

THE HONG KONG POLYTECHNIC UNIVERSITY  
HONG KONG COMMUNITY COLLEGE

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**Subject Title** : Introduction to Flight Performance    **Subject Code** : CCN2299

**Session** : Semester One, 2018/19

**Numerical Answers**

<p><b>Question B3</b></p> <p>-25 ° C, 20,200ft</p>
<p><b>Question B4</b></p> <p>359.55km/h</p>
<p><b>Question A3</b></p> <p>(a) <math>I_{ab} = 0.3828 + j0.4864 \text{ A}</math>, <math>I_{bc} = 0.2299 - j0.575 \text{ A}</math>, <math>I_{ca} = -0.6127 + j0.0883 \text{ A}</math> (b) <math>I_a = 0.9954 + j0.3982 \text{ A}</math>, <math>I_b = -0.1529 - j1.0612 \text{ A}</math>, <math>I_c = -0.8425 + j0.663 \text{ A}</math></p>
<p><b>Question B5</b></p> <p>(b) <math>-12.7917 + j2.8638 \text{ V}</math></p>
<p><b>Question B6</b></p> <p>Aspect ratio = 11.11, Wing loading = <math>7015.39 \text{ N/m}^2</math></p>
<p><b>Question C1</b></p> <p>(a)(i) 4534.74m (a)(ii) <math>1.62^\circ</math> per second (c) <math>n = 2</math></p>
<p><b>Question C2</b></p> <p>(b)(i) 230.59 m/s (b)(ii) 0.68</p>
<p><b>Question C3</b></p> <p>(a)(i) 886.21 kN (a)(ii) 2757.46 kN (b)(i) <math>7.13^\circ</math></p>

**Question C4**

- (a)(i) +1.15,  $16^0$
- (a)(ii) +1.78,  $28^0$
- (b)(i) - 3531.57N
- (b)(ii) 1572.5 kW
- (c) 0.26