DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
M.TECH - Semester –I (CE)
SUBJECT: Advanced Programming in UNIX

INSTRUCTIONS:
1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

Examination	**: 1ˢᵗ Sessional**	**Seat No.**	**:**
Date	**: 12/09/2018**	**Day**	**:Wednesday**
Time	**: 9:00 a.m. to 10:15 a.m.**	**Max. Marks**	**: 36**

Q.1 Do as directed:
 (a) Diagrammatize architecture of UNIX operating system.   **[02]**
 (b) Explain difference between Linux redirection and pipe features.   **[02]**
 (c) Give example usage of Primitive System Data Types mentioned below: **[02]**
  - **ino_t**
  - **mode_t**
 (d) Diagrammatize difference between C library functions and system calls.   **[02]**
 (e) Give example of atomic operation and its necessity.   **[02]**
 (f) Write full form of the keywords with a line of description: **[02]**
  POSIX, BSD, GNU, I/O

Q:2 Attempt the following.
 (a) Write prototype and demonstrate application of below API optionally with code: **[04]**
  (I) fork
  (II) exec
 (b) Develop a C program using UNIX APIs (preferably system calls) to list the content   **[08]**
  recursively of directory/directories (support sense of repeat factor) pathname(s) provided
  as command line argument(s). Perform appropriate error handling with accurate error
  messages.

Q:3 Attempt the following.
 (a) Write prototype and demonstrate application of below API optionally with code: **[04]**
  (I) lseek
  (II) sysconf
 (b) Develop a C program using UNIX APIs (preferably system calls) to copy a file containing   **[08]**
  holes without writing the bytes of 0 to the output file. The source and destination file
  pathnames are provided as command line arguments. Perform appropriate error handling
  with accurate error messages.

*****