

# AMIETE – ET (OLD SCHEME)

Code: AE13  
Time: 3 Hours

Subject: COMPUTER ENGINEERING  
Max. Marks: 100

**DECEMBER 2010**

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 half an hour 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. Microcode is stored in

- (A) RAM (B) ROM  
(C) CPU Registers (D) All of above

b. One pass and two pass are used in

- (A) Assemblers (B) Compilers  
(C) Loaders (D) Linkers

c. The following is an example of optical disk

- (A) IDE Disk (B) RAID  
(C) DVD (D) SCSI Disk

d. The processing speed of microprocessor is mentioned in terms of

- (A) MOPS (B) MBPS  
(C) MIPS (D) MGPS

e. Programmable interval timer 8254 has ----- number of counters

- (A) 3 (B) 2  
(C) 4 (D) 5

f. Serial output data and serial input data can be implemented using

- (A) OUT and IN (B) SIM and RIM  
(C) LDA and STA (D) PUT and GET

g. Data transfer from I/O device to memory and vice versa with going through the microprocessor is known as

- (A) Interrupt data transfer (B) Synchronous transfer  
(C) Asynchronous transfer (D) Direct memory access

- h. grep command is used to find
- (A) links of file                      (B) size of file  
(C) Access rights for a file        (D) word in a file
- i. Power PC, DEC Alpha 21264 and SUN's Ultra Sparc are examples of
- (A) 16-bit microprocessor        (B) 64-bit microprocessor  
(C) 128-bit microprocessor       (D) 32-bit microprocessor
- j. An interrupt caused by an external signal applied to an interrupt input line of CPU is
- (A) Software interrupt              (B) Maskable interrupt  
(C) Hardware interrupt              (D) Firmware interrupt

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

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- Q.2** a. Draw the basic block diagram of digital computer and explain various components. (6)
- b. Compare and contrast the following parallel processors: (6)
- (i) Pipelined processor  
(ii) Array processor  
(iii) Multiprocessor
- c. Explain RISC and CISC computers and their advantages (4)
- Q.3** a. Convert hexadecimal number 4D9 to its equivalent decimal number. Give sequence of steps. (2)
- b. Add BCD 7 and BCD 9 and give the result in BCD format. (2)
- c. Explain functions of operating system. (6)
- d. Give the command syntax in DOS and Unix for the following: (6)
- (i) Movement of file from folder A to folder B  
(ii) Attribute of file  
(iii) Find a file in a directory tree  
(iv) Display contents of a directory
- Q.4** a. Explain sequence of steps in instruction cycle. (4)
- b. Draw timing diagram for memory read and memory write and explain the timing diagram. (8)
- c. Mention various components used in programmable peripheral interface 8255. (4)

- Q.5 a.** Explain the following processors: **(10)**
- (i) Pentium III
  - (ii) 80386 Processor.
  - (iii) Sun Ultra SPARC
  - (iv) Pentium Pro.
- b. Explain real, virtual and protected modes used in 8086. **(6)**
- Q.6 a.** Explain Intel 8085 CPU architecture. **(6)**
- b. Differentiate between ISA and EISA architectures. **(5)**
- c. Explain segmented memory used in 8086/8088 and give its advantages. **(5)**
- Q.7 a.** Explain architecture of programmable interval timer 8253/8254. **(6)**
- b. Explain the working of serial data transfer. Which component is used in serial data transfer? **(4)**
- c. Explain any two input and output devices and their working mechanism. **(6)**
- Q.8 a.** Explain the following memory technologies :- **(8)**
- (i) Dynamic RAM
  - (ii) DIMM
  - (iii) EEPROM
  - (iv) RIMM
- b. Compare and contrast the following: **(6)**
- (i) Cache memory
  - (ii) Associative memory
  - (iii) Virtual memory
- c. Explain the functionality of RAM disk and RAID system. **(2)**
- Q.9 a.** Explain classification of instruction set in 8085. **(6)**
- b. Explain Novell Netware and its functionality. **(4)**
- c. Give a short note on PCI Bus Architecture. **(6)**