Computer Networking Past Paper

0. Network and Architecture

Switching

- y2016p5q6 (a)
  - Packet switching and Circuit switching

1. Physical Layer

- y2014p5q5 (b)
  - Queueing

- y2013p5q4 (a)
  - Coding

2. Data Link Layer

- y2013p5q4 (b)
  - CSMA/CD, CSMA/CA

- y2021p5q6 (b)
  - CDMA, CSMA/CA, VLAN

Switches

- y2021p5q4
  - Topology, Forwarding table, Troubleshooting

- y2023p5q3 (a)(i,ii)
  - Spanning Tree

3. Network Layer

- y2020p5q5
  - fault finding

- y2020p5q6
  - DHCP, ARP

- y2021p5q5
  - ICMP, topology, ping,trace route, whole-system debugging

- y2021p5q6 (a)
  - IPv6

- y2023p5q3 (b)
  - IP Troubleshooting

4. Transport Layer

Router

- y2023p5q3 (a)(iii,iv)
  - Link-state vs Distance Vector protocol

Reliable Data Transfer

- y2011p5q5
  - FSM

UDP(QUIC), TCP

- y2022p5q3 (a,b), y2009p5q7 (a)
  - Flow-control and Congestion-control

- y2019p5q4
  - TCP, ARQ; QUIC

- y2022p5q2
  - TCP; QUIC

- y2016p5q6 (b)
  - TCP retransmission timeout
  - Exponential Average (EWMA filter), Jacobson/Karels Algorithm

Network buffers

- y2013p5q4 (c)
  - B = 2T × C, assumptions
  - Reference: Buffer Size Rule, Stanford, Note on Buffer size BDP

5. Application Layer

- y2014p5q5 (a)
  - DNS

- y2013p5q5
  - Cache, CDN

- y2022p5q3 (c,d)
  - Cache