

AMIETE – CS/IT (OLD SCHEME)

Code: AC05 / AT05

Subject: PROGRAMMING & PROBLEM
SOLVING THROUGH 'C'
Max. Marks: 100

Time: 3 Hours

JUNE 2011

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. A programme written in C language contains
- (A) Any number of main() function
(B) Only one main() function
(C) No main function
(D) One main() and at least one other function
- b. for(;;) statement
- (A) is a valid statement (B) implements infinite loop
(C) Both (A) and (B) (D) (B) only.
- c. Which of the following C language input function does echo back the inputted character on the screen?
- (A) getch() (B) getche()
(C) getchar() (D) fgetc()
- d. On a 64 bit machine, we compile a C program using 32 bit compiler. What is the size of an **int** type variable define, in the program?
- (A) 64 bit (B) 16 bit
(C) 32 bit (D) 128
- e. After the execution of “x = y = z = 6”, what will be the value of x, y and z?
- (A) x = 6, y = 6, z = 6 (B) It is compiler dependent
(C) x = y, y = z, z = 6 (D) None of these
- f. Similarity between “continue & break” statements is
- (A) Both are same
(B) Both leave the statements below it without execution within the loop.
(C) Break allows the execution of the statement below it
(D) Continue allows but break does not allow execution of statement below it.

- Q.5** a. Write a function strcmp() that takes two strings as arguments and compares for equality or inequality. (8)
- b. What is Abstract data type and Derived data type? (5)
- c. Give the meaning of the following format specifiers:
%f %g %o %u %ld %14.5f (3)
- Q.6** Write a complete program to create a singly linked list. Also write functions to
(i) display the list.
(ii) count the number of nodes.
(iii) add a new node at the end of list.
(iv) reverse the list. (16)
- Q.7** a. What is the advantage of linked list over array? Give an example in which static data allocation is better than dynamic allocation. (8)
- b. Give syntax of fread () and fwrite () functions and explain the meaning of each parameters. (8)
- Q.8** a. Briefly explain various program design approaches. (6)
- b. Write a C program to concatenate string2 to string1 and result remains in string1. (10)
- Q.9** a. Give the output of the following program

```

main()
{
int y = 0;
unsigned int x = 0;
while (x != 0) { x <<1; y++ }
printf("the value of y is \"%d\", y);
}

```

(3)
- b. Write a short notes on the followings:
(i) Basic path testing and
(ii) Black box testing. (8)
- c. Write a macro to compute the cube of a number. (5)