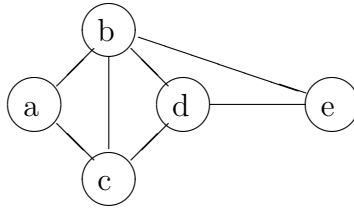


5. (a) What are the advantages and disadvantages of structuring code into basic blocks? Explain how basic blocks can be recognized. [7]
- (b) When managing function calls, values to be stored in activation records are classified as *caller-save* and *callee-save*. Explain what is meant by these terms, and what practical difference there is in making some data caller-save or callee-save. [9]
- (c) Consider the following interference graph:



Perform the register allocation procedure to assign one of the available 3 registers (R_0 , R_1 , and R_2) for each variable, and show the resulting allocation. If spilling is needed, explain the choice of variable to be spilled. Explain any algorithms and criteria that are used. [9]