

**Question 1: Multiple Choice Questions** (please choose ONLY ONE answer)

1. The model that specifies the relationship between network element, agent, and manager is
  - a) Information Model
  - b) Organization Model**
  - c) Communication Model
  - d) Centralized Model
  
2. For SNMP, defines the general rules for naming objects, defining object types, and showing how to encode objects and values.
  - a) MIB
  - b) BER
  - c) SMI**
  - d) none of the above
  
3. The layer of the OSI model can use the trailer of the frame for error detection.
  - a) physical
  - b) data link**
  - c) transport
  - d) presentation
  
4. A pairing of an SNMP community with an SNMP community profile is defined as SNMP \_\_\_\_\_ policy.
  - a) peer-to-peer
  - b) match
  - c) access**
  - d) none of these
  
5. The three separate functions in the Dispatcher subsystem are accomplished using
  - a) Transport Mapper
  - b) Message Dispatcher
  - c) PDU Dispatcher
  - d) All the above**
  
6. Traffic monitoring tools include
  - a) host and dig tools
  - b) netstat and arp.
  - c) traceroute
  - d) None of the above**
  
7. Which tool is best suitable for measuring connectivity?
  - a) ifconfig.
  - b) wireshark
  - c) ping**
  - d) none of the above
  
8. The SNMP Engine comprises
  - a) Dispatcher
  - b) Security Subsystem
  - c) Access control subsystem.
  - d) All the above**

9. The OBJECT-TYPE macro is used to define
- a) manager
  - b) **managed object**
  - c) service
  - d) None of the above
10. In MPLS, routing of a data packet is done based on an MPLS header which specifies the FEC (forward equivalent classes). This FEC is assigned at
- a) **the ingress router**
  - b) the egress router
  - c) at any IP router
  - d) none of the above
11. LANE corresponds to
- a) LAN Ethernet to designate a local area network using Ethernet technology.
  - b) **LAN Emulation to allow interfacing between ATM network and traditional LAN**
  - c) LAN Emulation to allow interfacing between TCP/IP network and traditional LAN
  - d) None of the above.
12. What are the three types of wireless technologies?
- a) **PAN, WLAN, and access networks**
  - b) PAN, LAN, WiFi
  - c) WLAN, PAN, mobile
  - d) WiFi, mobile, and satellite
13. Among the characteristics of outdoor propagation
- a) Attenuation.
  - b) Dispersion.
  - c) Fading.
  - d) **All of the above.**
14. In Telecommunication management Network (TMN) system, the role of the manager is to issue commands and requests to the agent. These commands and requests are known as
- a) notifications
  - b) feedbacks
  - c) **operations**
  - d) Acknowledgements
15. Among the characteristics of wired media that adversely affect broadband propagation are:
- a) Attenuation.
  - b) Phase dispersion
  - c) Time dispersion.
  - d) **All of the above**
16. In TMN terminology, the switching systems, circuits, terminals, etc.,

which comprise a telecommunications network, are known as

- a) Operations support systems (OSS)
  - b) Network Elements (NEs)**
  - c) Mediation devices (MDs)
  - d) Q Adapter (QA)
17. In small-scale fading, there is
- a) Slow rate of change
  - b) Rapid rate of change**
  - c) Fixed rate of change
  - d) None of the above
18. UPnP stands for
- a) Uniform Plug and Play
  - b) Universal Plug and Play**
  - c) Unidirectional Plug and Play
  - d) Unintended Plug and Play
19. Enterprise WLAN consist of
- a) AP
  - b) STAs
  - c) AP as a bridge
  - d) All of the above**
20. Which of the following will NOT be a component of a home network?
- a) ATU-R
  - b) Cable Modem or wireless modem
  - c) ATM switch**
  - d) Residential gateway

**Question 2: True/False** [Write TRUE or FALSE in a provided place]

True	Connectionless mode network service (CLNS) communicates with a SNMPv2 manager over the UDP transport layer.	1
True	Network management is the process to operating, monitoring, and controlling the network to ensure it works as intended and provides value to its users.	2
False	SNMP network management architecture specifies five transport function protocols.	3
True	The MRTG is a tool that monitors traffic load on network links.	4
True	The SNMP Engine ID is made up of OCTET String.	5
False	Bing dumps traffic on a network.	6

