

2018/19 HARMATTAN SEMESTER EXAMINATIONS

BCH 303: Metabolism of Lipids (2 units)

Time allowed: 1hr 30 minutes

INSTRUCTIONS: Attempt all questions in your answer booklet and clearly separate section A from B.

SECTION A

1. The two enzymes secreted into the intestinal lumen and that are responsible for the degradation of dietary lipids are and
2. The spherical lipoprotein molecules responsible for the transport of dietary lipids from the intestines to other locations in the body are referred to as
3. is formed as a result of stable aggregate of lipids in a mixture.
4. Intermediate density lipoproteins are formed during the breakdown of
5. The main role of the carnitine shuttle system in the activation of Fatty acids is to
6. The state of the oxidative phosphorylation system is reflected by the ratios of and
7. The activation process preceding beta oxidation is catalyzed by the enzyme
8. When acetyl-coA reacts with oxaloacetate, the product of this reaction is
9. The enzyme involved in the first step of biosynthesis of fatty acids is stimulated by
10. Crotonoyl ACP is a product of reaction catalyzed by enzyme
11. During the activation of fatty acid to fatty acyl-ScoA, how many molecules of ATP is used?
12. Palmitoleate is an example of Fatty acids.
13. Cyclization of Squalene epoxide by the enzyme Cyclase produces
14. The common name for a fatty acid with 18 carbon atoms and 2 double bonds is
15. Trans-acylation reactions in the reactions of fatty acid synthesis serve to
16. Oxidation of acyl coA at the 2,3 positions in beta oxidation is catalysed by the enzyme

17. Dehydrogenation of 3-hydroxy acyl CoA by 3 hydroxyacyl coA dehydrogenase yields Intermediate.
18. Total ATP produced by complete oxidation of Palmitic acid is molecules.
19. Poor wound healing and low growth rate are symptoms of
20. Decarboxylation and Dephosphorylation of 3-phospho-5-pyrophospho mevalonate in cholesterol biosynthesis yields.....
21. A typical biological membrane contains a complex mixture of, and (in some eukaryotes)
22. A lipoprotein has a hydrophobic core containing and
23. Three examples of lipids that do not contain glycerol are, and
24. The largest lipoproteins are the
25. The hydrophilic surface of lipoproteins contains and

SECTION B

1. Using **structures only**, describe the steps involved in the synthesis of 3-phospho-5-pyrophosphomevalonate from mevalonate in the biosynthesis of cholesterol.

b. How does dietary cholesterol and fasting affect the synthesis of cholesterol in the liver?

OR

2. Schematically describe the reactions of Beta Oxidation of fatty acids.

b. How is beta oxidation primarily regulated?