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| **HINDUSTAN INSTITUTE OF TECHNOLOGY AND SCIENCE** | | | | |
| **CSB4218 - OPERATING SYSTEMS** | | | | |
| **I INTERNAL EXAMINATION** | | | | |
| **DEPARTMENT** | **COMPUTER SCIENCE AND ENGINEERING** | **SEMESTER** | IV | |
| **SECTION** | **A,B,C,D** | **DATE** | 13/02/2020 | |
| **DURATION** | **90 Minutes** | **MAX MARKS** | 50 | |
| **QUESTIONS** | | | | |
| **QUESTION NO.** | **PART-A (5 X 2 MARKS = 10 MARKS)** | **CO** | **BTL** | **Marks** |
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| 1 | What does the CPU do when there is no user program to run? | 1 | 1 | 2 |
| 2 | Do timesharing differ from multi programming? If so, How? | 1 | 1 | 2 |
| 3 | Mention the data fields associated with process control block. | 1 | 1 | 2 |
| 4 | Infer the context switch. | 1 | 2 | 2 |
| 5 | List out the Benefits of Multithreaded Programming. | 2 | 1 | 2 |
|  | | | | |
| **QUESTION NO.** | **PART B ( 5 X 6 MARKS = 30 MARKS)** | **CO** | **BTL** | **Marks** |
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| 6 | Explain the various types of System calls with an example for each. | 1 | 2 | 6 |
| 7 | Draw the state diagram of a process from- its creation to termination, including All transitions, and briefly elaborates every state and every transition. | 1 | 2 | 6 |
| 8 | Summarize the function of system calls with regard to operating system management functions | 1 | 2 | 6 |
| 9 | Elaborate the inter-process communication mechanisms that supported in a typical operating system . | 1 | 2 | 6 |
| 10 | Describe the multi-threading models in detail and also classify it’s types. | 2 | 3 | 6 |
|  | | | | |
| **QUESTION NO.** | **PART C - ( 1 X10 MARKS = 10 MARKS)** | **CO** | **BTL** | **Marks** |
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|  | | | | |
| 11 | 1. Differentiate preemptive from non-preemptive scheduling. 2. Apply the FCFS scheduling algorithm with Gantt Chart for the processes given and calculate the average waiting time and average turn around time.   Process Arrival Time Burst Time  P1 0 10  P2 1 6  P3 2 12  P4 3 15 | 2 | 3 | 10 |