



Name _____ Class _____ Date _____

AFTER THIS WORKSHEET YOU CAN

✓ Layer 2 purpose ✓ Frames and MAC addressing ✓ Topologies ✓ Media access control

Section A • Concept Check • BEGINNER 4 × 1 = 4 _____

- 1** Layer 2 addressing uses:

☐ A. MAC addresses ☐ B. IP addresses

☐ C. ports ☐ D. URLs
- 2** The data link layer packages packets into:

☐ A. frames ☐ B. segments ☐ C. bits only

☐ D. files
- 3** The two L2 sublayers are LLC and:

☐ A. MAC ☐ B. NAT ☐ C. UDP ☐ D. SSH
- 4** Frame check sequence (FCS) detects:

☐ A. errors ☐ B. viruses ☐ C. loops ☐ D. users

Section B • Problem Solving • INTERMEDIATE 2 + 3×3 = 11 _____

- 5** A MAC address is _____ bits long.
- 6** Frames have a header, data and a _____.
- 7** Why do we need MAC when we have IP?
- _____
- 8** What does the FCS trailer do?
- _____
- 9** Star vs mesh topology tradeoff?
- _____

Section C • Challenge • CHALLENGE 5 _____

- 10** What changes in a frame across each router hop?
- _____

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 48 6 trailer/FCS 7 = Local delivery on the segment is by MAC; IP routes between networks 8 = CRC check - receiver drops corrupted frames 9 = Star: cheap/simple; mesh: redundant but costly | 10 = Source/destination MACs are rewritten; IPs stay