The Open University of Sri Lanka
B.Sc. Degree Programme/Continuing Education Programme Level 4
Closed Book Test (CBT) – 2010/2011
PCU 2140 – Computing for Scientific Studies Using FORTRAN

Duration: - One and half hours

Date: - 21.04.2011 **Time: - 4.00p.m.-5.30p.m.**

Answer **All** the Questions.

1. Write down the output of the following FORTRAN program.

```
      INTEGER PROD, I, K
            K=1
      DO 10 I=1,5
            K=(-1)*K
            PROD=K*I
            PRINT*, 'I is', I,'Product is', PROD
   10 CONTINUE
      STOP
      END
```

2. Write a FORTRAN program to compute the following four sums and print them.

$$1+\frac{1}{2},1+\frac{1}{2}+\frac{1}{4},1+\frac{1}{2}+\frac{1}{4}+\frac{1}{8},1+\frac{1}{2}+\frac{1}{4}+\frac{1}{8}+\frac{1}{16}$$

3. Write a FORTRAN program to compute the sum $j=\sum_{J=0}^{4}\frac{(-1)^J}{J!}$, where $J!=J(J-1)(J-2)...1$

4. Write a FORTRAN program to print the even numbers less than 11 and greater than 3 in decreasing order.

5. i) Clearly state the errors in each line (if any) of the following FORTRAN program.

```
      INTEGER I, I1

      REAL TOTAL

    5 READ*, I1
      TOTAL = 0
```

```
      IF (I1.GE.3.0) THEN
            DO 10 I = 3, I1
                  TOTAL = TOTAL + I
10          CONTINUE

            PRINT 'TOTAL is' , TOTAL

      ELSE

            PRINT 'I1 is smaller than 3'

            GOTO 50

      END IF

      STOP

      END
```

ii) Suppose all the errors in the above FORTRAN program are corrected. Print the outputs in each case given below.

a) Input value for I1 is 2.
b) Input value for I1 is 5.