ROLL NO. _____

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

AMIETE – ET/CS/IT (New Scheme)

Time: 3 Hours **DECEMBER 2018** **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.Which of the following is first generation of computer?
(A) EDSAC **(B)** CDC-1604
(C) IBM-1401 **(D)** ICL-2900

b.Which device is required for the Internet connection?
(A) Joystick **(B)** Modem
(C) NIC Card **(D)** CD Drive

c.Which of the following construct is not used in loops in c Programming
(A) While Statement **(B)** Loop insert statement
(C) Do statement **(D)** For statement

d.The maximum length in DOS commands is
(A) 127 chars **(B)** 80 chars
(C) 100 chars **(D)** 8 chars

e.Bitwise operators can operate upon?
(A) Ints and floats **(B)** Floats and doubles
(C) Ints and chars **(D)** Double and chars

f.What will be the output of the following statements ?
int x[4] = {1,2,3}; printf("%d %d %D",x[3],x[2],x[1]);
(A) 000 **(B)** 03%D
(C) 321 **(D)** 032

g.What is the output of the following code?

```
int a,b=2,c;
a=2*(b++);
c=2*(++b);
printf(“%d%d%d”,a,b,c);
```

(A) a=4, b=3, c=6 **(B)** a=4, b=4, c=8
(C) a=4, b=4, c=6 **(D)** a=4, b=4, c=4

h.Arrange the operators according to their precedence: +, %, ->, =
(A) =, +, %, ->
(B) %, +, =, ->
(C) %, ->, =, +
(D) ->, %, +, =

i. Which of the following statement is false?
(A) Constant variables need not be defined as they are declared and can be defined later
(B) We cannot reassign a value to a constant variable
(C) Const keyword is used to define constant values
(D) Global constant variables are initialized to zero

j. Which of the following are correct syntaxes to send an array as a parameter to function:
(A) Func(&array);
(B) Func(#array);
(C) Func(*array);
(D) Func(array[size]);

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

Q.2	a.	Describe in brief several types of computers.	**(5)**
	b.	What is a storage device? Explain different types of Storage devices.	**(1+5)**
	c.	What is a computer? Write the advantages and disadvantages of 3rd generation computers.	**(1+4)**
Q.3	a.	What is meant by network topology? Briefly explain different types of topologies.	**(2+6)**
	b.	Do the following tasks as instructed: i) Subtract 0110111 from 1101110 ii) Find binary equivalent of octal number $(43)_8$ iii) Find binary equivalent of $(27.375)_{10}$	**(2+2+2)**
	c.	Write the difference between multiprogramming and multiprocessing operating system**.**	**(2)**
Q.4	a.	Briefly explain different steps involved in problem solving.	**(6)**
	b.	Draw a flowchart to find smallest number among three numbers.	**(5)**
	c.	What are the steps in software development? Explain each step of software development.	**(5)**
Q.5	a.	What is volatile variable in C? Why it is needed in C language?	**(2+2)**

b. What is L value and R value? Explain with an example. **(3+3)**

c. What is meant by data-type? What are the data types supported by 'C' language? Illustrate the importance of each**.** **(2+4)**

Q.6 a. What is an Operator? Explain its types in C language with the help of example. **(10)**

b. Explain operator precedence in C language. Evaluate the following expression
12 + 3 - 4 / 2 < 3 + 1 **(4+2)**

Q.7 a. Write a C program to demonstrate call by value and call by reference. **(4+4)**

b. Write a function that takes time in seconds as input and prints it in terms of hours, minutes and seconds. **(5)**

c. What is the difference between a global and local variable? **(3)**

Q.8 a. Write a C program which allows the user to enter an alphabet from Terminal as input. Using switch case print whether the alphabet is a VOWEL or CONSONANT. **(4)**

b. Write a C Program using goto and jump statement to calculate the sum and average of maximum of 5 numbers, if user enters negative number, the sum and average of previously entered positive number is displayed. **(8)**

c. Write a C program to demonstrate nested else if ladder. **(4)**

Q.9 a. Write a C program to copy a string to another string without using library function. **(5)**

b. Write a C program to find sum of *n* elements entered by user in an array using realloc() function. **(6)**

c. Write a C Program to find the biggest number in an array using Recursion. **(5)**