ROLL NO. _____

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

AMIETE – ET *{NEW SCHEME}*

Time: 3 Hours **DECEMBER 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. Which of the following is not an input device?

(A) joystick **(B)** track pad
(C) speaker **(D)** digitizer

b. CD-ROM is an example of

(A) Primary Memory
(B) Random Access Secondary Memory
(C) Sequential Access Secondary Memory
(D) None of these

c. The command for compiling a program written in C on UNIX platform is

(A) cd **(B)** cc
(C) cp **(D)** ce

d. Escape sequence for audible alert (bell) in C is

(A) '\b' **(B)** '\a'
(C) '\t' **(D)** '\r'

e. #define is a :

(A) Function in C **(B)** Keyword of C
(C) Pre- processor directive **(D)** Used for giving comments in C

f. Format specifier for inputting an integer is

(A) %s **(B)** %c
(C) %d **(D)** %f

g. Exponentiation operator in C is

(A) ** **(B)** ^
(C) * **(D)** there is no such operator in C

h. The result of the following 14 % –3 is

(A) –2 **(B)** 2
(C) 4 **(D)** –4

i. The result of the following set of statements is
```
float c;
c = 10 / 3;
printf("%f" , c );
```

(A) 3.333333 **(B)** 3
(C) 3.000000 **(D)** 3.0

j. The amount of memory allotted to an array int a[8] is

(A) 16 bytes **(B)** 8 bytes
(C) 32 bytes **(D)** 64 bytes

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

Q.2 a. Draw a block diagram of a computer and explain the functions performed by each block. **(10)**

b. Briefly explain Impact and Non-Impact Printers along with their characteristics giving two examples of each. **(6)**

Q.3 a. Briefly explain Static RAM and Dynamic RAM along with their advantages and disadvantages. **(6)**

b. Compare and contrast a single user with multi-user operating system. Use suitable examples. **(6)**

c. Convert the decimal number 2536 into octal format. **(4)**

Q.4 a. What is a complete directive in C programming language? Name and briefly explain any one such directive. **(3)**

b. Describe the basic structure of a C program. **(7)**

c. List the steps in writing and executing a C program. **(6)**

Q.5 a. What do you mean by storage classes? Briefly explain the various storage classes available in C. **(8)**

b. Identify the function used to accept formatted input in C programming language. Specify its syntax. Also specify the form in which it can be used to accept
(i) Integer Number (ii) Real Number and (iii) Character String **(4)**

c. What are symbolic constants in C? Explain with its syntax and use. **(4)**

Q.6 a. What is the output of the following code? **(6)**

```
main( )
{
   float a,b,c,x,y,z;

   a=9;
   b=12;
   c=3;

   x=a–b/3+c*2–1;
   y=a–b/(3+c)*(2–1);
   z=a–(b/(3+c)*2)–1;
   printf(“x=%f\n”, x);
   printf(“y=%f\n”, y);
   printf(“z=%f\n”, z);
}
```

b. Briefly explain the various special operators available in C **(6)**

c. Briefly explain any four mathematical functions in C along with their syntax. **(4)**

Q.7 a. Differentiate between the following: **(6)**
(i) while & do.. while loop in C
(ii) while loop and for loop in C
(iii) break & continue statement in C

b. Write a C program to display all prime numbers between Two Numbers entered by user. **(8)**

c. Rewrite the following function y using conditional operator: **(2)**
$y = 1.5x + 3$ for $x \leq 2$
$y = 2x + 5$ for $x > 2$

Q.8 a. Define Recursion. Write a program to find the factorial of a number using recursion. **(8)**

b. Distinguish between the following:
(i) Actual parameter and Formal parameter
(ii) Local variable and Global variable **(8)**

Q.9 a. Write a program to find the Maximum and Minimum marks obtained by students in a class of 60 student. **(8)**

b. Briefly explain the following string functions in C. Use suitable examples. **(8)**
(i) strcat( )
(ii) strcpy( )
(iii) strlen( )
(iv) strcmp( )