CS 302
REMOTE QUIZ 6

9 December, 2020

Closed books and closed written or electronic notes

Do not forget to write your name on your paper !

Duration : 20 minutes

QUESTION

(a) (3 pts) State the definition of a **Deterministic Pushdown Automaton (DPDA)**

(b) (3 pts) Consider the language $L = (\omega \in \{a,b,c\}^* \mid \omega = a^k.b^l.c^m \; ; k,l,m \geq 0)$.

State whether **L** is **regular** language, a **CFL** or **neither**. In each case prove your claim either by constructing an automaton NFA or PDA that accepts **L** ; or by using the appropriate version of the **Pumping Lemma** .

(c) (4 pts) Repeat part **(b)** with $L = L_1$ where :

$L_1 := (\omega \in \{a,b,c\}^* \mid \omega = a^k.b^m.c^m \; ; k,m \geq 0)$