1. Write the GCN (Guarded Command Notation) equivalent of the following C statements:

   a. Assume here that s1, s2, s3, and s4 represent arbitrary C statements, and that A, B, and C represent arbitrary C expressions.

       ```c
       if (A)
       {
         s1;
         if (!B)
         {
           s2;
         }
         else if (C)
         {
           s3;
         }
         else
         {
           s4;
         }
       }
       
       b.

       for (i=0; i<n; i++)
       {
         for (j=i; j<n; j++)
         {
           k = n-i;
         }
       }

   c.

       do
       {
         s1;
         if (C)
         {
           break;
         }
         s2;
       } while (A && B);

2. Sethi 5.3.
3. Show the result of the following program under the following scoping schemes.
   a. Lexical scoping
   b. Dynamic scoping

   ```
   int Penn, Teller;
   procedure poof()
   { int Penn = 7;
     return (Penn + Teller);
   }
   procedure laugh()
   { int Teller = 34;
     return (Penn + Teller - poof());
   }
   main()
   { Penn = 171;
     Teller = 61;

     Penn = poof();
     print(Penn);

     Penn = laugh();
     print(Penn);
   }
   ```

4. For the following program, show the output under each of the following parameter passing mechanisms:
   a. Call by value
   b. Call by reference
   c. Call by value-result
   d. Call by name

   ```
   Michael : integer;

   procedure Wizard (Jeffrey: integer)
   { Michael := Michael-3;
     Jeffrey := Jeffrey + 38;
     print(Michael, Jeffrey);
   }
   main()
   { Michael := 23;
     Wizard(Michael);
     print(Michael);
   }
   ```