**MODEL TEST PAPER Roll No: ………………………….**

**Hi-Tech Institute of Engineering & Technology**

**DEPARTMENT OF BCA**

**Course- BCA**

**(SEM - 2) EVEN SEMESTER MODEL TEST PAPER**

**SUBJECT - DECO**

**Subject Code: BCA-204**

**TIME : 3 hrs Maximum Marks:75**

**Note: Attempt all the sections as per instructions.**

**SECTION A  
Note: Attempt all questions. 3\*5=15**

1. **Write De Morgan's law.**
2. **Define Universal gate and explain in brief.**
3. **Draw the truth table and circuit diagram of XOR gate.**
4. **Differentiate between flip flop and latches.**
5. **Write short note on Virtual Memory.**

**SECTION B  
Note: Attempt any two questions. 7.5\*2=15**

1. **Differentiate between Combinational logic circuit and sequential logic circuit.**
2. **Construct half subtractor using logic gates.**
3. **Minimize the following Boolean function using K map.**

**F(A,B,C,D)= ∑ (3,4,5,7,9,13,14,15)**

**SECTION C  
Note: Attempt any three questions. 15\*3=45**

1. **Discuss various types of logic gates. Also discuss their applications.**
2. **I) Implement 4:1 multiplexer using 2:1 multiplexer.**

**II) Differentiate between RAM and ROM.**

1. **Write short notes on**

**i) ROM**

**II) PROM**

**III) EPROM**

**IV) RAM**

1. **Draw the master slave flip flop and explain its working.**
2. **I) Design 5-mod counter using JK flip flop.**

**II) Explain the difference between cache and virtual memory.**