

LUNDS TEKNISKA HÖGSKOLA
Institutionen för elektro- och informationsteknik
Exam in Datakommunikation, 2008-10-22

Short answers to some questions

1. a-b) See text book

	Net	Hops	Router
c)	A	4	X
	B	5	X
	D	4	Y
	E	3	X
	F	2	X
	G	5	X
	H	4	Z

d-f) See text book

2a,b,d) See text book

c) Not possible (Exercise 6)

3. See text book

4. a) i) True ii) True iii) True iv) True v) True
vi) True vii) False viii) True ix) True x) True

c) 011

d) We need a guard band between each channel pairs

b,e) See text book

5.a,c,e) See text book

b) \24

	Original	MTU 1	MTU 2	MTU 3
d) ID	343	343	343	343
Length	950	512	512	70
Offset	0	0	58	116
More	0	1	1	0

6. a-b) See text book

c)

$$\#frames = \frac{8 \cdot 10^6}{(256 - 80)} \quad t_{trans-frame} = \frac{256}{1 \cdot 10^6} \quad t_{trans-ACK} = \frac{88}{1 \cdot 10^6} \quad t_{prop} = \frac{2 \cdot 10^3}{2 \cdot 10^8}$$

$$\text{One frame trip} = FT = t_{trans-frame} + t_{prop} + t_{trans-ACK} + t_{prop}$$

$$i) \text{Total time} = \#frames * FT = 16,54s \quad ii) \frac{8 \cdot 10^6 bps}{16,54s} = 483kbps \quad iii) \frac{483kbps}{1Mbps} = 48,3\%$$

d) Does not exist