

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA. Sem- IST Regular / Remedial Examination January/ February 2011

Subject code: 610001

Subject Name: Fundamentals of Programming

Date: 29 /01 /2011

Time: 10.30 am – 01.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Define the term Linker. Differentiate between following terms. **07**
- 1) Compiler and Interpreter.
 - 2) Flowchart and Algorithm.
 - 3) High level and Low Level Programming Language.
- (b)** Explain the switch statement using proper examples. Write a program to display triangle based on given value of N. Do not make use of nested loop. For example, for N = 3 output will be as **07**

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* * *

- Q.2 (a)** By giving example show how each row of 5x4 two dimensional integer array can be initialized with corresponding row number. Also by giving example, explain how character initialization differs from numerical initialization? **07**
- (b)** Explain recursive function by giving example of displaying first N natural numbers in reverse order. **07**

OR

- (b)** State the arguments that are passed in main() function. Discuss significance of each argument by giving an example. **07**

- Q.3 (a)** Write a program to extract first N character from a given string using pointer. **07**
- (b)** Discuss structure of array and show different ways to pass structure variable in to a function using example. **07**

OR

- Q.3 (a)** Explain level of indirection by giving proper example. Write a program to swap value of two variables using pointer. **07**
- (b)** Discuss similarities and differences among structure, union and enumerated data type. **07**

- Q.4 (a)** Discuss file opening modes used with fopen(). Write a program to append data in existing given file. **07**
- (b)** Discuss dynamic memory allocation vs. Static memory allocation. **07**

OR

- Q.4 (a)** Differentiate between text mode and binary mode stream. Discuss a built-in function that is used to read data randomly from a file. Write a program to display size of given file. **07**
- (b)** What is dynamic allocation of memory? Explain how memory can be allocated dynamically using appropriate example. **07**

Q.5 (a) Define Preprocessor directive. Discuss any three preprocessor directives giving example. **07**

(b) Answer following questions. **07**

- 1) What is difference between feof() and ferror()?
- 2) Find the value of expression 011| 0x101.
- 3) Which system software determines run time error?
- 4) Differentiate between char x[] = "program"; and char *x = "program";.
- 5) List different storage classes in C.
- 6) What does the statement FILE (*p) (void) mean?
- 7) What is return data type of built-in function scanf()?

OR

Q.5 (a) Differentiate between preprocessor directives # and ##. What is conditional compilation? Explain with example. **07**

(b) Answer following questions. **07**

- 1) Which symbol is used to represent decision in a flow chart?
- 2) Which system software determines existence of syntax error in program?
- 3) List situation in which we will get run time for the expression a / b.
- 4) Whether x<10 or ++x will be executed first as a part of the statement while (++x < 10).
- 5) What does a header file consists of?
- 6) What is return data type of built-in function printf()?
- 7) Which of the storage class helps in faster execution of a program?
