

3.d

$$\|f - p_3\| = \max_{0 \leq x \leq 3} |f(x) - p_3(x)|$$

$$\max_{0 \leq x \leq 3} |f(x) - p_3(x)| = \max_{0 \leq x \leq 3} \left| e^x - (0.8455x^3 - 1.060x^2 + 1.933x + 1) \right|$$

$$= \left| e^{(3)} - (0.8455(3)^3 - 1.060(3)^2 + 1.933(3) + 1) \right|$$

$$\approx \left| 20.085537 - 20.0875 \right|$$

$$= \boxed{0.001963}$$