End of Chapter 13 Exercises

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1. The ethernet frame described in text, what are the maximum number of bytes and the maximum number of bytes

Answer) A standard Ethernet frame consists of

- Preamble and start frame delimiter - needs 8bytes.
- Destination address - needs 6 bytes
- Source address - needs 6 bytes.
- Data length - needs 2bytes
- Data - 46 bytes minimum - 1500 bytes maximum
- Cyclic redundancy check - needs 4bytes.

∴ The standard Ethernet frame needs

Minimum = 72 bytes

Maximum = 1500 bytes

2. Suppose a higher layer application wants to send a file 12MB in size across an Ethernet LAN. How many Ethernet frames are needed? Assume the largest Ethernet payload is 1500bytes.

Answer) Each ethernet frame holds 1500bytes

File size 12MB

12MB : 12, 582, 912 bytes

The number of frames needed = $\frac{\text{file size}}{\text{frame size}}$

$= \frac{12,582,912}{1500}$

$= 8388.6$

∴ The frames needed are 8389