Seat No. : _____

TM-104

B.C.A Sem.-III
May-2013

CC-201 : Computer Organization & Microprocessor

Time : 3 Hours] **[Max. Marks : 70**

Instructions : (1) Figure to the right indicate full marks.
(2) Draw diagrams wherever necessary.

1. (a) Write short notes on following : **8**

(1) Von Neumann architecture

(2) CPU registers

OR

(1) Device controller

(2) BUS concept

(b) Answer the following : **6**

(1) Explain interrupts.

(2) Explain CPU states.

OR

(1) A clock signal has a frequency of 20 MHz with a duty cycle of 50%. Calculate its period and pulse width.

(2) Explain Macro and Micro operation.

2. (a) Draw the block diagram and truth table of following gates : **8**

(1) NAND

(2) NOR

(3) X-NOR

(4) NOT

OR

Convert following FPS number to decimal number.

0 X C2508000 H

(b) Do as directed : **6**

(1) How can the following 6 bit signed numbers be stored in 8 bit registers ?

(i) 001011

(ii) 010111

(iii) 101010

(2) Draw the block diagram and truth table of half adder.

OR

(1) Draw the format of single precision floating point format.

(2) Draw the truth table of 3-line to 8-line decoder.

3. (a) What is Cache Memory ? Explain Cache Coherence. **8**

OR

Explain Memory Parameters.

(b) Answer the following : **6**

(1) Explain Write Buffer.

(2) Draw the block diagram of RAM chip of size (128 × 8).

OR

(1) Explain Instruction Prefetch.

(2) Explain any write policy of Cache.

4. (a) Explain RISC and CISC processors. **8**

OR

Explain Intel core i3 and i5 processor.

(b) Answer the following : **6**

(1) Explain immediate addressing mode of 8086 with example.

(2) Explain Type 0 and Type 1 interrupt.

OR

(1) Explains MIPS processors.

(2) Explain addressing modes of 8086.

5. Answer the following : **14**

(1) Define Device Controller.

(2) What is NMI interrupt ?

(3) Draw block diagram of D-flip flop.

(4) Evaluate 2's complement of this number : 1011.

(5) Explain Cache Hit.

(6) What is Virtual Memory ?

(7) Write the function of STEP control signal.

(8) Define Associative Memory.

(9) What is Type 2 interrupt ?

(10) Pentium II is an example of 32 bit microprocessor. [T/F]

(11) Which pin is used to decide the operating mode (maximum/minimum) of 8086 microprocessor ?

(12) Give the full form of ROM.

(13) What is Normalization ?

(14) Bandwidth is known as rate of data transfer. [T/F]