CSE 301 Jul 2021, Class Test 4, Time: 20 minutes

Q1. [14 Points] Evaluate the sum

$$S = \sum_{0 \le x < n} x^2 H_x$$

where,

$$H_x = \sum_{i=1}^{x} \frac{1}{i} \quad \text{for } x > 0$$

$$H_0 = 0$$

Q2. [3 Points] Evaluate the sum

$$S = \sum_{0 \le k \le n} (-1)^{n-k}$$

Q3. [3 Points] Evaluate the sum

$$S = \sum_{j,k} [1 \le j \le k \le n]$$