[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 8747   C   Roll No.............

Unique Paper Code   : 251302

Name of the Paper   : ELHP-305 and : Electronics Practical – V
                            (Based on ELHT 301 and CS-1)

Name of the Course   : B.Sc. (Hons.), Electronics, Part – II

Semester   : III

Duration   : 1 Hour

Maximum Marks   : 25

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any five questions from section A and any ten questions from section B
(All questions in section A are of 1 mark each and all questions in section B are of 2 marks each)

Section A

Q1. Which flip-flop is called universal flip-flop and why?

Q2. What are the four modes of operation of a shift register?

Q3. Implement the following Boolean expression in NOR logic
     F=AB+A'B'

Q4. How many flip flops does a modulo 8 counter require?

Q5. What is preprocessor in C++? What is the function of preprocessor include
     directive?

Q6. What is a constructor?

Q7. If xptr is a pointer to integer variable x. Write an expression to obtain the value of
     x.

(5x1)

Section B

Q1. What will be the contents of a 4 bit ring counter after the 4th pulse if its initial
     state is 0001? Give its circuit using J-K flip-flop.

Q2. Define a Encoder? How is it different from Multiplexer?

P.T.O.

Q3.   Differentiate between a combinational and sequential circuit?

Q4.   (a) In a seven segment display what will be the number displayed if a,c,d,f,g, are
       lit.
       (b) In a seven segment display what will be the number displayed if a,b,g,c,d are
       lit.

Q5.   If $V_{ref} = 10$ V what will the analog output for $(0011)_2$ in a 4-bit D/A convertor?

Q6.   To which logic family does the 74 series of digital IC's belong to and what is its
       propagation delay per gate .

Q7.   Write statements for the following
       (a) Declaring integer variable *count* and assigning a value 1 to it.
       (b) Declaring a variable *c* and assign to it a value of "A".

Q8.   What is the use of *new* and *delete* operator in C++?

Q9.   How does a class accomplish data abstraction and encapsulation?

Q10.   What is function overloading? Explain with an example.

Q11.   Write a statement that declares an enumerated data type called speeds with the
       values absolute, single and album. Give these three names the integer values 67,
       35 and 17.

Q12.   Describe the importance of destructors.

Q13.   How is the working of inline function different from an ordinary function? Which
       of the two is more beneficial?

                                                                          (10x2)