S.Y. B.Sc. (IT) : Sem. III

Computer Networks

Time : 2½ Hrs.] Prelim Question Paper **[Marks : 75**

Instructions : (1) All **questions are** compulsory.
(2) **Make suitable assumptions** wherever **necessary** and **state the assumptions** made.
(3) **Answers** to the **same questions** must be **written together**.
(4) **Numbers** to the **right indicate marks**.
(5) Draw **neat** labeled **diagrams wherever necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt the following (any **THREE**) **[15]**
(a) What do you mean by Transmission line impairments? Explain in detail.
(b) Define Modulation. Write a short note on Amplitude Modulation.
(c) State and explain various types of networks. What are the different ways to access the Internet?
(d) Define Data Communication. Explain its various components.
(e) List and explain the functions of ISO's OSI Model Layers.
(f) Explain the following terms of Data Transmission
(i) Parallel Transmission (ii) Serial Transmission

2. Attempt the following (any **THREE**) **[15]**
(a) Write a short note on Spread Spectrum Modulation (SSM) techniques along with its Application.
(b) What are the different types of transmission media? Explain each type.
(c) What is Packet Switching? Explain its methods of implementation.
(d) Explain the following terms
(i) Forward Error Corrections (FEC)
(ii) Automatic request for Retransmission (ARQ)
(e) List the different error correcting codes. Explain any two in detail with examples.
(f) What are the functions of data link layer? What is the relationship between packets and frames? Explain the different methods of framing.

3. Attempt the following (any **THREE**) **[15]**
(a) What is HDLC? What are the different types of frames in HDLC? Explain the different fields in HDLC frames.
(b) Explain ALOHA system with its two versions.
(c) Explain the following connecting devices in networking
(i) Bridge (ii) Gateway
(d) What is Virtual LAN? How are stations grouped into different VLANs? Explain.
(e) Explain Bluetooth Layered Architecture.
(f) Explain the transition phases of point-to-point protocol.

4. Attempt the following (any **THREE**) **[15]**
(a) Draw and explain the IPv6 header format.
(b) What is routing information protocol? Explain the RIP algorithm.
(c) What is fragmentation? Explain its various strategies.
(d) What is dynamic host configuration protocol? Explain the DHCP message format.
(e) Explain the terms :
(i) Connection Oriented Network Services
(ii) Connectionless Network Services
(f) What are the different transition strategies from IPv4 to IPv6? Explain.

5. Attempt the following (any **THREE**) **[15]**

(a) Write a short note on TCP.

(b) What is secure shell? Explain the components of secure shell.

(c) Explain Simple Mail Transfer Protocol (SMTP)

(d) With the help of a diagram, explain the Go-Back-N protocol.

(f) What do you mean by Domain Name System? What is the use of the same?

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Paper Discussion Schedule for all Subjects

Date	Day	Timing	Centre
21 Oct. 2018	Sunday	8.00 a.m. to 10.00 a.m.	Dadar
21 Oct. 2018	Sunday	1.00 p.m. to 3.00 p.m.	Andheri
21 Oct. 2018	Sunday	3.30 p.m. to 5.30 p.m.	Borivali
21 Oct. 2018	Sunday	1.00 p.m. to 3.00 p.m.	Thane
21 Oct. 2018	Sunday	3.30 p.m. to 5.30 p.m.	Ghatkopar
22 Oct. 2018	Monday	6.00 p.m. to 8.00 p.m.	Nerul