Total No. of Questions—**12**] [Total No. of Printed Pages—**4**

Seat No.	

[4957]-209

S.E. (Semester-II) (Computer Engineering)

EXAMINATION, 2016

COMPUTER ORGANIZATION

(2008 Pattern)

Time : Three Hours **Maximum Marks : 100**

N.B. **:—** (*i*) Answer question number 1 *or* 2, 3 *or* 4, 5 *or* 6 from section I.

(*ii*) Answer question number 7 *or* 8, 9 *or* 10, 11 *or* 12 from section II.

(*iii*) Neat diagram must be drawn whenever necessary.

(*iv*) Figures to the right indicate full marks.

(*v*) Assume suitable data, if necessary.

SECTION-I

1. (*a*) Draw and explain the flowchart for floating point addition and explain. [6]

(*b*) Write neat diagram explain in detail functional units of computer system. [4]

(*c*) Perform the following divisions using restoring division :[8]

(*i*) Dividend = 12

(*ii*) Divisor = 4.

P.T.O.

Or

2. (*a*) Represent (187.1875) in single and double precision floating point format. [10]

(*b*) Show the general structure of IAS computer. Explain stored program concept. [8]

3. (*a*) Draw and explain CPU architecture of Intel processor. [8]

(*b*) Write a control sequence for the execution of the instruction ADD (R_s), R_1 [8]

Or

4. (*a*) What are the different design methods for hardwired control units ? Explain any *one*. [8]

(*b*) Explain the design of ALU using combinational circuits. [8]

5. (*a*) Explain the register architecture of 68000 processor. [8]

(*b*) Explain in detail horizontal and vertical organization of micro-instruction. [8]

Or

6. (*a*) Draw and explain single bus organization of CPU. [8]

(*b*) Explain instruction cycle. How will you represent instruction cycle with interrupts ? Explain. [8]

SECTION-II

7. (*a*) What is virtual memory concept ? Explain the role of TLB in virtual memory organization. [10]

(*b*) Explain the following : [8]

(*i*) RAID

(*ii*) Magnetic Memory.

Or

8. What is addressing mode ? Explain the following addressing modes with example : [18]

(*a*) Immediate Addressing

(*b*) Base Register Addressing

(*c*) Intex Addressing

(*d*) Register Addressing.

9. (*a*) Explain synchronous and asynchronous bus in an input operation with timing diagrams. [8]

(*b*) Explain programmed I/O and Interrupt Driven I/O. [8]

Or

10. (*a*) Explain in detail DMA data transfer mode. [8]

(*b*) Explain in detail how scheduling and memory management is done by operating system with its types. [8]

11. (*a*) Explain the SISD, SIMD and MIMD systems. [8]

(*b*) What is the use of Message Passing Protocol ? [8]

Or

12. (*a*) Write short note on : SMP and Clusters. [8]

(*b*) Enlist the characteristics of Non-uniform Memory Access (NUMA). [8]