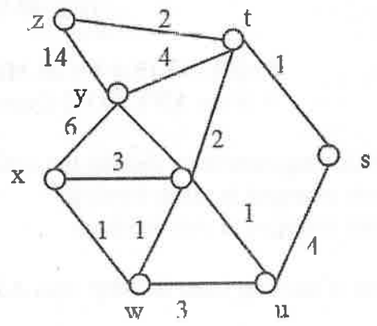
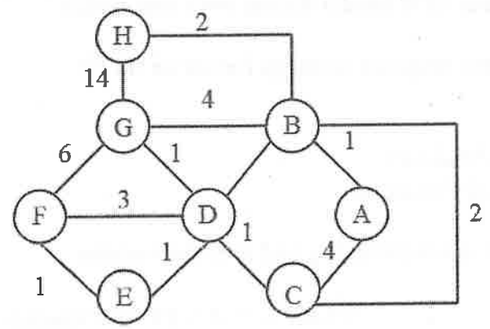
30. a. With the indicated link cost, use Dijikstra's shortest path algorithm to compute the shortest path from X to all network nodes.




**(OR)**

b. Using link state routing algorithm find the best path for B as root node.




31. a.i. Draw the TCP header structure.

ii. Write about TCP connection management in detail.

**(OR)**

b.i. Describe three-way hand shaking TCP protocol. (8 Marks)

ii. Explain about RSA algorithm. (4 Marks)

32. a. Describe about DNS, FTP and HTTP.

**(OR)**

b. Describe ATM layers and different types of adaptation layers in detail.

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**B.Tech. DEGREE EXAMINATION, MAY 2019**

Seventh Semester

EC1027 – COMPUTER COMMUNICATION

*(For the candidates admitted during the academic year 2013 – 2014 and 2014 -2015)*

**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. Communication between a computer and a keyboard involves _____ transmission.
   (A) Half-duplex (B) Full-duplex
   (C) Automatic (D) Simplex

2. Three or more devices share a link connection
   (A) Uni point (B) Multipoint
   (C) Point to point (D) Broadcast

3. The topology with highest reliability is
   (A) Bus topology (B) Mesh topology
   (C) Star topology (D) Ring topology

4. If link transmits 4000 frames per second, and each slot has 8 bits, the transmission rate of circuit this TDM is
   (A) 500 bps (B) 500 kbps
   (C) 32 kbps (D) 32bps

5. Automatic repeat request error management mechanism is provided by
   (A) Logical link control (B) Media access control
   (C) Network interface control (D) Physical interface control

6. Which ARQ mechanism deals with the transmission of only damaged or lost frames. Despite the other multiple frames by increasing. The efficiency and its utility in noisy changes
   (A) Go-Back-N ARQ (B) Selective repeat ARQ
   (C) Stop and Wait ARQ (D) Slinding Window

7. IPV4 address is
   (A) 8 bit (B) 16 bit
   (C) 32 bit (D) 64 bit

8. Which feature of GO-Back –N AQR mechanism possesses an ability to assign the sliding window in the forward direction?
   (A) Stop and Wait (B) Selective Repeat
   (C) Resending of frames (D) Sender slinding windows

9. What are the frames issued by the secondary station of HDLC, known as?
   (A) Link (B) Command
   (C) Response (D) Request

10. Routers operates in which layer OSI reference model
   (A) Layer 1 (physical layer) (B) Layer 3 (network layer)
   (C) Layer 4 (transport layer) (D) Layer 7 (application layer)

11. Which of the following is correct regarding class B address of IP address?
   (A) Network bit-12, host bit-14 (B) Network bit – 14, host bit -16
   (C) Network bit -16, host bit -14 (D) Network bit-18, host bit -16

12. The last address of IP address represents
   (A) Unicast address (B) Multicast address
   (C) Network address (D) Broad cast address

13. _____ provides a connection-oriented reliable service for sending messages.
   (A) IPV4 (B) TCP
   (C) UDP (D) IPV6

14. Which one of the following is a version of UDP with congestion control?
   (A) Datagram congestion control (B) Stream control transmission
   (C) Structured stream transport (D) Data stream control

15. In OSI model, which of the following layer transforms information form machine format into the understandable by user
   (A) Application (B) Physical
   (C) Presentation (D) Session

16. In asymmetric key cryptography, the private key is
   (A) Receiver (B) Sender
   (C) Sender and receiver (D) All the connected devices to the network

17. The _____ translates internet domain and host names to IP address.
   (A) Domain name system (B) Routing information protocol
   (C) Network time protocol (D) Internet

18. When displaying a web page, the application layer uses the
   (A) FTP (B) SMTP
   (C) HTTP (D) Broadcast TCP

19. FTP is built on _____ architecture.
   (A) $P_2P$ (B) Sender-receiver
   (C) Node-node (D) Client-server





20. An ATM cell has the payload field of
   (A) 32 bytes (B) 64 bytes
   (C) 128 bytes (D) 48 bytes

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

21. For each of the following networks, discuss the conquences if a connection fails
   (i) 5 devices arranged in mesh topology
   (ii) 7 devices arranged in star topology

22. Explain the reason of moving from the stop-wait ARQ protocol to the Go-back-N protocol.

23. Define fragmentation and explain why IPV4 and IPV6 protocols need to fragment some packets.

24. Describe about UDP header format with neat sketch.

25. Summarize the response message format of HTTP.

26. Explain
   (i) P-Persistent
   (ii) Non-Persistent

27. Differentiate internetworking and intra networking.

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

28. a. Describe the circuit switching and packet switching network with a neat diagram and compare between them.

**(OR)**

b. 10 sources, 7 with a bit rate of 250 Kbps and three with a bit rate of 400 Kbps are to be combined using TDM with no synchronizing bits
   (i) What is the size of frames in bits?
   (ii) What is the frame rate?
   (iii) What is the duration of a frame?
   (iv) What is the data rate?

29. a. Describe the function and applications of each layer in OSI layers.

**(OR)**

b. Using 5-bit sequence number; what is the maximum size of the send and receiver windows for each of the following protocols? With suitable diagrams
   (i) Stop-wait ARQ
   (ii) Go-back ARQ
   (iii) Selective repeat ARQ