



Name _____ Class _____ Date _____

AFTER THIS WORKSHEET YOU CAN

✓ Ethernet frame fields ✓ MAC address table learning ✓ Switch forwarding decisions ✓ Duplex/speed



Section A • Concept Check

• BEGINNER

4 × 1 = 4

- 1 Switches build their MAC table from:

☐ A. source MACs of incoming frames

☐ B. destination IPs ☐ C. DNS ☐ D. user input
- 2 An unknown destination MAC causes:

☐ A. flooding out all other ports ☐ B. drop

☐ C. reboot ☐ D. NAT
- 3 Full duplex means:

☐ A. send and receive simultaneously

☐ B. one direction ☐ C. half speed

☐ D. no collisions ever existed
- 4 Store-and-forward switching checks:

☐ A. the FCS before forwarding ☐ B. only 6 bytes

☐ C. nothing ☐ D. cable color



Section B • Problem Solving

• INTERMEDIATE

2 + 3×3 = 11

- 5 A switch forwards a known unicast out _____ port.
- 6 MAC table entries age _____ if unused.
- 7 Frame arrives: source AAA, dest BBB (unknown). What happens?

- 8 Why did full duplex kill collisions?

- 9 Store-and-forward vs cut-through?



Section C • Challenge

• CHALLENGE

5

- 10 What breaks with a duplex mismatch?

🧐 Reflection — the most useful thing I learned: _____

A ___/4 B ___/11 C ___/5 Total ___/20

Teacher's Signature

Parent's Signature

⌂ ANSWER KEY — FOLD OR CUT BEFORE HANDING OUT

1-A 2-A 3-A 4-A | 5 one/the specific 6 out/expire 7 = Learn AAA on that port; flood the frame to all other ports 8 = Separate send/receive paths - no shared medium contention 9 = Full-

frame + error check vs faster but may forward bad frames | 10 = Late collisions/CRC errors,
terrible performance