Dr. G. Singh .

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
END TERM TEST
SUMMER SEMESTER - JUNE 2016
B.Tech/ V Semester

COURSE CODE: 10B11EC511 MAX. MARKS: 50
COURSE NAME: DIGITAL COMMUNICATION
COURSE CREDITS: 3 MAX. TIME: 2 Hrs

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

1. The parity check matrix of a particular (7,4) linear block code is given by

$$[H] = \begin{bmatrix} 1 & 1 & 1 & 0 & 1 & 0 & 0 \\ 1 & 1 & 0 & 1 & 0 & 1 & 0 \\ 1 & 0 & 1 & 1 & 0 & 0 & 1 \end{bmatrix}$$

(i) Find the generator matrix G

(ii) List all the code vectors

(iii) What is the minimum distance between code vectors?

(iv) How many errors can be detected and how many can be corrected? [15 Marks]

2. Compare various digital modulation techniques in detail. [10 Marks]
3. Draw and explain the block diagram of OOK modulator. [10 Marks]
4. Explain ARQ system for error correction in detail. [10 Marks]
5. Derive an expression for P_e in non coherent detection of OOK. [5 Marks]

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