## DipIETE – CS (NEW SCHEME)  –  Code: DC57

### Subject: COMPUTER ORGANIZATION

Time: 3 Hours

**DECEMBER 2011**

Max. Marks: 100

**NOTE: There are 9 Questions in all.**

- **Please write your Roll No. at the space provided on each page immediately after receiving the Question Paper.**
- **Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after 45 Minutes of the commencement of the examination.**
- **Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

**Q.1** **Choose the correct or the best alternative in the following:** (2×10)

a. Which part is known as the brain of a computer system?

  (A) Registers            (B) RAM
  (C) ROM              (D) CPU

b. Which of the following is not an output device?

  (A) Scanner          (B) Printer
  (C) Monitor          (D) None of the above

c. In this addressing, the address field contains the address of a word in memory, which in turn contains the address of the operand.

  (A) Immediate        (B) Direct
  (C) Indirect         (D) Register

d. MAR stands for

  (A) Main Address Register      (B) Main Address Radar
  (C) Memory Address Radar      (D) Memory Address Register

e. In a non-vector interrupt

  (A) the branch address is not assigned to fixed location
  (B) the branch address is assigned to fixed location
  (C) Both (A) and (B)
  (D) None of the above

f. In Reverse Polish notation, expression A+B*C

**(A)** AB*C +          **(B)** ABC* +
**(C)** ABC+ *          **(D)** None of the above

g. An address of main memory is

**(A)** Logical Address          **(B)** Physical Address
**(C)** Virtual Address          **(D)** None of the above

h. The resister used as a working area in CPU is

**(A)** Program Counter          **(B)** Instruction Register
**(C)** Instruction Decoder          **(D)** Accumulator

i. The 2's complement form (use 6-bit word) of the number 1001 is

**(A)** 110011          **(B)** 110111
**(C)** 100011          **(D)** 111101

j. FFFF will be the last memory location in a memory of size

**(A)** 1 K          **(B)** 16 K
**(C)** 32 K          **(D)** 64 K

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### Answer any FIVE Questions out of EIGHT Questions.
### Each question carries 16 marks.

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**Q.2**  a.  What is program execution time?          **(2)**

b.  Explain the bus structure of computer system.          **(6)**

c.  Explain three address, two address and one address instructions with example.          **(8)**

**Q.3**  a.  What is an assembly language? Explain the working of a two pass assembler.          **(8)**

b.  What is queue? Differentiate between stack and queue.          **(4)**

c.  Explain in brief subroutine nesting and processor stack.          **(4)**

**Q.4**  a.  What is the necessity of a DMA in a system? Explain the working of DMA with the help of a block diagram.          **(8)**

b.  Explain the process of enabling and disabling of interrupts.          **(8)**

**Q.5**  a.  What is parallel interface? Explain the input interface with a suitable circuit.**(8)**

        b.  What is SCSI Bus? Write the function of different SCSI signals.    **(8)**

**Q.6**  a.  What are dynamic memories? Explain internal organisation of a 1 M×1 dynamic memory chip.    **(8)**

        b.  Describe the different mapping functions of cache memory.    **(8)**

**Q.7**  a.  What is virtual memory? Why virtual memory is used in computer system? **(8)**

        b.  What is a full adder? Design an n-bit ripple carry adder.    **(8)**

**Q.8**  a.  Using Booth's algorithm multiply 25 with -6.    **(8)**

        b.  Draw the block diagram of hardware implementation of binary division.    **(8)**

**Q.9**  a.  Explain the steps required to fetch a word from memory.    **(8)**

        b.  Write a note on Hard-wired control.    **(8)**