

THE HONG KONG POLYTECHNIC UNIVERSITY
HONG KONG COMMUNITY COLLEGE

Subject Title : Electrical Services in Buildings **Subject Code** : CCN2267

Session : Semester One, 2017/18

Numerical Answers

Question B1

(a)

| Item | Running kW | Running kVA | Starting kW | Starting kVA |
|------|------------|-------------|-------------|--------------|
| 1 | 63.16 | 72.60 | 127.04 | 254.08 |
| 2 | 42.11 | 49.54 | 74.30 | 148.61 |
| 3 | 25.00 | 27.78 | 25.00 | 27.78 |

(b) 165.9416 kW with 188.5700 kVA

Question B2

\$12026.02

Question B3

- (a) 0.000873
(b) 199.9167 lux

Question B5

- (a) 13.2 W/m²
(b) 3
(c) 3
(d) 3.888 A

Question C1

- (a) 62.0140 A
(b) 80 A
(c) 35mm² with 135 A
(d) 85 mm²
(e) 797.3904 A with 3 s

Question C2

- (a) 0.1056 Ω, 0.0611 Ω
(b) 1634.7211 A, 1059.0990A
(c) 1170.1436 A, 699.8544 A

(d) 1023.4171A, 681.1755 A

Question C3

- (a) 36.7766 s
- (b) 10.4414%
- (c) 133.9256 s, 458.7621 persons

Question C4

- (a) 1.7143
- (b) 8
- (c) 2.925 m
- (d) 2.6667 m along length, 2 m along width
- (e) 25.2056