linolenic acid and (iii) Arachidonic acid.  
(b) List the four key enzymes of fatty acid metabolism. Write short notes on each of the enzymes  
(c) With suitable illustrations only, show the reaction sequence of the beta-oxidation pathway of fatty acids. (20 Marks)
  
2. (a) (i) What are ketone bodies?  
(ii) Give three (3) examples  
(b) (i) Illustrate the reaction pathway of ketogenesis  
(ii) Under what conditions does ketogenesis takes place? (20 Marks)
  
3. Draw the structures of the following phospholipids:  
(a) Phosphatidyl Ethanolamine  
(b) Phosphatidyl Serine  
(c) Phosphatidyl Choline  
(d) Phosphatidyl Inositol (20 Marks)
  
4. Write short notes on:  
(i) Terpenes (ii) Vitamin E (iii) Bile Acids (iv) Estrogens (20 Marks)
  
5. Using good illustrations, briefly discuss the transport of fatty acids into the mitochondria by carnitine. (20 Marks)