**IT 340 MULTIPLE CHOICE QUESTIONS**

**Week 2 - Chapter 1 and 2**

1. How many layers does the OSI Reference model have?

a) 5

b) 4

c) 6

d) 7

e) None of the above

Ans. d) 7

2. Which layer of the OSI Reference Model has two sub layers?

a) Physical layer

b) Data links layer

c) Session layer

d) Application layer

e) None of the above

Ans. b)

3. Select the correct statement from the following:

a) TCP/IP is a protocol of DECNET

b) TCP/IP is a single protocol

c) TCP/IP is a connectionless protocol

d) TCP/IP is a connection-oriented suite of protocols

e) All of the above are true

Ans. d)

4. Select the false statement from the following:

a) a vLAN is based on switched hub technology

b) a vLAN enables stations to be assigned physically

c) a vLAN enables stations to be assigned administratively

d) a vLAN is not restricted by the physical configuration of a LAN

e) All of the above are true

Ans. b)

5. Which of the following is a challenge for the management of corporate networks, select the best choice

a) Analysis of networks problems

b) Networks reliability

c) Rapid advance of network technology

d) Networks security

e) All of above

Ans. e)

**Week 3 – Chapter 3**

6. Which of the following is not associated with a Network Management Standard?

a) TMN

b) IEEE

c) ODI/CMIP

d) SNMP/Internet

e) ACM

Ans. e)

7. Which of the following is not a Network management Model?

a) Logical model

b) Organization model

c) Information model

d) Functional model

e) Communication model

Ans. a)

8. Select the incorrect statement from the following:

a) Network Management functional models include configuration and fault management

b) Network Management functional models include performance management and security management

c) OSI network Management functional models include accounting applications

d) SLA management is one of the OSI functional models

e) OSI functional models address user application

Ans. d) is incorrect

**Week 4 – Chapter 4 & 5**

9. Which of the following is not an element of a SNMP Organization Model?

a) Manager

b) Agent

c) Router

d) Remote monitor

e) a, b, d

Ans. e)

10. Which of the following is not a functional area of SNMPv1?

a) Test

b) Fault

c) Performance

d) Security

e) Configuration

Ans. a)

**Week 5 – Chapter 6 & 7**

11. Select the items that mention a function of SNMPv3.

a) Generate commands and

b) Respond to commands

c) Notification originator and notification receiver

d) Proxy forwarder

e) a, b, c, d

Ans. e), they all are functions of SNMPv3

**Week 6 – Chapter 8**

12. Advantages of RMON include which of the following. Select the best answer.

a) Local monitoring which is more reliable

b) More continuous monitoring

c) Higher network availability

d) Greater productivity for network administrators

e) All of the above

Ans. e)

13. Which of the following is not a key feature of RMON1?

a) Traffic data to and from a host

b) RMON1 captures the owner of a RMON device

c) RMON1 captures the status of a monitoring entry

d) RMON1 has functions for gathering statistics, history, alarms, information about hosts on the network conversations between hosts, filtering, packet capture, and generation and notification of events

e) Order of the stations in ring network

Ans. a)

14. Which feature(s) is (are) in RMON2 but not in RMON1?

a) Monitors the upper layers

b) Conformance function group

c) Conformance specifications

d) a, b, c

e) a, c

Ans. d)

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**Week 7 – Chapter 9**

15. Basic system network management utilities include all of the following except:

a) Status monitoring tools

b) Traffic monitoring tools

c) Route monitoring tools

d) Security monitoring tools

e) Protocol analyzers

Ans. d) is not a basic tool

16. What are the types of network measures that can be collected? Circle each correct item.

a) Load in octets at the data link layer for a LAN

b) Number of packets for an IP network

c) Distribution of protocols at each of the OSI layers

d) Number of errors using RMON1 and RMON2 statistics groups

e) Throughput

Ans. a, b, c, d

17. What is an MRTG? Circle the answers that are correct.

a) Multi Router traffic group tool

b) Tool for monitoring traffic load on network links

c) Tool that reads the SNMP traffic counters on network routers

d) Multi Router Traffic Grapher

e) Tool that provides a visual display of traffic load

Ans. b, c, d, e

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18. In the SNMP model, MIBs contains information on network elements. What are some measures that can be obtained from an MIB? Circle all the items that are correct.