True	SDH is a standard technology for synchronous data transmission on optical media. It is the international equivalent of SONET.	7
False	The fading phenomenon in wireless has only a spatial dependency.	8
False	The fourth layer of TMN deals with network or system management.	9
False	Bluetooth protocol architecture uses frequency division multiplexing.	10

5

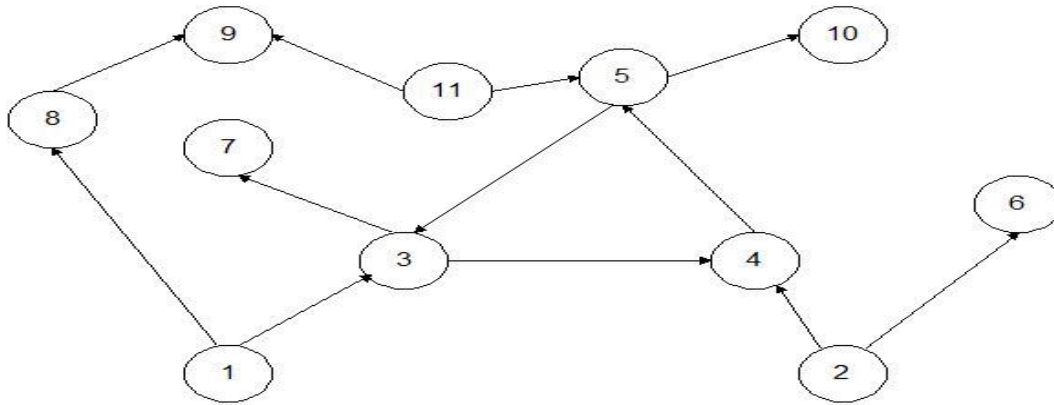
### Question 3: Fill in the Blanks

1. **Trace Route** is one among the route monitoring tool
2. RMON1 specifically performs numerous functions in **Data Link** layer.
3. **Ping** is Traffic Monitoring Tool used for measuring round trip packet loss.
4. **SMI** is concerned only with object type.
5. The organization model describes the components of network management and their **relationships**.
6. The access characteristic of the Internet is a function of the **security** function of the OSI functional model.
7. For **ATM** protocol, all packets take the same path and arrive in the same sequence in virtual circuit.
8. A kind of propagation transmit in all directions uniformly is called **Isotropic Propagation**.
9. The **lowest layer** is the network element layer comprising network elements such as switches, routers, bridges and transmission facilities.
10. OSGi is a platform for **residential** gateway

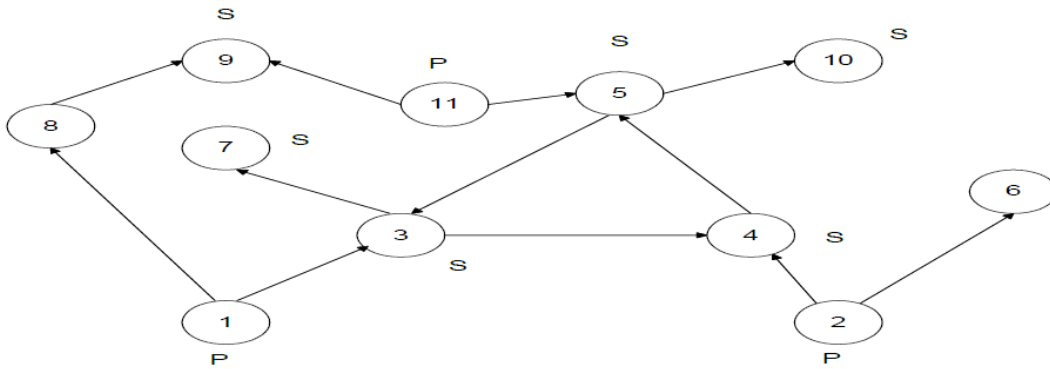
### Hints:

<b>Trace Route</b>	Physical	<b>Isotropic Propagation.</b>	<b>residential</b>	SNMP
privacy	RequestID	gateway	<b>ATM</b>	<b>Ping</b>
<b>lowest layer</b>	<b>Data Link</b>	OFDM	SNMPv2	<b>security</b>
<b>relationships</b>	RMON	<b>SMI</b>	RMON2	ATM

