

Time: 3 Hours

Maximum Marks: 120

**Instructions to Candidates:**

*Attempt all ten questions from Part A, five questions out of seven questions from Part B and four questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.*

*Use of following supporting material is permitted during examination.  
(Mentioned in form No. 205)*

1. NIL2. NIL**PART - A****(Answer should be given up to 25 words only)****[10×2=20]****All questions are compulsory**[ersahilkagyan.com](http://ersahilkagyan.com)

Q.1 List the seven layers of the OSI model.

Q.2 What is difference between analog and digital signals?

Q.3 Differentiate between single-bit error and burst error.

Q.4 Define framing and the reason for its need.

Q.5 Differentiate between IPv4 address and IPv6 address.

Q.6 What is physical address?

Q.7 Differentiate between connectionless and connection-oriented service.

Q.8 Write any two differences between UDP and TCP.

Q.9 What are the two main categories of DNS messages?

Q.10 What are the three FTP transmission modes?

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## **PART – B**

**(Analytical/Problem solving questions)**

**[5×8=40]**

**Attempt any five questions**

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Q.1 Explain TCP/IP model with suitable diagram.

Q.2 What is line coding? Explain its characteristics.

Q.3 Explain block coding with suitable diagrams.

Q.4 Explain Go-back-N ARQ protocol.

Q.5 Explain ARP and RARP address mapping protocols.

Q.6 Explain the services provided by the TCP.

Q.7 Explain the services provided by network security.

## **PART - C**

**(Descriptive/Analytical/Problem Solving/Design Questions)** [4×15=60]

**Attempt any four questions**

- Q.1 Explain any two functions of each layer in the OSI model.
- Q.2 Explain pure ALOHA protocol with suitable diagrams.
- Q.3 Explain distance vector routing protocol with suitable example.
- Q.4 Explain the leaky bucket algorithm with the help of suitable diagrams.
- Q.5 Explain the HTTP protocol with the help of suitable diagrams:

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