a) Throughput of a link in bits/second , packets /second

b) Throughput of a server in transactions /second

c) Users in requests/hour

d) Volume in number of bytes transferred, packets transferred, sent, received

e) Number of errors

Ans. All are correct

19. An NMS is a software system that supports the management of a large network. What are key quality design attributes that such a system should have? Circle those that should be required.

a) Scalability

b) Complexity

c) Reliability

d) Security

e) Availability

Ans. a, c, d, e

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**Week 9 – Chapter 10 & 11**

20. Why is TMN important? Select the best answer.

a) It includes the management of the network, service, and business

b) a, c

c) It addresses the interoperability of businesses and networks

d) It implements OSI network management principles

e) a, b, c, d

Ans. b)

21. The conceptual model of TMN consists of:

Select the best item.

a) NMS, operations system, and data network

b) NMS, operation, operations system, and telecom services

c) NMS, operations systems, TMN control, networks, network services, and customers

d) a, b, c

e) None of the above

Ans. c)

22. Name the services provided by TMN. Select the best answer.

a) Business and service management

b) Network and network element management

c) a and b

d) Configuration, fault, performance, security, and accounting management.

Ans. c)

23. In the following list of statements on TMN standards, circle those that are not true.

a) TMN standards were developed by ITU-T.

b) TMN standards are based on the OSI framework.

c) SNMP is a derivative of OSI management technology.

d) There are no standards for TMN Management Services and Functions.

e) TMN standards apply to managed, operations systems, and interfaces between them.

Ans. c and d are not true.

**Week 10 – Chapter 12**

24. Which of the following statements are true for ATM and ATM management?

a) ATM applies only to computer networks.

b) ATM applies only to telecommunication networks.

c) ATM technology addresses virtual paths and circuits, packet size, multiplexing, and integrated services.

d) ILMI is a specification for ATM management.

e) SNMP is not used for ATM network management.

Ans. c and d are true

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25. Which of the following correctly compare ATM, MPLS, and MAN network technologies?

a) MPLS is a WAN technology that combines ATM and IP networks.

b) ATM pertains to automated teller machines and metropolitan area networks.

c) MAN feeder networks include optical transport and are used for WAN.

d) MPLS is a WAN technology.

e) MPLS comprises ATM and MAN networks.

Ans. a, c, d, e are correct. b is incorrect.

­­­­26. WAN technologies include leased lines, SONET, Frame Relay, ATM, and Metro Ethernet. Each statement that follows names a key feature of one of these technologies. Which statement is not correct.

a) ATM and SONET are protocols used in WAN.

b) Frame relay improves WAN performance for voice.

c) MAN is a short haul networks, whereas, WAN is long haul.

d) SONET/SDH multiplexes synchronous and asynchronous signals.

e) SONET is used to extend WAN to customer premises.

Ans. All are correct.

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**Week 11 – Chapter 13**

27. What is the difference between DSL and ADSL?

a) Upstream and downstream frequencies are different in ADSL, but are the same for DSL.

b) Only ADSL is used for Broadband access.

c) DSL goes from the MSO to the CM at the customer site.

d) DSL and ADSL go from the central office to the CM via twisted wire pair loop.

e) ADSL uses cable; DSL uses twisted wire.

Ans. a)

28. What criteria should be used to select a WAN service provider? Circle the items that are applicable.

a) Cost

b) Customer service

c) Broadband access technology

d) Cable modem technology

e) Availability of ADSL

Ans. All are applicable.

29. Pertaining to broadband access, which of the following statements is not correct.

a) Cable and xDSL are widely deployed.

b) Wireless and PON trail in deployment.

c) PON is an optical fiber technology and has low cost.

d) Wireless has limitations of data rate and range.

e) xDSL includes ADSL, HDSL, and VDSL.

Ans. c) is not correct.

**Week 12 – Chapter 14**

30. Of the following which is (are) not advantage(s) of wireless access for Broadband?

a) Ease of installation.

b) Low cost

c) Scalable

d) Provides last-mile coverage, i.e. coverage for rural areas

e) High bandwidth

Ans. e) is not an advantage, because wireless has bandwidth limitations

31. Of the following list, which item is not a disadvantage of wireless for Broadband access?

a) Bandwidth

b) Deployment

c) Fading

d) Security

e) Data loss

Ans. b)

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32. What of the following are applicable to testing a BWAN design?

a) Propagation models

b) Fading data

c) Network management standards

d) Iftable objects

e) MIB structure

Ans. all are applicable.

