

THE HONG KONG POLYTECHNIC UNIVERSITY
HONG KONG COMMUNITY COLLEGE

Subject Title : Basic Electricity and Electronics **Subject Code** : CCN2246

Session : Semester One, 2018/19

Numerical Answers

Question A1

- (a) 4V
- (b) -4A
- (c) 50V

Question A2

- (a) 10.105Ω
- (b) 0.0125W

Question A3

- (c) $I_{ab} = 0.3828 + j0.4864 \text{ A}$, $I_{bc} = 0.2299 - j0.575 \text{ A}$, $I_{ca} = -0.6127 + j0.0883 \text{ A}$
- (d) $I_a = 0.9954 + j0.3982 \text{ A}$, $I_b = -0.1529 - j1.0612 \text{ A}$, $I_c = -0.8425 + j0.663 \text{ A}$

Question A4

- (b) -12.7917+2.8638 V

Question A5

- (a) 1A
- (b) 0.455A
- (c) 1.533V

Question A6

- (c) 40 N.m
- (d) 65.239V

Question B1

- (a) 7.155V, 6.732V, -2.958V
- (b) $P_{2A} = -13.465\text{W}$, $P_{4A} = -40.451\text{W}$
- (c) 1.75W

Question B2

- (a) 3
- (b) 3
- (c) $Z_{3H} = j15\Omega$, $Z_{50mF} = -j4\Omega$, $Z_{20mF} = -j10\Omega$
- (d) $-4.1379 - j0.3448$ A, $-5.6897 - j1.7241$ A, $-0.6897 - j1.7241$ A
- (e) $62.9310 - j30.1724$ VA
- (f) -34.483 VAR