

THE HONG KONG POLYTECHNIC UNIVERSITY  
HONG KONG COMMUNITY COLLEGE

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**Subject Title** : Quality Engineering

**Subject Code** : CCN3141

**Session** : Semester One, 2013/14

**Numerical Answers**

**Question B1**

(b)  $\alpha = 0.3\%$ ,  $\beta = 59.4\%$

(d)(ii) 0.3754, 0.08343

**Question B2**

(a) 0.0293

(c) UCL=0.0424, LCL=0.0163

(f) 0.0281, UCL=0.0409, LCL=0.0153

**Question B3**

(b) mean=4.195, median=4.20, SD=0.3766

(c)  $a_3 = -0.2463$ ,  $a_4 = 2.0633$

**Question B4**

(b)(i) mean=0.8832, range=0.23, SD=0.09888

(b)(ii) for mean: UCL=1.0159, LCL=0.7505; for range: UCL=0.4863, LCL=0

**Question B5**

(a)(i)  $C_p = 0.07627$ ,  $C_{pk} = 0.0456$