# CSE331 Assignment 3

## Section 1

Deadline: 26th November, 2022 11:59 pm
Total Marks: 30
*[Submit your assignment here]*

Draw PDAs for the following language. Assume $\Sigma = \{0, 1\}$

1)

[7 marks]

$$L = \{ww^{\mathcal{R}} : w \in \{0,1\}^*\}$$

Here, $w^{\mathcal{R}}$ means the reverse of the string $w$.

2)

[8 marks]

$$L = \{w \in \{0,1\}^* : w = uv, \text{ where } u \in L_1,\ v \in L_2, \text{ and } |u| = |v|\}$$

Describe what your automata is doing in a few sentences.

Draw PDAs for the following language. Assume $\Sigma = \{a, b, c, d, e, f\}$ [5x3 = 15 marks]

1. $a^n b^m c^k d^k e^m f^n$ ; where n, m, k ≥0. [3 marks] Assume $\Sigma = \{a, b, c, d, e, f\}$
2. $a^n b^m c^m d^k e^k f^n$ ; n≥0, m≥1, k≥2. [3 marks] Assume $\Sigma = \{a, b, c, d, e, f\}$
3. $a^m b^n c^p$ ; $n > m + p$ [3 marks] Assume $\Sigma = \{a, b, c\}$
4. $a^m b^n$ ; m>2n and m,n≥1 [3 marks] Assume $\Sigma = \{a, b\}$
5. $a^n$ b $a^m$ b $a^{n+m}$ ; m,n ≥1 [3 mark] Assume $\Sigma = \{a, b\}$