JAYPEE UNIVERSITY OF INFORMATRION TECHNOLOGY, WAKNAGHAT
TEST -2 EXAMINATION- April 2018
B.Tech VIth Semester (ECE)

COURSE CODE: 10B11EC611   MAX. MARKS: 25
COURSE NAME: Telecommunication Networks
COURSE CREDITS: 04   MAX. TIME: 2 Hrs

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. CO indicates Course Outcomes.

Q1 (a). Design a switch which is optimized both physically (the number of crosspoints) and temporally

(the amount of delay).   **CO-3**   (2)

Q1 (b). Design a Banyan switch for 8 inputs. Take some suitable example to show its operation.

                                               CO-3   (3)

Q2 (a). We need a dataword of at least 16 bits. Find the values of k and n in the Hamming code C (n, k)

with d_{min} = 3.   **CO-4**   (1.5)

Q2 (b). Given the dataword **1010011010** and the divisor **10111**,

   i) Show the generation of the codeword at the sender site using cyclic redundancy check (CRC).

   ii) Show the checking the codeword at the receiver site (assume no error).   **CO-4**   (2+1.5 =3.5)

Q3 (a). Draw the transition phase diagram of point-to-point protocol (PPP) and discuss it in detail.

                                               CO-4   (3)

Q3 (b). Byte stuff the data in the following figure: **CO-4**   (1)

ESC	Flag		ESC		Flag	ESC	ESC		Flag

Q3 (c). Bit stuff the following data: **CO-4**   (1)

000111110111101011111111110011011111

Q4 (a). Design a system in which station 4 can detect the data sent by station 1 with the following

specifications: **CO-4**   (2.5)

   i) There are 4 stations in the system.

   ii) The codes for each station have to be generated by using Walsh codes with W_1 = [-1]. Show the 4