

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 1429

Roll No.

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M.C.A.

(SEM. III) ODD SEMESTER THEORY EXAMINATION
2010-11

COMPUTER NETWORKS

Time : 3 Hours

Total Marks : 100

Note : (1) Attempt all questions.

(2) All questions carry equal marks.

1. Attempt any four parts :

(5×4=20)

- What do you mean by channel capacity ? Discuss design issues for a physical layer.
- What are relationship between services, interfaces and protocols with respect to network's layered architecture.
- What are the channel types in ISDN to construct transmission structure of any access link ? Discuss.
- What are difference between message switching and packet switching ?
- Discuss different design issues for the layers in computer network ? Explain them with the help of a diagram.
- Describe the features of following :
 - Gateways
 - Bridges.

2. Attempt any two parts :

(10×2=20)

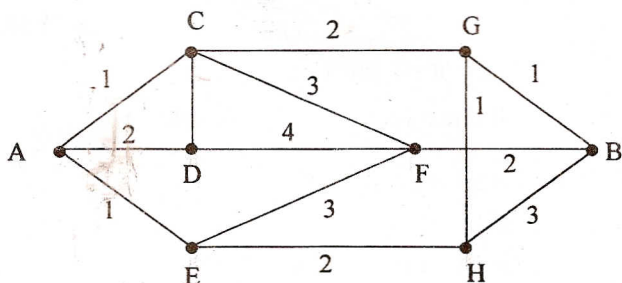
- What are hamming codes ? What will be the hamming code for the bit pattern 11001101. If during transmission

an error occurs at 7th bit, explain with reasons how this error will be detected.

- (b) What is a slotted ring protocol? Compare it with CSMA/CD protocol.
- (c) Write a short note on pure ALOHA.

3. Attempt any two parts : (10×2=20)

- (a) Discuss steps involved in finding shortest route between node A and B shown in the network below, using Dijkstra's Algorithm.



- (b) What do you mean by routing algorithms? Discuss their applications in computer network and explain one of them.
- (c) Discuss the important aspects of TCP/IP.

4. Attempt any two parts : (10×2=20)

- (a) What do you mean by public key cryptographic system? Explain the role of public key and private key.
- (b) State different protocols used for E-mails. Differentiate between IMAP, POP3 and SMTP protocol.
- (c) Discuss the UDP operation in brief. How it is possible to execute several internet application over a single IP address?

Attempt any **two** parts :

(10×2=20)

- (a) Explain the role of domain name server and explain its functional parts. In DNS, why a hierarchical naming structure is used instead of a flat structure ?
- (b) What are functions of SMTP ? Differentiate between a user agent and a mail transfer agent. How does MIME enhance SMTP ?
- (c) Write short notes on following :
 - (i) TELNET
 - (ii) RSA Encryption Algorithm.