Exam.Code:0921
Sub. Code: 6473

2122

B. E. (Information Technology)

Third Semester

ESC-301: Digital Electronics

Time allowed: 3 Hours | Max. Marks: 50

***NOTE**: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Part.*

x-x-x

1. a) Write down disadvantages of Analog Signals.

   b) What are applications of Grey Codes?

   c) Define following parameters:
      i) Fan-in ii) Power Dissipation

   d) Define redundant group in K-map.

   e) Write various types of ROMs. (5*2=10)

Part-A

2. a) Apply Demorgan's theorem to the following expression:

   $\overline{AB}\,(CD + \overline{EF})\,.\,(\overline{AB} + \overline{CD})$

   b) Using Boolean Algebra show that

   $(A+B)\,(\overline{A}+C)\,(B+C) = AC + B\overline{A}$ (2*5=10)

3. a) Explain the triggering methods of latches and flip-flops in detail.
   b) What is Race around Condition? How can be it avoided? (2*5=10)

4. Design a synchronous counter using J-K filp-flop to count the flowing states only: (10)
   1,2,3,1,2.....

Part-B

5. a) Write down the drawbacks of Binary Weighted Resistance D/A converters.
   b) What are the advantages of the R-2R ladder DAC over the weighted resistor type DAC? (2*5=10)

6. Explain the various characteristics of logic families in the detail. (10)

7. Explain the classifications of memories and their characteristics in the detail. (10)

x-x-x