

2017**M.Sc. 4th Semester Examination****ELECTRONICS****PAPER—ELC-402***Full Marks : 50**Time : 2 Hours**The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.**Illustrate the answers wherever necessary.***(Computer Networking)**

Answer Q. No. 1 and any three from the rest.

1. (a) What are simplex, half duplex and full duplex communication system ?
- (b) What is frequency reuse in mobile communication system ?
- (c) A signal is carrying a data in which two data elements are encoded as one single element. If bit rate is 1000 kbps. What is the average value of band rate if C is between 0 and 1 ?
- (d) What is the use of checksum in UDP header ?
- (e) What are ALOHA and Slotted ALOHA ? 2×5

(Turn Over)

2. (a) What do you mean by base band and broad band communication ?
- (b) Define and differentiate between Myquest bit rate and Shanon capacity for noisy channel.
- (c) Let a channel of 1 MHz band width. The SNR is 63. What are appropriate bit rate and signal level ? 3+3+4
3. (a) What are the advantages and disadvantages of the fibre optical communication systems ?
- (b) What devices are used in SONET transmission ?
- (c) Discuss on functional layer of SONET transmission. 3+3+4
4. During the communication, how various layer of OSI model exchange information to establish a connection ? Describe with the help of a suitable diagram. 5+5
5. (a) What are trunking system and grade of services ?
- (b) How many uses can be supported for 0.5% blocking probability for the following number of trunked channels in blocked call clean system ?
 (a) 1 (b) 5 (c) 10 (d) 20 (e) 100
 Assume each user generates 0.1 Erlangs of traffic. 5+5
6. (a) With the timing diagram illustrate low call to a mobile user initiated by a landline subscriber is established.
- (b) Write short note on :
 (i) HLR ;
 (ii) Equipment identity register ;
 (iii) Billing centre. 4+(2+2+2)

[Internal Assessment — 10 marks]
