

THE HONG KONG POLYTECHNIC UNIVERSITY  
HONG KONG COMMUNITY COLLEGE

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**Subject Title** : Computer Networking

**Subject Code** : CCN2238

**Session** : Semester Two, 2016/17

**Numerical Answers**

**Question B1**

- (a)(i) 1101
- (a)(ii) 101000010000111101
- (b) The characters are HW.

**Question B2**

- (b) 0111 1110 1111 10101 1111 10111 0110 0111 1100 0111 1110
- (c) 21.64
- (d) 777.4 kbps

**Question B3**

- (a) TWICE

**Question B4**

- (a) 79 seconds
- (b) 3.3384 seconds

**Question B5**

- (a) 119
- (b) 17854
- (c) 32 bytes
- (d)  $(0012 A984)_{16}$

**Question C1**

- (a) 0.045s
- (b) 0.1126s

**Question C2**

(a) 5 segments have to be generated.

	<b>ID</b>	<b>Flag</b>	<b>Fragment Offset</b>
First segment	532	1	0
Second segment	532	1	247
Last segment	532	0	988

(c) 9 segments

	<b>Fragment Offset in IP</b>	<b>Size of Ethernet frames</b>
First segment	0	1518 bytes
Second segment	185	534 bytes
Last segment	988	1314 bytes

**Question C3**

(a) The number of addresses in the largest subblock, which requires 230 addresses.

The first address in this block is **117.151.70.0/24**;

The last address is **117.151.70.255/24**.

The number of addresses in the 2<sup>nd</sup> subblock, which requires 60 addresses.

The first address in this block is **117.151.71.0/26**;

The last address is **117.151.71.63/26**.

The number of addresses in the 3<sup>rd</sup> subblock, which requires 20 addresses.

The first address in this block is **117.151.71.64/27**;

The last address is **117.151.71.95/27**.