

THE HONG KONG POLYTECHNIC UNIVERSITY
HONG KONG COMMUNITY COLLEGE

Subject Title : Applied Statistical Methods

Subject Code : CCN2237

Session : Semester One, 2015/16

Numerical Answers

Question 1

- (a) $\hat{y} \approx 3 + 0.6857x$
- (b) 0.6996
- (d)(ii) (5.4351, 7.1649)

Question 2

- (a)(ii) $\mathbf{a}^T \hat{\boldsymbol{\beta}} \sim N\left(\mathbf{a}^T \boldsymbol{\beta}, \sigma^2 \mathbf{a}^T (X^T X)^{-1} \mathbf{a}\right)$
- (b)(i) $\hat{\beta}_0 \approx 13.6352$, $\hat{\beta}_1 \approx 12.6252$ and $\hat{\beta}_2 \approx 2.5767$
- (b)(ii) 0.7832

Question 3

- (a) 45.62
- (c) (33.3693, 37.0625)

Question 4

- (c)(ii) (0.2611, 1.2236)

Question 5

- (d) (2.5763, 11.2735)
- (e)(i) 2.0469
- (e)(ii) 4.5852