JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2024

B.Tech-IV Semester (CSE/IT)

COURSE CODE(CREDITS): 18B11CI411 (3)   MAX. MARKS: 15

COURSE NAME: Operating Systems

COURSE INSTRUCTORS: Dr. Hari Singh, Dr. Deepak Gupta, Dr. Anita, and Mr. Praveen

Modi   MAX. TIME: 1 Hour

Note: (a)All questions are compulsory.

(b)Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for

solving problems

Q1. Why operating system is known to be interrupt driven? How does an interrupt differ from a trap? Support your answer with suitable examples.   [CO1][03 Marks]

Q2.(a) Provide at least two differences between a system call and a function call.   [CO1][02 Marks]

(b) Describe (i) Boot Loader and (ii) Sleep System Call.   [CO1][01 Mark]

(c) List the system calls (at least two) which are present in file manipulation service. [CO1][01 Mark]

Q3. How many processes are generated by the following program code? Draw a tree showing the generation of parent-child processes. What is the output produced?   [CO2] [04 Marks]

```
int main()
{
    if (fork() && (!fork())) {
        if (fork() || fork()) {
            fork();
        }
    }
    printf("2\n");
    return 0;
}
```

Q4. (a) Write the steps to switch the processor between the threads if one thread makes a system call?

(b) What are the advantages of implementing threads in user space?   [CO2][2x2=04 Marks]