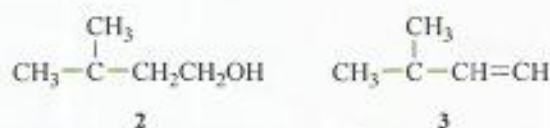
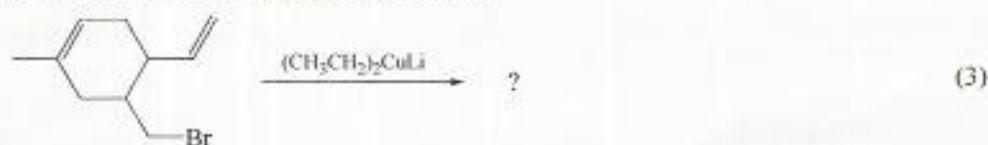


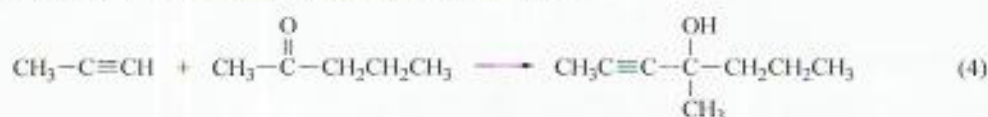
(c) (3 marks) In making Compound 2 from Compound 3, why could  $\text{H}^+/\text{H}_2\text{O}$  not be used? What reagent must be used instead?



(d) (3 marks) What is the product of Reaction 3?



(e) (3 marks) What reagent is needed for Reaction 4?

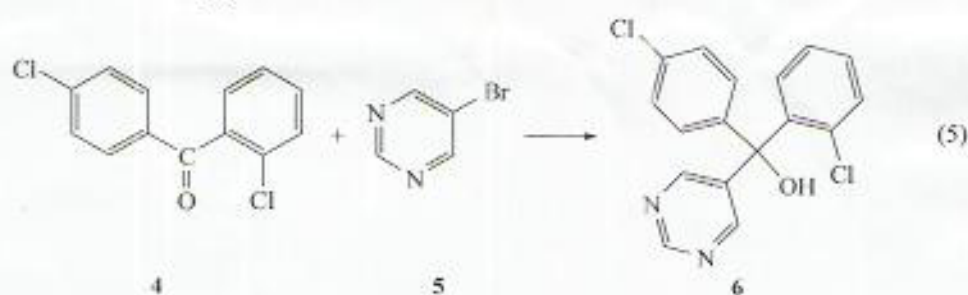


## Question 2

This question carries 10 per cent of the marks for this assignment, and tests Learning Outcomes 5, 6, 7 and 8 of Book 10 Part 2.

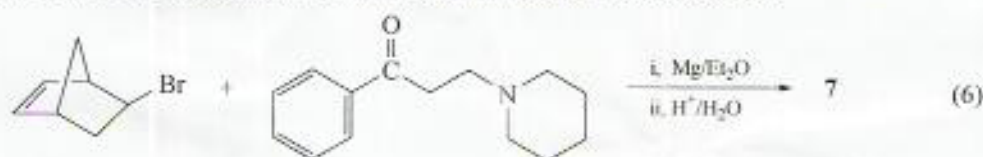
*Hint* For the parts of Question 2, identify the site of reaction and treat the rest of the molecule as R groups.

(a) (5 marks) Fenarimol (6) is a fungicide that can be made by reaction of the diarylketone 4 with the brominated pyrimidine 5.



Using appropriate organometallic reagents, suggest a synthesis of fenarimol (6), and draw the mechanism for the reaction using curly arrows.

(b) (5 marks) The antispasmodic drug biperidin (7) is made by using the Grignard addition Reaction 6. What is the structure of biperidin? Do not be put off by the complexity of the compounds. The chemistry is the same as you have seen in Book 10 Part 2.



Draw a mechanism to show how biperidin (7) is formed.