

# REDEEMER'S UNIVERSITY

PMB 230 Ede, Osun State, Nigeria



FACULTY OF NATURAL SCIENCES

DEPARTMENT OF COMPUTER SCIENCE

Course Code/Course Title: CMP 227/Computer Networks

Course Unit: (2 Units)

2020/2021 SESSION, FIRST SEMESTER EXAMINATIONS

Instructions: Section A is Compulsory. Attempt any other **Two (2)** Questions in Section B

Time Allowed: 2 Hours

**SECTION A: Attempt ALL Questions in this section.**

1. \_\_\_\_\_ is the acronym for a set of communication guidelines that allow software to transmit an electronic mail over the internet?  
A. SMTP B. FTP C. HTTP D. PPP
2. The reliable delivery service provided by the transport layer has four aspects except?  
A. Flow Control B. Error control C. Sequence control D. Duplication control
3. Which of these is a Peer-to-Peer Architectures in which the peers with higher bandwidth and network connectivity are at a higher priority and are called as group leaders/super nodes?  
A. Client-Server B. Query Flooding C. Centralized Directory D. Exploiting Heterogeneity
4. \_\_\_\_\_ refers to handling the mobile user/device who changes point of attachment to network?  
A. Mobile network B. Access point C. Mobility D. Wireless Access
5. Which topology orients all the devices on a network along a single cable running in a single direction from one end of the network to the other?  
A. Ring topology B. Tree topology C. Bus topology D. Mesh topology
6. Which of the following represents the correct colour code for TIA/EIA 568B?  
A. GW-G OW-BI BIW-O BrW-Br B. BrW-Br GW-G OW-BI BIW-O  
C. BrW-Br OW-O GW-BI BIW-G D. OW-O GW-BI BIW-G BrW-Br
7. Which IP Address sub-class has 8 bits long Network ID and 24 bits long Host ID?  
A. Class A B. Class B C. Class C D. Class D
8. The upper layer of the OSI model mainly deals with the application related issues, and they are implemented only in the software. **TRUE OR FALSE**
9. \_\_\_\_\_ is the Network Terminal Protocol, which provides remote login over the network?  
A. FTP B. TELNET C. HTTP D. TCP/IP
10. \_\_\_\_\_ is used for assigning IP addresses to computers in a network?  
A. HTTP B. POP C. FTP D. DHCP

11. HTTP messages are stored and forwarded while SMTP messages are delivered immediately.  
**TRUE OR FALSE**
12. The most common access method in the Bus topology is \_\_\_\_\_?  
A. Collision Avoidance Access B. Carrier Sense Multiple Access C. Token Passing D. CSMA Access Detection
13. A network host is an end system that has two or more links to the network.  
**TRUE OR FALSE**
14. \_\_\_\_\_ is referred to as the Physical address of a device?  
A. IP Address B. MAC Address C. Port Address D. DNS Address
15. Which of these is a protocol in the data link layer?  
A. File Transfer Protocol B. Hypertext Transfer Protocol C. Point-to-Point Protocol  
D. Transmission Control Protocol
16. Which of the following basically divides a network into segments?  
A. Network Bridge B. Network Hub C. Network Switch D. Router
17. \_\_\_\_\_ is used to discover host's Internet address when it knows only its physical address?  
A. Address Resolution Protocol B. Reserve Address Resolution Protocol C. Internet Control Message Protocol  
D. Internet Protocol
18. Which of the following is a feature of Unshielded Twisted Pair?  
A. Eliminates crosstalk B. They operate in half-duplex  
C. Very expensive D. Susceptible to external interference
19. Which layer in the OSI reference model offers dialog control services?  
A. Transport layer B. Session layer C. Presentation layer D. Application layer
20. Which layer in the OSI reference model acts as a translator between the application and the network?  
A. Session layer B. Presentation layer C. Network Layer D. Data-link layer
21. All layers identify their counterparts by means of \_\_\_\_\_?  
A. Layer Name B. Layer token C. Protocol and service name  
D. Encapsulation header and tail
22. Which of the layers of TCP/IP model defines the protocols for the logical transmission of packets over the network?  
A. Network Access layer B. Internet layer C. Application layer D. Transport layer
23. Which one of the following is a guided transmission medium?  
A. Radiowaves B. Optical fibre cable C. Light Transmission D. Electromagnetic spectrum
24. \_\_\_\_\_ is a communication channel that can mediate the propagation of signals for the purposes of telecommunication?

25. Crossover cables are used to connect the following pair except \_\_\_\_\_?
- A. Hub to hub    B. Switch to hub    C. Router to router    D. Switch to router
26. \_\_\_\_\_ is the result of network congestion, timing drift and route changes?
27. One of the following is not a key element to consider when determining which Topology is Best for your Network.
- A. Length of cable needed    B. Cable type    C. Scalability    D. Architecture
28. A service that translates the domain name into IP addresses refers to \_\_\_\_\_.
29. A collection of interconnected networks is called \_\_\_\_\_.
30. In layered communication system, one layer of a host deals with the task done by or to be done by an upper layer on the remote host. **TRUE OR FALSE**

**SECTION B (THEORY): Attempt ONLY TWO Questions in this section**

***Question One***

- a. State any five Roles of the Intermediary Devices in a computer network. (5 Marks)
- b. Clearly state one responsibility each of Layer 3, Layer 4, Layer 5, Layer 6, and Layer 7 of the OSI reference Model. (Note: Write out the name of each layer). (5 Marks)
- c. Mention one protocol that resides on each of the five layers mentioned in (b) above. (5 Marks)

***Question Two***

- a. Mention and briefly describe any two hardware devices that operate in each of the following layers of OSI Model: Network layer; Data link layer and Physical layer. (6 Marks)
- b. Mention the two parts of an IP Address. Hence, give the size (in bits) of each part in a Class C IP address. (4 Marks)
- c. List five categories of services that are provided by Transport layer protocols. (5 Marks)

***Question Three***

- a. What is Encapsulation? With the aid of diagram, fully describe the Data Encapsulation process in the four layers of TCP/IP Model. (5 Marks)
- b. What are Routing and Routing Algorithm? Describe the three types of Routing known to you. (5 Marks)
- c. Distinguish between "Protocol" and "Service". Briefly summarize any three principles that were applied to arrive at the seven layers of OSI reference Model. (5 Marks)

***Question Four***

- a. What is peer-to-peer network architecture? State any two advantages of Peer-to-peer network and any two advantages of Client/Server network architecture. (5 Marks)
- b. What is Network Topology? With the aid of diagrams, write short notes to describe Bus topology and Ring topology. (5 Marks)
- c. Briefly describe the five parameters that can be used to quantitatively measure Quality of Service. (5 Marks)