National Institute of Technology Patna

End Semester Examination

Subject code: CS5469

Subject: Microprocessor and Microcontrollers

Date of Exam: 20-December-2021

Time: 10:AM to 12:00 Noon

Time for uploading of scanned answer sheet on MS team: 12:00 Noon to 12:30 PM

Total Marks: 40

Instructions:

1. Answer all questions.
2. Each question carries equal marks (so, divide your time accordingly).
3. Timings should be strictly followed.
4. Answer sheets must only be uploaded through MS team.

Questions:

1. Draw and explain the architecture block diagram of 8085 (Note: all blocks must be discussed in brief; pin diagram is not needed). (Block diagram-5 marks, Explaination-5 marks)

2. Explain any 5 data transfer instructions, any 5 arithmetic instructions, any 5 logic instructions and any 5 branching instructions of 8085 with suitable examples (2.5x4=10 Marks)

3. Draw a block diagram showing the architecture of 8086. Explain its register organization in detail (5 marks for block diagram + 5 marks for register organization=10 Marks)

4. Give the steps involved to program 8051 for transmitting and receiving serial data. Write an assembly language program to transfer a character "H" serially at a baud rate of 9600 (Assume that TH1 must be loaded with #FDH). Also, write an assembly language program to receive bytes serially with a baud rate of 9600 (8-bit data and 1 stop bit) and simultaneously send the received bytes to port-1. (Steps-2 marks, transmission program-4 marks, receiver program-4 marks)