33. What can cause fading?

a) Absorption

b) Scattering

c) Time

d) Temperature

e) Interference

Ans. all, except d)

34. What are the three types of wireless technologies?

a) PAN, WLAN, and access networks

b) PAN, LAN, WiFi

c) GPRS, CDMA, MAN

d) WLAN, PAN, mobile

e) WiFi, mobile, and satellite

Ans. a)

35. Why isn’t satellite communication used more extensively for BWA? Select the applicable statements from the following list.

a) Transmission is unidirectional.

b) The frequency band that is used affected by rain.

c) Geostationary earth orbit satellites are used.

d) Transmission speed is limited to about 40-60 kbps for uplink and 500 kbps downlink.

e) Antennas are used.

Ans. a, b, d

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**Week 13 – Chapter 15**

36. 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

e) Customer low, medium, and high speed devices

Ans. c

37. Which of the following statements is false for wired home networks?

a) TCP/IP is used as the protocol for wired transport network and transport layers.

b) Lower-layer protocols used are X-10, CEBus Standard , Home Plug and Play.

c) USB is used for multimedia.

d) IEEE 1394 is used for lower layers for audio, video, and IP data transmission.

e) IEEE 802.3 is used for Ethernet.

Ans. c)

38. Which of the following statements is false for wireless home networks?

a) TCP/IP is used for the transport and network layers.

b) IrDA specifications are used for infrared long range communication for lower-layer.

c) WLAN IEEE 802 is used for WiFi.

d) Bluetooth IEEE 802.15.1 is used for PAN wireless.

e) UWB is starting to be used commercially for PAN wireless.

Ans. b

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**Week 14 – Chapter 16**

39. A NM technology should satisfy user and operator needs and be customer – service centered. Which of the following features is not desirable for a NM technology?

a) Information modeling

b) Organization modeling

c) Communication modeling

d) Dependence on special hardware

e) Performance modeling

Ans. e

40. SNMP management has major operator limitations. Circle those limitations in the following list that apply to SNMP management.

a) SNMP is too simple for today’s complex devices.

b) SNMP is not OO-oriented.

c) Does not meet the configuration management needs of large scale service providers.

d) Too expensive

e) No central configuration database

Ans. all but d

41. OMG CORBA is a framework for building OO distributed applications. Which following statement statements do not apply to CORBA?

a) CORBA is more applicable to service and business management layers than to network and system management.

b) It supports a client-server based organization model.

c) Managed objects can be addressed and searched.

d) Supports event-driven management.

e) IT supports OO information modeling but has bulk data retrieval and scalability limitations.

Ans. They all apply.

42. XML has features that make it valuable for developing an XML-based Network Manager. Select the one from the following that is not true.

a) Has strong data formatting and interpretation features.

b) XML can represent management information and XML schemas can represent information structures.

c) Scalable, even at the element level.

d) Has a style sheet language for transforming XML documents, for formatting, and for identifying parts of a document.

e) Has configuration management options, and is SOAP and WSDL compatible.

Ans. c is not true.

43. Each technology has some limitation for network management. Which statement in the following is not correct.

a) The OSI information model is not complex.

b) SNMP has few operations for management and support for configuration management.

c) CORBA has scalability issues for element management.

d) XML has scalability issues for element management.

e) CORBA and XML have certain performance issues.

