

## Errata

Principles and Practice of Engineering: Architectural Engineering Sample Questions and Solutions

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**Pg. 17**, line 11 “2. 1-8 kVA heating load at a lagging, PF = .92.” should read  
“2. 1-80 kVA heating load at a lagging, PF = .92.”

question 17, answer b “21.5” should read “24.13”

**Pg. 24**, question 26, answer c “0.045” should read “0.050”

**Pg. 40**, solution 17 should be replaced with the following:

$$\frac{746W}{HP} \times \frac{10HP}{.90} = \frac{746 \times 10}{.90 \times .85} = 9752 \text{ VA}$$

$$4 \times 9752 = 39,008 \text{ VA}$$

$$\text{Theta} = \cos^{-1} (.85) = 31.79^\circ$$

1. KW =  $4 \times 8.289 = 33.16$   
KVAR =  $39.008 \times \sin 31.79 = 20.55$   
Theta =  $\cos^{-1} (.92) = 23.07^\circ$
2. KW =  $80 \times \cos 23.07^\circ = 73.60 \text{ KW}$   
kVAR =  $80 \times \sin 23.07^\circ = 31.35 \text{ KVAR (Lag)}$
3. KW =  $3 \times 10 = 30 \text{ kW}$   
KVAR = 0

$$\text{Sum kW} = 33.16 + 73.60 + 30 = 136.76$$

$$\text{Theta} = \cos^{-1} (.98) = 11.48^\circ$$

$$\text{kVAR @ .98} = 136.76 \times \tan 11.48 = 27.77 \text{ kVAR}$$

$$\text{CAP kVAR} = [(20.55 + 31.35) - 27.77] = 24.13 \text{ (Leading)}$$

Correct Answer is: b

**Pg. 42**, lines 12 and 13

$$R = .9375 \times 23.20 + .0625 \times 6.70 = 22.17$$

$$U\text{-value} = 1/R \quad 1/22.17 = .0451 \quad \text{Say .045}$$

Should be replaced with:

$$U = \frac{1}{R} = .9375 \left( \frac{1}{23.20} \right) + .0625 \left( \frac{1}{6.70} \right) = .0497 \quad \text{Say .050}$$

**Pg. 48**, line 3 “A = 2.92 in<sup>2</sup>” should read “A = 2.72 in<sup>2</sup>”.

line 5 “Pall = 7.01 × 2.92 = 20.5<sup>k</sup> N.G.” should read  
“Pall = 7.01 × 2.72 = 19.09<sup>k</sup> N.G.”

**Pg. 85**, line 15 “NFPA 13 (1999) 4.2.2.1” should read  
“NFPA 13 (1999) 5.2.2.1.”