

PART A : THEORY

a) BEGIN rule:

$$\frac{}{\Gamma, \Gamma \vdash \text{BEGIN}() : \text{UNIT}} \quad (\text{EMPTY BEGIN})$$

$$\frac{C, \Gamma \vdash e_1, \dots, e_n : \tau_1, \dots, \tau_n}{C, \Gamma \vdash \text{BEGIN}(e_1, \dots, e_n) : \tau_n} \quad (\text{BEGIN})$$

b) LAMBDA rule:

$$\frac{1 \leq i \leq n \quad \alpha_i \text{ are fresh \& distinct}}{C, \Gamma \vdash \{x_i \mapsto \alpha_i\} \vdash e : \tau}$$

$$\frac{C, \Gamma \vdash \{x_i \mapsto \alpha_i\} \vdash e : \tau}{C, \Gamma \vdash \text{LAMBDA}(\langle x_1, \dots, x_n \rangle, e) : \alpha_1 x_1 \dots x_n \alpha_n \rightarrow \tau} \quad (\text{LAMBDA})$$