M.Sc.(Computer Science) - I First Semester (Old)

1MSC3 - Paper-III : Digital Electronics and Embedded System

P. Pages : 1 **GUG/W/18/2877**

Time : Three Hours * 3 8 7 9 * Max. Marks : 80

Notes : 1. All the questions are compulsory and carry equal marks.
2. Draw neat and labelled diagrams wherever necessary.
3. Avoid vague answers and write specific answers related to questions.

1. Either

a) Explain Analog signals and Digital signals in detail. **8**

b) What are the Exclusive NOR operations? also explain the exclusive OR. **8**

OR

c) What is signed Binary Numbers? Explain in brief with suitable example. **8**

d) Write Duality Theorem and explain it's applications in detail. **8**

2. Either

a) Describe the standard Representation for Logic functions. Also explain the K-Map. **8**

b) Write a brief note on: **8**

i) Half Adder ii) Full Adder
iii) Half Subtractor iv) Full Subtractor

OR

c) Explain J-K Flip Flop in detail. **8**

d) What is counter? Explain in brief the Ripple counter and synchronous counter. **8**

3. Either

a) What do you mean by Embedded System? Explain in detail. **8**

b) Explain the use of VLSI Circuit Design Technology in detail. **8**

OR

c) What Skills are required for an Embedded System Designer? **8**

d) Describe the Architecture of 8051 Processor. **8**

4. Either

a) What is Process Management? Explain. **8**

b) Explain the Interrupt Routines in RTOS Environment in detail. **8**

OR

c) Describe the RTOS Task Scheduling Model. **8**

d) Write a brief note on OS Security Issues. **8**

5. Attempt all the questions.

a) Write a short note on: **4**
1's Compliment

b) What is De- Multiplexer? Explain it's use in combinational logic Design. **4**

c) Explain the Complex System Design process. **4**

d) Explain the Timer function in short. **4**

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