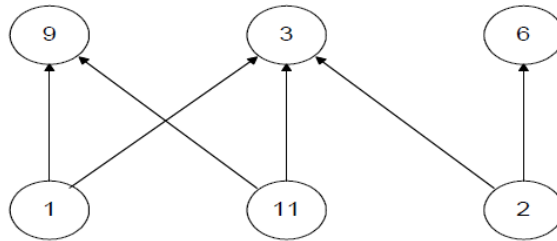
**Question 4: From the figure below calculate the P-S Causality Graph and Correlation Graph and Matrix**



**Solution:**



**Figure 11.24(b) Problem-Symptom Causality Graph**



**Figure 11.25 Correlation Graph for Figure 11.24**

	P1	P2	P11
S3	1	1	1
S6	0	1	0
S9	1	0	1

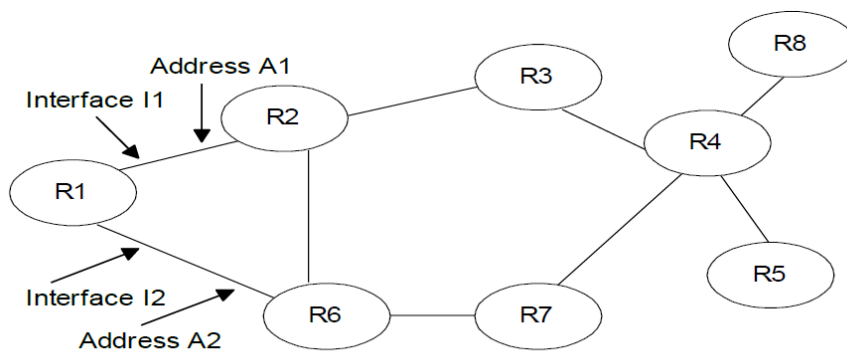
**Question 5: What is fading?**

**Solution:**

- Large-scale fading or Shadow fading
  - Slow spatial rate compared to wavelength
  - Slow rate of change
- Small-scale fading
  - Spatial dimension comparable to wavelength
  - Rapid rate of change

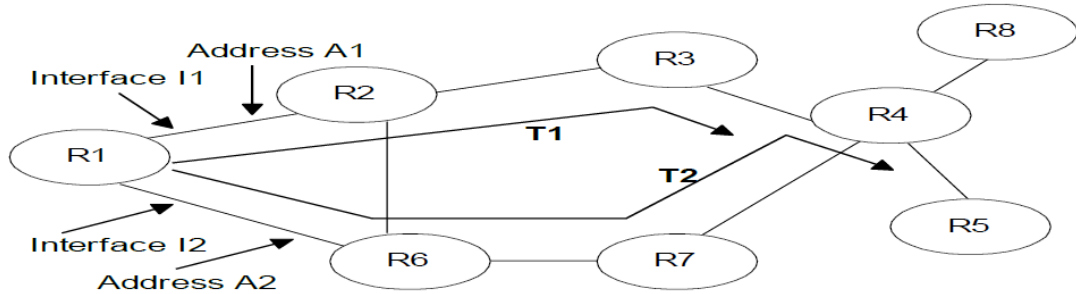
**Question 6:**

a) From the following figure draw the routing table for R2 without Tunnel.



Metric	Next Hop	Output Interface	Dest
1	2.2.2.2	I1	2.2.2.2
2	2.2.2.2	I1	3.3.3.3
3	2.2.2.2	I1	4.4.4.4
3	6.6.6.6	I2	
4	2.2.2.2	I1	5.5.5.5
4	6.6.6.6	I2	
1	6.6.6.6	I2	6.6.6.6
2	6.6.6.6	I2	7.7.7.7
4	2.2.2.2	I1	8.8.8.8
4	6.6.6.6	I2	

b) From the following figure draw the routing table for R2 with Tunnel.



Metric	Next Hop	0 Intf	Dest
1	2.2.2.2	1 1	2.2.2.2
2	2.2.2.2	1 1	3.3.3.3
3 /1	4.4.4.4	T1	4.4.4.4
4/1	5.5.5.5	T2	5.5.5.5
1	6.6.6.6	1 2	6.6.6.6
2	6.6.6.6	1 2	7.7.7.7
4/2	4.4.4.4	T1	8.8.8.8