CS341
Spring 2022
MSE

Indian Institute of Technology Patna

Department of Computer Science and Engg

CS341: Operating Systems

Total marks: 100

Instructions

Attempt all the questions. Marks are given in [ ].

Submit by date: 25 February 2022/ 10:30 AM

Hand Written Copy only.   It is expected that unique solutions from all candidates and similar/copied answers will be awarded zero marks for all candidates involved

Submissions must be uploaded to the following link in a single pdf file; Scan copy of the handwritten answer sheet (use roll number as the filename);

 https://u.pcloud.com/#page=puplink&code=GQbkZ9Kr4T2gejNy8d5bPJYlGhuioTTmy

Make appropriate assumption if required. Do not send any response to the personal emails of the instructor. If you do so, your paper will not be evaluated.

Assignments:

A1: Write a critical analysis report on the history and underlying concepts of operating system development. Use tables for comparison, focus on all Early Operating Systems, Growth of Operating System Concepts , Concurrency and Parallelism, Multiprogramming. Elaborate with example**.**

                                                                                                                 [20 Points]

CS341
Spring 2022
MSE

A2: Discuss Semaphore based solution for classical problems of Synchronization (eg. 1. Bounded-buffer (or Producer-Consumer) Problem, 2. Dining-Philosophers Problem, 3. Readers and Writers Problem, 4. Sleeping Barber Problem etc)

[20 Points]

A3: Extend A2 with Monitor based Solution **[25 Points]**

A4: Write a critical analysis report on deadlocks and methods for their detection, prevention and recovery in modern operating systems **[30 Points]**