

Answer Key: Civil Engineering Licensure Exam – Mock Exam (Day 26: Engineering Contracts and Specifications)

February 24, 2025

Answer Key

Section A: Multiple Choice Solutions

1. A cost-plus contract: **(b) Cost-plus contract**
2. Engineering specifications refer to: **(b) The detailed technical requirements of materials, workmanship, and execution**
3. A bid bond guarantees: **(b) That the contractor will enter into the contract if awarded the project**
4. Purpose of a performance bond: **(a) Ensure that the contractor completes the project as per contract requirements**
5. Liquidated damages refer to: **(a) The penalty charged to the contractor for project delays**

Section B: Problem-Solving Solutions

1. Liquidated damages:

$$\begin{aligned}\text{Penalty} &= \text{Days Delayed} \times \text{Daily Liquidated Damages} \\ &= 20 \times 2,000 = 40,000\end{aligned}$$

2. Bid bond amount:

$$\begin{aligned}\text{Bid Bond} &= \text{Bid Amount} \times \text{Percentage} \\ &= 750,000 \times 0.05 = 37,500\end{aligned}$$

3. Total cost of concrete work:

$$\begin{aligned}\text{Total Cost} &= \text{Unit Price} \times \text{Total Volume} \\ &= 120 \times 1,000 = 120,000\end{aligned}$$

4. Performance bond amount:

$$\begin{aligned}\text{Performance Bond} &= \text{Contract Value} \times \text{Percentage} \\ &= 2,500,000 \times 0.10 = 250,000\end{aligned}$$

5. Total amount in a cost-plus contract:

$$\begin{aligned}\text{Total Payment} &= \text{Project Cost} + \text{Fixed Fee} \\ &= 1,800,000 + (1,800,000 \times 0.12) \\ &= 1,800,000 + 216,000 = 2,016,000\end{aligned}$$