

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
M.E.- SEMESTER-I • EXAMINATION – WINTER 2013

Subject Code: 2715205

Date: 03-01-2014

Subject Name: Embedded C

Time: 10.30 To 13.00

Total Marks: 70

Instructions:

1. Q. no. 1 is compulsory and answers any FOUR questions from Q. No 2 to 6.
2. Make suitable assumptions wherever necessary.
3. Figures to the right hand indicate the marks.

Q. No. 1

[2 Marks X 7]

- a. Explain pointer to function with a suitable example?
- b. What are static variables?
- c. What is NULL pointer and what is its use?
- d. How can you define a structure with bit field members?
- e. Explain advantage of macro over a function.
- f. Explain pointer to array with a suitable example.
- g. What is typecast? In which situation typecast is not used?

Q. No. 2

- a. Explain in detail about Makefile and make utility with the help of suitable example? [7 Marks]
- b. Explain how to create and use static and dynamic libraries? Write short note on ld command used in Linux. [7 Marks]

Q. No. 3

- a. Explain about memory leaks and heap errors. How valgrind can help to analysis these? [7 Marks]
- b. Write a c program explaining 1D and 2D array, and make use of malloc, realloc, free funtion appropriately. [7 Marks]

Q. No. 4

- a. Explain about internal vs external linkage with suitable example. [7 Marks]
- b. Implement user defined function strlen, strrev, strcpy, strcat using pointers. [7 Marks]

Q. No. 5

- a. Explain IEEE single-precision and double-precision floating point format with examples? [7 Marks]
- b. Explain const and volatile qualifiers with suitable examples. [7 Marks]

Q. No. 6

- a. Explain preprocessor directives and conditional compilation with examples. [7 Marks]
- b. Explain structure alignment and packing issues with padding bits using suitable example. [7 Marks]
