

AMIETE – CS/IT {NEW SCHEME}

Time: 3 Hours

JUNE 2014

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- 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. A group of bits that tell the computer to perform a specific operation is known as

- (A) Instruction code (B) Micro-operation
(C) Accumulator (D) Register

b. A k-bit field can specify any one of

- (A) 3k registers (B) 2k registers
(C) K2 registers (D) K3 registers

c. BSA stands for _____

- (A) Branch and store accumulator (B) Branch and save return address
(C) Branch and shift address (D) Branch and show accumulator

d. Memory unit accessed by content is called

- (A) Read only memory (B) Programmable Memory
(C) Virtual Memory (D) Associative Memory

e. Which of the following is/are methods of truncation?

- (A) chopping (B) Von-Neumann rounding
(C) rounding (D) All of these

f. The main memory in a Personal Computer (PC) is made of_____.

- (A) cache memory (B) static RAM
(C) dynamic Ram (D) both (A) and (B)

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- g. Virtual memory consists of
- (A) Static RAM (B) Dynamic RAM
(C) Magnetic memory (D) Main memory
- h. In computers, subtraction is carried out generally by ____.
- (A) 1's complement method (B) 2's complement method
(C) signed magnitude method (D) BCD subtraction method
- i. A Stack-organized Computer uses instruction of ____.
- (A) Indirect addressing (B) Two-addressing
(C) Zero addressing (D) Index addressing
- j. Which of the following is true?
- (A) Both SRAM and DRAM chips are volatile.
(B) RDRAM chips cannot be assembled into larger modules.
(C) Both (A) and (B)
(D) None of (A) and (B)

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

- Q.2** a. Describe the functional unit of a computer system in detail. (8)
- b. Explain the following:
(i) Overflow in integer Arithmetic
(ii) Big-Endian and Little-Endian assignments. (8)
- Q.3** a. Discuss addressing mode and different types of addressing mode. (8)
- b. Explain with examples the difference between arithmetic shift and logical shift. (8)
- Q.4** a. What do you mean by software and hardware interrupts? How these are used in microprocessor? (8)
- b. Explain two approaches to bus arbitration. (8)
- Q.5** a. Explain in detail how the PCI bus operates. (8)
- b. Explain how input and output interfaces can be combined into a single interface. Give circuit diagram for the same. (8)

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- Q.6** a. What do you mean by memory hierarchy? Describe in detail. (8)
b. What do you mean by interleaved memory? Explain. (8)
- Q.7** a. Define the terms: Seek time, Rotational Delay, Access time. (8)
b. Explain working of an n-bit ripple-carry adder. (8)
- Q.8** a. Give and explain the circuit arrangement for binary division. (8)
b. Explain, (with the help of suitable examples) IEEE standard for floating-point numbers (). (8)
- Q.9** a. What do you understand by Fetch cycle, instruction cycle, machine cycle? (8)
b. Explain micro programmed control. Give basic organization of a microprogrammed control unit. (8)