Total No. of Pages 2   Roll No. ... ...

B.Tech. (EE/EL)   EIGHTH SEMESTER

MID SEMESTER EXAMINATION   *(March 2019)*

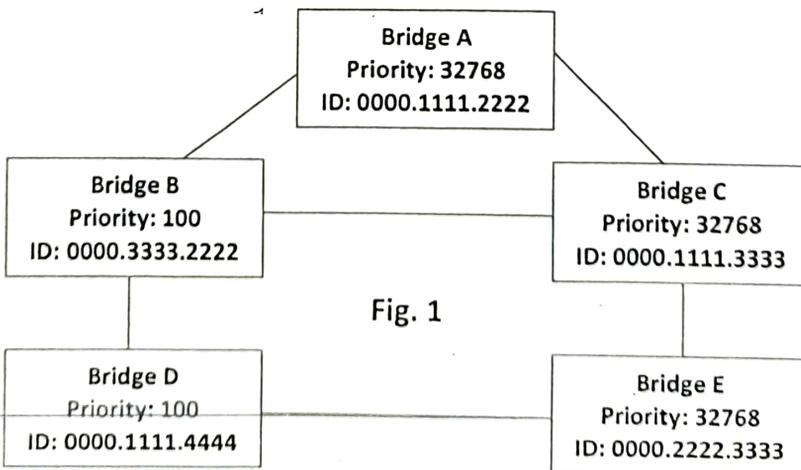### EE/EL-446 Data Communication & Computer Network

Time: 1:30 Hours   *Max. Marks: 100*

> **Note:**   Answer all questions.
> Assume suitable missing data, if any.

1.a   Explain OSI model of Networking and compare it with TCP/IP Model.   (12)

1.b   What is Error control? Compare go-back-n ARQ with stop-and-wait ARQ. Given a message 1010001101 and pattern x^5+x^3+x+1, find out FCS and frame T.   (13)

2.a   Explain IPv4 header. You have IPv4 address 172.16.1.0/16. If it changes to 172.16.1.0/24, find out the number of subnets, no. of host per subnet and range of IP addresses.   (12)

2.b   Explain IEEE 802.3 network. Draw a MAC frame and explain. Why Switches are preferred over Hubs?   (13)

3.a   Explain Spanning Tree Protocol in following network? Cost of all links are 19.   (12)

Fig. 1

3.b Explain CSMA/CD method of LAN access. Discuss different LAN topologies. (9)

4.a What are different Digital signal encoding schemes? Compare NRZ-L, Bipolar-AMI, Manchester and differential Manchester encoding in terms of error detection, clocking, signal interference, noise immunity, cost and complexity. (13)

4.b Write short notes on followings. (16)

   (a)   Transmission media in Data Communication   (b) IPv4