Notes COMP0023 Exam

(1) a). PHY might just get corrected by PHY chip.

due to Forward Error Correction IEEE 802.3 ep

dropped due to large amount of errors

uncorrectable.

Error Control Encoding

b). Ethernet CRC32. detects errors in frame.

limited → can detect certain errors (could still miss)

→ can correct single-bit errors

c) IP checksum

v4 detect errors in headers.

Switches / intermediate machine

might introduce errors

v6 no checksum at all

L2 has checksum

L4 has checksum UDP mandatory now

that includes L3.

Inter domain routing.

Tier 1. ISP.

Tier 2

!

AS relationship.

Customer - provider.

smaller AS → pay for connectivity

Basic

big AS paid.

Alternative: peering

Inter-Domain Routing Goals.

1. Scalability
   - router track networks / IP prefixes
   - assign IP hierarchically.
     > 70k ASes and 800k prefixes

2. policies ! not performance.
   - routing - commercial agreements
   - cooperate under competition

Intra-Domain not apporiate.

RV - LS cant scale / not support for policies.

↓ flooding

loops, slow convergence

shortest path X

Commercial agreements

BGP! Computes path (hides info).
of multiple ASes.

- ASes exchange high-level info.
  AS-level paths.
- Scalability & supports the Internet's business model.
- each AS impl. autonomy routing choices

Each AS selects one among the routes it receives for the same destination.
locally the best.

Route selection based on advertiser..
Customer > peer > provider.

routes of customers. / ISP own address are advertised.