USN ☐☐☐☐☐☐☐☐☐☐

10CS62

Sixth Semester B.E. Degree Examination, Dec.2016/Jan.2017
UNIX Systems Programming

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1 a. Explain the major difference between ANSI 'C' and K and R 'C' with example. **(10 Marks)**
   b. Write a C/C++ POSIX compliant program that prints the POSIX defined configuration options supported on any given system using feature test macros. **(08 Marks)**
   c. Mention any 4 compile time limits with their values. **(02 Marks)**

2 a. Explain the different types of files in UNIX. **(10 Marks)**
   b. Explain the UNIX Kernel support for files. **(10 Marks)**

3 a. Explain the working of the open function with prototype. **(10 Marks)**
   b. Write a C++ program to implement following UNIX command i) *ln*   ii) mv. **(10 Marks)**

4 a. Write a C/C++ program to demonstrate the use of outexit function. **(10 Marks)**
   b. Explain briefly the memory layout of a C program. **(10 Marks)**

PART – B

5 a. What is fork and vfork? Explain with an example program for each. **(08 Marks)**
   b. What is zombie process? Write a C program to avoid zombie process by forking twice. **(06 Marks)**
   c. Explain the six different forms of exec API. **(06 Marks)**

6 a. What is signal? Explain with a program how to setup a signal handler. **(10 Marks)**
   b. What is daemon process? Explain daemon characteristics and relation to session and process groups. **(10 Marks)**

7 a. What are pipes? Write a C/C++ program to send data from parent to child over a pipe. **(10 Marks)**
   b. What are FIFO's? With a neat diagram explain the client server communicating FIFO's. **(10 Marks)**

8 a. Explain the following socket programming functions with their prototype:
      i) Socket; ii) Connect; iii) Listen; iv) Accept. **(10 Marks)**
   b. Explain the different client server connection functions, with example program. **(10 Marks)**

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