MODULE 1 Review

1. **Router storage & stored info:** ROM => Bootstrap, Flash/RAM => Stored/Running IOS
   RAM => Running Configuration NVRAM => Startup Configuration (sections 1.1.1 + CCNA-1)
2. **Encapsulation**: Add MAC-Info, sending frame. **De-encapsulation**: remove MAC info, receiving frame)
3. **Switch boot sequence** (1.1.1) – in simpler form… Just RECOGNIZE (multiple choice/match)
   - **i)** POST – Performs CPU and memory checks
   - **ii)** Boot loader (in ROM) – Performs CPU initialization and locates/loads O/S
   - **iii)** O/S loads startup configuration in RAM
4. ***Boot system*** command => sets the *BOOT environment* variable, which contains boot sequence info.
5. **O/S Info** **RECOGNIZE** an IOS image file: *C2600-universalk9_npe-m.SPA.174-2.M1.bin*
6. **Switch mode button and LED indicators** (**simpler – only yellow parts**):
   - *System LED* => On and operating
   - *Mode button* => Switches between Port-Operation Status, Port-Duplex mode and Port-Speed info
   - *Port status* => Port LEDs indicate whether there is a link connection, the port is in operation (send/receive) or there is a link fault
   - *Duplex* => Port LEDs indicate whether a port is in FULL or HALF duplex mode
   - *Speed* => Port LEDs indicate which speed the port ios operating at (Off: 10Mbps, Green: 100Mbps, Blink => 1 Gbps
7. **Recovering from a System Crash:** Just RECOGNIZE which prompt appears => **switch:**
8. **SVI Configuration for Remote Management**:

   See section 1.1.6 STEPS

   - **i)** Configure SVI interface with IP address (IPv4 only) – remember to activate the SVI interface!
   - **ii)** Configure default gateway – remember to EXIT the interface command mode!
   - **iii)** Save the configuration!

   SVI configuration Review

   ```
   int VLAN x
   ip address ….
   no shutdown
   exit
   ip default-gateway      // NO subnet mask needed!
   ```

9. **Port configuration – RECOGNIZE commands only**
   - **A)** Configure switch ports with DUPLEX mode or Speed (See commands in section 1.2.2 !!)
   - **B)** Configure switch ports with **mdix auto** (purpose) – with *speed* and *duplex* ALSO set to AUTO !!

10. **Basic Router configuration**
    - **a.** Interface configuration with IP address…
    - **b.** Activate (enable) the interface)
    - **c.** Save configuration

MODULE 1 Review

11. Verification (*show*) commands and what each does:

b. **show ip int brief** -OR- **show ipv6 int brief**
c. **show interfaces** -OR- **show int fa0/11**
d. **show version**
e. **show flash**
f. **show run** -OR- **show start**
g. **show mac-address**
h. **show ip route** -OR- **show ipv6 route**

12. Network Access Layer issues – Types of errors: See **section 1.2.6** for descriptions

SIMPLER:

- **Runts** – Packets that are smaller than the minimum packet size (Ethernet: < 64 bytes) => discarded
- **Giants** – Packets that exceed the maximum packet size (Ethernet: > 1,518 bytes) => discarded
- **CRC errors** – generated when the calculated checksum is not the same as the checksum received (occur due to bad cables/connectors, or due to EMI/RFI interference)
- Collisions – Number of retransmissions due to an Ethernet collision.

13. Remote Access Operation and Configuration

Telnet v.s. ***SSH*** operation => What's the difference?

Configure SSH (STEPS):

1. Verify ssh support => **show ip ssh**
2. Configure ip domain => example: **ip domain-name cisco.com**
3. Generate RSA key pairs => **crypto key generate rsa** (specify number of modulus bits – meaning?)
4. Configure user authentication => **username** *username* **secret** *password*
5. Configure vty lines => as usual EXCEPT ***transport input ssh*** and ***login local***.

SIMPLER: ONLY RECOGNIZE STEPS and whether any is missing, is wrong or is in incorrect order

EXAMPLE:

```
S1(config)# line vty 0 15
S1(config-line)# transport input ssh      // NEW, for SSH
S1(config-line)# login local              // Points to local user, specified in step vi
S1(config-line)# exit
S1(config)# ip ssh version 2              // Optional, for SSH version 2
```

14. Command History Feature

SIMPLE: RECOGNIZE commands and know the meaning…

```
R1# show history                  // Displays previous commands…
R1# terminal history size 100     // sets the number of commands to remember…
```