Code: AE102/AC102/AT102
Subject: COMPUTER CONCEPTS & C PROGRAMMING

AMIETE – ET/CS/IT (New Scheme)

Time: 3 Hours   **June 2019**   **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**. The ALU of a computer responds to the commands coming from**
   (A) Primary memory   **(B)** Control section
   (C) External memory   **(D)** Cache memory

b. What are the stages in the compilation process?
   (A) Feasibility study, system design and testing
   (B) Implementation and documentation
   (C) Lexical Analysis, syntax analysis, and code generation
   (D) None of these

c. Which of the following is not an input device?
   (A) OCR   **(B)** Optical scanners
   (C) Voice recognition device   **(D)** COM (Computer Output to Microfilm)

d.   The two kinds of main memory are:
   (A) Primary and secondary   **(B)** Random and sequential
   (C) ROM and RAM   **(D)** All of these

e. The C language consists of _____ number of keywords.
   (A) 32   **(B)** 40
   (C) 24   **(D)** 56

f. Which pair of functions below are used for single character I/O ?
   (A) getchar() and putchar()   **(B)** scanf() and printf()
   (C) input() and output()   **(D)** None of these

g. What the follwing function call mean?
Strcpy(s1 , s2);
(**A**) copies s1 string into s2   (**B**) copies s2 string into s1
(**C**) copies both s1 and s2   (**D**) None of these

h. Explicit type conversion is known as
(**A**) conversion   (**B**) disjunction
(**C**) separation   (**D**) casting

i. By default a function returns a value of type
(**A**) int   (**B**) char
(**C**) void   (**D**) None of these

j. Which of the following is used as a string termination character?
(**A**) 0   (**B**) \0
(**C**) /0   (**D**) None of these

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

Q.2   a. Draw and Explain the Digital block Diagram of Computer.   **(10)**

b. Write short note on: **(6)**
    i.   top down development & Stepwise refinement
    ii.   Structured Programming

Q.3   a.What is Operating System . Explain its Functions & Types of Operating System   **(10)**

b. Write notes on number system and conversion codes   **(6)**

Q.4   a. With a neat block diagram explain different steps of software development.   **(12)**

b. Give the basic structure of a C program and explain it   **(4)**

Q.5   a. State and explain formatted input-output statements and standard input-output statements with example.   **(10)**

b. Distinguish between character constant and string constant.   **(2)**

c. What is typecasting? Explain with suitable example.   **(4)**

Q. 6   a. Summarise the different types of operators used in C language.   **(10)**

b. What is precedence and associatively of operators? Explain with examples.   **(6)**

Q.7   a. Explain the difference between call by value and call by reference by using
         suitable example   **(4)**

         b. Write a program to find factorial of a number: **(12)**
              i. Using without argument and without return function
              ii. Using without argument and with return function
              iii.Using with argument and without return function
              iv.Using recursion

Q.8   a. Write short on the following:-   **(10)**
              (a) break and continue   (b) nested if ,else if
              (c) switch   (d) for and while loop

          b. Write a program to find gcd and lcm of two numbers   **(6)**

Q.9   a. Write a C program to sort the given n names in ascending order   **(8)**

          b. Explain the concept of two dimensional array with a C program for matrix
             multiplication   **(8)**