

THE HONG KONG POLYTECHNIC UNIVERSITY
HONG KONG COMMUNITY COLLEGE

Subject Title : Mechanical Services

Subject Code : CCN3146

Session : Semester Two, 2014/15

Numerical Answers

Question B1

- (a) 0.80, 12.2 °C, 12.9032 kg/s
- (b) 56.4 kJ/kg, 25.6 °C
- (c) 308.3865 kW

Question B2

42.8169%, 24.7247%, 26.1952%, 41.7978%

Question B3

- (a) 2.45 m³/s, 680.5556 Pa, 37.50%, 4.4463 kW
- (b)(i) 0.8944 l/min, 37.1988 mH
- (b)(ii) 1.0690 l/min, 45.4263 mH

Question B4

- (a)(i) 400 mm, 315 mm
- (a)(ii) 7.05 Pa, 5.4 Pa

Question C1

- (b) 3.0765
- (c) 154 kJ/kg
- (d) 49.9431%
- (e) 1430.3711 kW

Question C2

- (a) 0.0058 m³/s
- (b) 12.2 mH, 79177.3490
- (c) 48.3214 kPa, 272.5201 kPa
- (d) 4.188 mH, 4.6709 mH
- (e) 3.4829 m

Question C3

- (a) 0.8
- (b) 13 °C, 222.8164 l/s
- (c) 62%
- (d) 315 mm, 200 mm, 200 mm, 200 mm
- (e) 12.0505 Pa, 12.6101 Pa
- (f) 47.6101 Pa
- (g) 0.0002

Question C4

- (a) 85.9091 persons
- (b) 13
- (c) 139.4122 s, 34.8531 s, 89.5186 persons
- (d) 107.0645 s, 53.5323 s, 129.3806 s, 64.6903 s, 106.5124 persons