

Uva Wellassa University

Faculty of Animal Science & Export Agriculture

BSc in Export Agriculture

BSc in Tea Technology & Value Addition

End Semester Examination September/October 2012

Year III Semester II



Uva Wellassa University

Phytochemistry and Extraction Technology (EAG 346-2) & Repeat

Instructions

Answer all questions.

No. of questions : Four (04)
No. of pages : Four (04)
Time : One hour & forty minutes (01 hr & 40 min)
Total marks allocated : 80 %

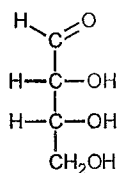
Part II – Essay

Question 01

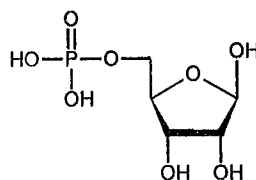
I. Explain the terms “primary metabolites” and “secondary metabolites”.

(20 Marks)

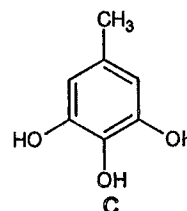
II. Classify each of the following compounds A, B, C, D and E as either a primary metabolite or a secondary metabolite.



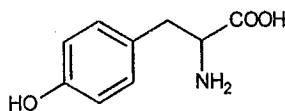
A



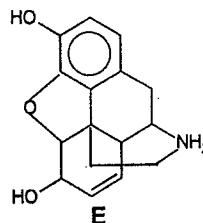
B



C



D



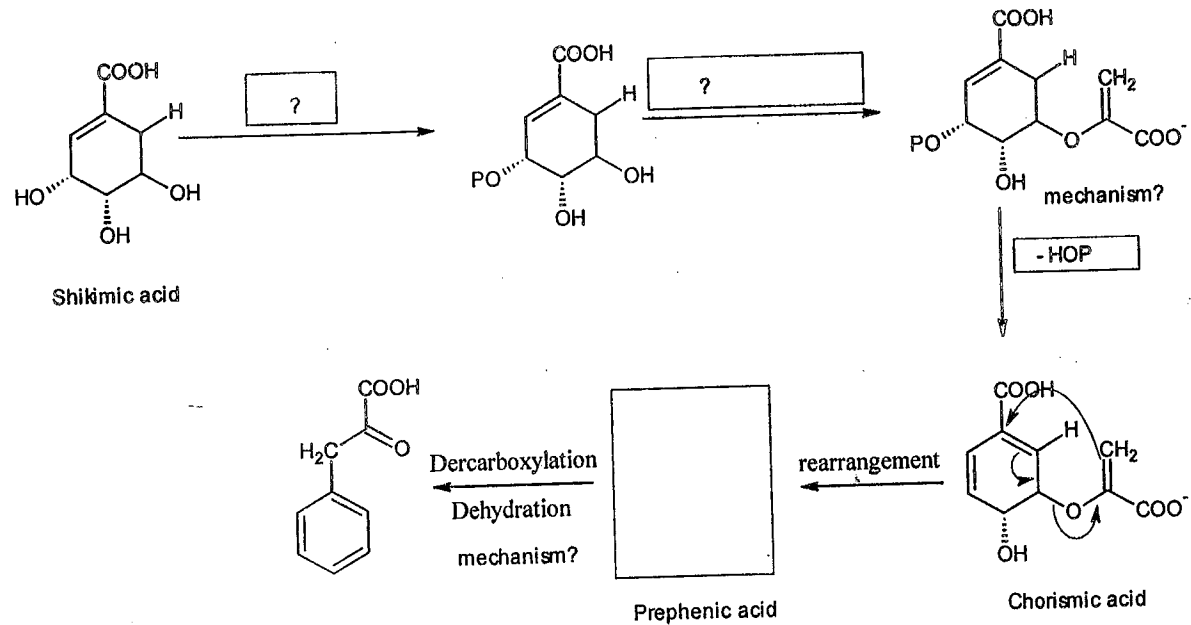
E

(25 Marks)

III. Name three starting compounds involved in synthesizing secondary metabolites.

(15 Marks)

IV. Identify the missing reagents /compounds for the following biosynthetic reaction. Show the mechanism using arrows at appropriate places. Draw the reaction scheme on your answer script.



