b. Explain in detail functioning of OSPF routing protocol with neat diagram.

31. a. Explain in detail about CRC with example.

(OR)

b. Discuss CSMA/CD with a neat diagram.

32. a. What are the three major classes of guided media with a neat diagram?

(OR)

b. Explain in detail about architecture and layers of Bluetooth.

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Reg. No.														

B.Tech. DEGREE EXAMINATION, DECEMBER 2018

1st to 6th Semester

15IT303J – COMPUTER NETWORKS

(For the candidates admitted during the academic year 2015-2016 to 2017-2018)

Note:

(i) **Part - A** should be answered in OMR sheet within first 45 minutes and OMR sheet should be handed over to hall invigilator at the end of 45th minute.

(ii) **Part - B** and **Part - C** should be answered in answer booklet.

Time: Three Hours Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer **ALL** Questions

1. Which topology requires multipoint connection?
   (A) Bus (B) Mesh
   (C) Star (D) Ring

2. Television broadcast is an example of what transmission
   (A) Simplex (B) Half-duplex
   (C) Full duplex (D) Automatic

3. As data packet moves from lower to upper layer, headers are
   (A) Added (B) Subtracted
   (C) Rearranged (D) Modified

4. Which layer changes bits to electromagnetic signals?
   (A) Physical (B) Data link
   (C) Transport (D) None

5. Subnet mask in class B has nineteen 1's. How many subnets does it define?
   (A) 8 (B) 32
   (C) 64 (D) 128

6. Identify the class of IP address 191.1.2.3
   (A) Class A (B) Class B
   (C) Class C (D) Class D

7. Given IP address is 18.250.31.14 and subnet mask is 255.240.0.0. What is subnet address?
   (A) 18.0.0.14 (B) 18.31.0.14
   (C) 18.240.0.0 (D) 18.9.0.14

8. In distance vector routing, each router receives information directly from
   (A) Every router on network (B) Every router less than two units away
   (C) Table stored by network costs (D) Neighours

9. Routing table contains what
   (A) Destination network ID (B) Next hop
   (C) Router ID (D) Destination network ID, next hop, router ID

10. Dijkstra's algorithm is used to
    (A) Create LSA's (B) Flood internet
    (C) Create routing tables (D) Link state database

11. RIP is based on what algorithm
    (A) Distance vector (B) Link state
    (C) Path vector (D) Dijkstra's

12. Which error detection uses one's complement?
    (A) CRC (B) Check sum
    (C) Simple parity (D) 2-D parity

13. Which error detection can detect burst error?
    (A) CRC (B) Parity check
    (C) 2-D parity check (D) VRC

14. In GO-Back-N ARQ, if frames 4, 5 and 6 are received successfully, sender would send ACK what
    (A) 5 (B) 6
    (C) 7 (D) None

15. In which ARQ, if NAK is received only specified damaged or lost frame is sent
    (A) Stop-and-wait (B) Go-back-N
    (C) Selective reject (D) None

16. In P-persistent approach, when a station finds line is idle, it
    (A) Waits 1's before sending (B) Sends with probability of 1-P
    (C) Send with probability P (D) Sends immediate

17. In which random access methods, stations do not sense medium
    (A) ALOHA (B) CSMA/CD
    (C) CSMA/CA (D) ETHERNET

18. BNC connectors are used by
    (A) UTP (B) STP
    (C) Coaxial (D) Fiber optic

19. In fiber optic signal, source is
    (A) Light waves (B) Radio
    (C) Infrared (D) Very low frequency

20. Radio waves and microwave frequencies range from
    (A) 3 to 300 KHz (B) 300 KHz to 3 GHz
    (C) 3 KHz to 300 GHz (D) 3 KHz to 3000 GHz

PART – B (5 × 4 = 20 Marks)
Answer **ANY FIVE** Questions

21. What are different topologies in network? Draw a hybrid topology with a ring backbone and two bus network.

22. Differentiate between TCP/IP and OSI model. Match the following into one or more layers in OSI
    - Communication with user's application program
    - Error correction and transmission
    - Mechanical and electrical interface
    - Responsibilities of carrying frames between adjacent nodes.

23. An organization is granted block of 211.17.180.0/24. Administrator wants to create 32 subnets. Find subnet mask, first address, last address in subnet 1.

24. What is basis of classification of four types of OSPF links?

25. Differentiate between Aloha and slotted Aloha access method. One hundred stations of network share a 1-Mbps channel. If frames are 1000 bits long, find the throughput of each sending station 10 frames per second for aloha and slotted aloha.

26. Differentiate between Adhoc and Infrastructure network.

27. What is transmission time of a packet sent by a station if length of packet is 1 million bytes and bandwidth of channel is 200 kbps?

PART – C (5 × 12 = 60 Marks)
Answer **ALL** Questions

28. a. List the layers of OSI model and explain responsibilities of each layer with a neat diagram.

(OR)

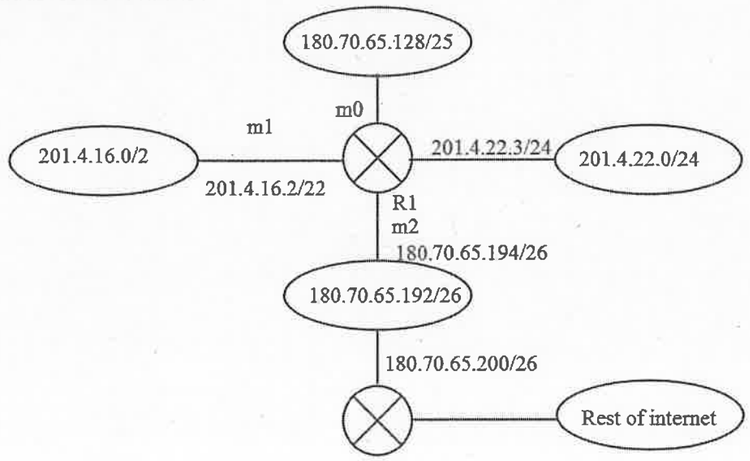
b. Name four basic topology and cite advantage and disadvantage of each. For n devices, what is number of links in above said topologies?

29. a. An organization is granted with the block 130.56.0.0./16. The administrator wants to create 1024 subnets. Compute the subnet mask, first address and last address of subnet 1 and number of address in each subnet.

(OR)

b. Explain in detail between HUB, switch, bridge and router. Tabulate differences.

30. a. Explain in detail about RIP routing protocol. Also from shown below construct routing table. In addition, show forwarding process if a packet arrives at R1 in shown below with destination address 201.4.22.3.



(OR)