Code: AE13   **Subject: COMPUTER ENGINEERING**

AMIETE – ET (OLD SCHEME)

Time: 3 Hours | **OCTOBER 2012** | **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 best alternative in the following:** (2×10)

a. A computer assisted method for the recording and analyzing of existing or hypothetical systems is

   (A) Data transmission   **(B)** Data flow
   (C) Data capture   **(D)** Data processing

b. Which part interprets program instructions and initiate control operations?

   (A) Input   **(B)** Storage unit
   (C) Logic unit   **(D)** Control unit

c. Programmable interval timer 8254 has _____ number of counters

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

d. Which computer has been designed to be as compact as possible?

   (A) Mini   **(B)** Super computer
   (C) Micro computer   **(D)** Mainframe

e. The symbols used in an assembly language are

   (A) Codes   **(B)** Mnemonics
   (C) Assembler   **(D)** All of the above

f. Any storage device added to a computer beyond the immediately usable main storage is known as

   (A) Floppy disk   **(B)** Hard disk
   (C) Backing store   **(D)** Punched card

g. A system program that combines the separately compiled modules of a program into a form suitable for execution

   (A) assembler   **(B)** linking loader
   (C) cross compiler   **(D)** load and go

h. A hard disk is divided into tracks which are further subdivided into:

    (A) clusters   **(B)** sectors
    (C) vectors   **(D)** heads

i   Which standard govern parallel communications?

    (A) RS232   **(B)** RS-232a
    (C) CAT 5   **(D)** IEEE 1284

j. Which command is used to display the top of the file in UNIX?

    (A) cat   **(B)** head
    (C) more   **(D)** grep

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

Q.2 a. Differentiate Intelligent and Smart systems. What are the challenges for smart systems in real world? **(8)**

    b. What is the main difference between RISC and CISC in computer science? **(4)**

    c. What do you mean by Distributed Systems? Write some advantages of Distributed Systems. **(4)**

Q.3 a. Convert the following-
       (i) Convert binary 111111110010 to hexadecimal
       (ii) Convert hexadecimal C9 number to binary **(5)**

    b. What do you mean by Computer codes? Explain ASCII codes. **(6)**

    c. What are the functions of operating system? **(5)**

Q.4 a. Explain sequence of steps in instruction cycle. **(4)**

    b. Draw the block diagram (pin diagram) of 8085- microprocessor architecture and explain its major parts in details and what is interrupt? Also explain different types of interrupt in 8085 Microprocessor. **(12)**

Q.5 a. Write short notes on the following-

       (i) EPROM & EEPROM
       (ii) SRAM & DRAM
       (iii) CD-ROM & DVD
       (iv) RAID System **(8)**

    b. What is the difference between a volatile memory and a Non-volatile memory? **(4)**

    c. Differentiate between Cache Memory & Virtual Memory. **(4)**

Q.6 a. What is an Optical Scanner? Explain how it works. **(5)**

b. Differentiate between Printers & Plotters. **(5)**

c. How to Interface the 8085 Microprocessor with peripherals? **(6)**

Q.7 a. Explain the different advantages of Pentium processor (P6) and also write different additional functionality of P6 with comparisons to other processors. **(8)**

b. Explain any two operating modes of 80386 processor. **(8)**

Q.8 a. What is Bus? Summarize the different types of buses and uses of buses in computer? Explain some of the common expansion bus types that have ever been used in computers? **(6)**

b. Draw the basic architecture of 8088 processor and explain different bus registers and flags in 8088 processor? **(10)**

Q.9 a. Write short note on following:

(i)   Addressing modes in 8088 processor **(4)**
(ii) Direct Memory Access (DMA) **(4)**

b. Explain 8255-Programmable Peripheral Interface (PPI) with the help of block diagram. **(8)**