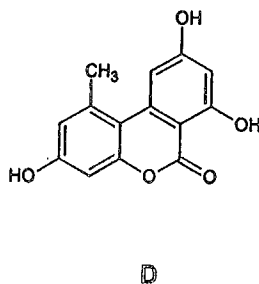
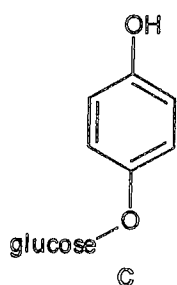
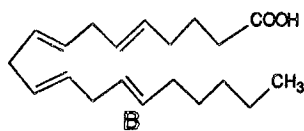
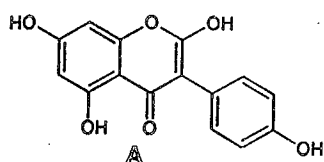
(40 Marks)

Question 02

I. What do you understand by the term "mixed biogenesis"?

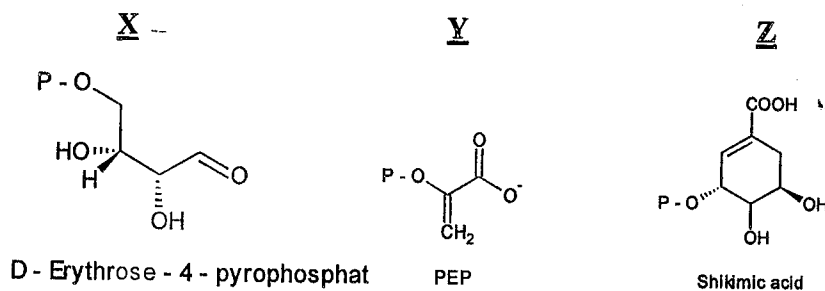
(20 Marks)

II. Name the biosynthetic pathway/s of following molecules (do not describe pathways).



(20 Marks)

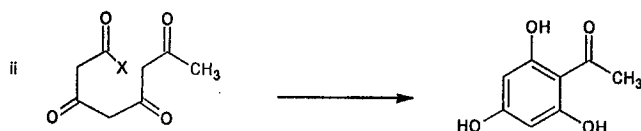
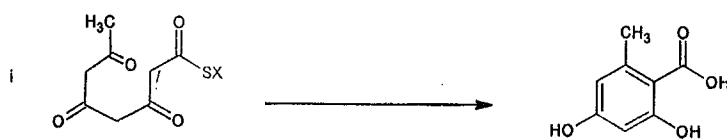
III. Outline the steps (showing mechanisms) involved in the biosynthesis of Shikimic acid (Z) from the compounds X and Y.



(60 Marks)

Question 03

I. State whether following condensation reactions are Adol type or Cleison type. Write mechanisms for each reaction.



II. Give one similarity and one difference between polyketide synthesis and fatty acid synthesis.

(10 Marks)

III. Write brief notes on followings.

a. Anabolism and catabolism

b. Lignins and lignans

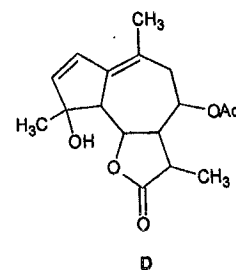
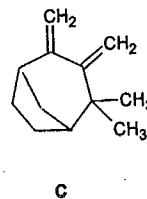
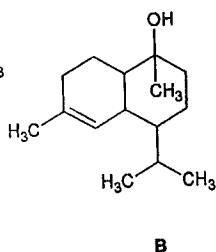
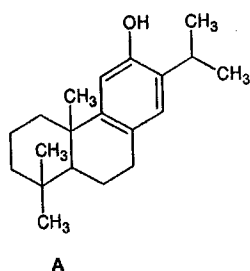
(40 Marks)

Question 04

I. Using a flow diagram outline the major steps involved in the biosynthesis of monoterpenoids from its starting material. (mechanisms are not required)

(40 Marks)

II. Classify each of the following compounds A, B, C, and D as monoterpene, sesquiterpene, diterpene and triterpene *etc.*



(20 Marks)

III.

a. Outline a method to extract total alkaloids from a given sample of plant material.

b. How would you identify the presence of alkaloid in your extraction?

(40 Marks)