CS230-Lite DLDCA Quiz-4, Fri 08 Nov 2024, 8:30am-9:15am, Max. Marks: 10

Name: _____ Roll number: _____ House: _____

General instructions

- Write only in the space provided. Answer briefly but crisply (not lengthily or loosely).
- You are allowed to refer to your own hand-written notes only.
- Write neatly and clearly. Up to **+2 HP** for neat handwriting, neat/crisp answers.
- Answers generally have to be (briefly) explained. State any necessary assumptions.

1. Short answer questions:

   a) [1 mark] Give an example of spatial locality in data memory access

   b) [2 marks] Distinguish between the write-back scheme versus the write-through scheme in L1 cache

   c) [2 marks] How does VM help address the challenge of program relocation? Explain using a suitable diagram

d) [2 marks] Name any one advantage and any one disadvantage of fully-associative caches

e) [1 mark] In the default page-table scheme, what does a page-table store?

f) [1 mark] In a system using VM, what is the role of the TLB?

g) [1 mark] In a system using VM, what is a page-fault?

2. **Optional, for House Points (up to 5HP):** Starting Mar 2020, for about 2 years, schools and colleges were shut in India. Illiteracy, poverty, child labour, child marriage increased as a result of the lockdown. It was portrayed as though Covid was a danger of unforeseen magnitude for children. What does a data comparison say? There were almost no children/young affected by the virus. In comparison, what is the estimated number of children dying every single day in India, due to poverty, malnutrition, and related illnesses?