Total No. of printed pages = 2

Co-605/VLSI&ES/6th Sem/2017/M

VLSI AND EMBEDED SYSTEMS

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

SECTION – A

Answer any *three* questions.

1. (a) Draw the CMOS implementation of boolean function : 8

$$f(A, B, C, D) = \overline{(A+B)C+D}$$

(b) Compare the RISC and CISC processors with individual features, merits and demerits. 12

2. (a) What do you mean by embeded systems ? Give an examples of such systems. Describe the function of each sub-blocks with diagrams. 2+8=10

(b) Give a detailed description of physical design steps in relation to VLSI design. 10

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3. (a) Describe the different process or processor architechtures architechture for embeded systems and draw the block diagrams for each of these. 6+6=12

(b) Describe how n-mos and p-mos transistors can work as pass transistors. 4+4=8

4. (a) Compare the performance of n-mos, p-mos, c-mos and bi-mos and bipolar technologies. 6

(b) Implement the function f(A, B, C) = A + (B.C) using n-mos logic. 6

(c) Mention the design methodologies for embeded systems and hence describe top-down approach in details. 8

SECTION – B

Answer any *one* question.

5. (a) Mention different types of power dissipation in CMOS technology. 5

(b) Write a short note on partitioning. 5

6. Describe the semi custom-based design style with proper diagram. 10