Ans. a

Test Bank

1. Modern telecommunications networks mostly carry analog data. (False)
2. TCP/IP is one protocol of DECNet. (False)
3. TCP/IP is a suite of protocols, and the suite forms the foundation of the modern Internet. (True)
4. The Network layer exists in the TCP/IP model but NOT in the OSI Model. (False)
5. The OSI Model is a seven-layer model to depict network communications. (True)
6. Ethernet is the most popular network topology in use today. (False)
7. Ethernet is the most popular networking standard in use today. (True)
8. “Full-Duplex” means bi-directional communication at the same time. (True)
9. A hub is a more advanced networking device than a switch. (False)
10. Switches are multi-port bridges. (True)
11. The organization model describes the components of network management and their relationships. (True)
12. Network domains cannot be managed locally. (False)
13. The access characteristic of the Internet is a part of the security function of the OSI functional model. (True)
14. ASN.1 is a formal language developed jointly by CCITT and ISO. (True)
15. The universal class is the least commonly used class. (False)
16. The IAB was founded in 1982 by a group of researchers working on IPX/SPX. (False)
17. RFC documents may be found in public libraries. (True)
18. SNMP network management architecture specifies five transport function protocols. (False)
19. SMI is concerned only with object type. (True)
20. One category of data types is ‘defined types.’ (True)
21. An SNMP protocol entity is received on the host’s port 161, including the SNMP trap. (False)
22. SNMP traps use port 162. (True)
23. The maximum length of the protocol in SNMPv1 is 512 bytes. (False)
24. The maximum length of the protocol in SNMP v1 is 484 bytes. (True)
25. A managed object is a scalar variable. (True)
26. SNMPv2 is the first to encrypt its traffic. (False)
27. SNMPv2 was released in 1996. (True)
28. SMIv2 is divided into three parts. (True)
29. SMIv2 is divided into five parts. (False)
30. In SNMPv2, the SNMP layer is mapped over multiple transport domains. (True)
31. SNMPv3 is the first to incorporate encryption. (True)
32. RFC 3410 provides an overview of SNMPv3 Framework. (True)
33. The SNMP engine ID is a fixed length of 20 octets in SNMPv3. (False)
34. SNMPv3 formally defines four types of applications. (False)
35. The SNMPv3 applications are described in RFC 2273. (True)
36. RMON is short for remote monitoring. (True)
37. RMON2 addresses parameters associated with Layer 2 of the OSI Model. (False)
38. RMON1 addresses parameters associated with Layer 3 of the OSI Model. (False)
39. RMON performs numerous functions at the data link layer. (True)
40. Conformance specifications were added to RMON2. (True)
41. The command ‘ifconfig’ is useful in troubleshooting Windows network connectivity problems. (False)
42. The command ‘ping’ can be found in both Linux and Windows operating systems. (True)
43. Wireshark (the modern version of Ethereal) can be used in both Linux and Windows to capture and analyze packets. (True)
44. The command ‘tracert’ is useful to troubleshoot Linux connective problems. (False)
45. The command ‘ipconfig’ is useful to troubleshoot Linux network connectivity problems. (False)
46. TMN is based on OSI management technology. (True)
47. SNMP is a derivative of OSI management technology. (False)
48. Trunk test systems are used to monitor connectivity in trunk transmission systems. (False)
49. TMN standards were developed by ITU-T. (True)
50. The TeleManagement Forum is a discussion board for telecom CEOs. (False)
51. The fourth layer of TMN deals with network or system management. (False)
52. An institution is a business that provides either products or services. (True)
53. The business health of an institution depends on well-maintained accounting management. (True)
54. Performance statistics are used to optimize networks. (True)
55. The coding technique comprises three phases. (False)
56. There are four types of information technology services. (False)
57. The management of a broadband network is not as complex as the management of a computer network. (False)
58. There are five important concepts comprising ATM technology. (True)
59. In terms of networking, ATM stands for Automatic Teller Machine. (False)
60. The security framework for ATM networks is described in the ATM Forum document af-sec-0096.000. (True)
61. There are three types of customer accessing the broadband network: corporations with a campus-wide network, Internet service providers, and residential or small business customers. (True)
62. Broadband access technology is still an emerging field, with three modes of access. (False)
63. CM technology is based on existing cable television technology. (True)
64. HFC uses tree topology, and upstream and downstream transmissions are handled the same. (False)
65. The third category of interfaces is the security system interface. (True)
66. Important concepts to consider for outdoor propagation of wireless are line-of-sight, reflection, and diffraction. (True)
67. Distance from source does not affect wireless signal strength. (False)
68. The fading phenomenon in wireless has only a spatial dependency. (False)
69. Local multipoint distribution service is a last-mile broadband access network. (True)
70. LMDS and MMDS have adapted the DOCSIS standard from the cable modem world. (True)
71. Home networking technologies are well-established and have been around for decades. (False)
72. Modern home networks rely on IPX/SPX. (False)
73. IEEE 1394, or FireWire, was originally developed by Apple. (True)
74. WiFi is based on the IEEE 802.11 standard. (True)
75. WEP is far more secure than WPA2. (False)
76. RFC 3535 discusses existing shortcomings with SNMP. (True)
77. Rollback is not a needed feature. (False)
78. CIM is an approach to the management of enterprise systems, software, users, and networks. (True)
79. CORBA-based network management is based on a centralized network management architecture. (False)
80. XML is ideally suited to meet the challenge of application integration. (True)