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Unit 3 - Week-2

Assignment 2

The due date for submitting this assignment has passed. **Due on 2016-03-29, 23:55 IST.**

Submitted assignment

1) A linear block code is specified by it's parity check matrix $\mathbf{H}$ as given below (use the same matrix for question number 1 to 4) ***1 point***

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

Then, minimum distance of the code is 4.

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

2) Code can simultaneously correct single error and detect double errors. ***1 point***

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

3) Code has equal number of odd and even weight codewords. ***1 point***

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
False

4) Code can simultaneously correct 2 errors and 1 erasure ***1 point***

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:

False

5) A linear block code is specified by parity check matrix (use the same matrix for question number 5 to 7) ***1 point***

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

Then, 001001 and 001000 can be coset leader.

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

6) Code can correct double errors. ***1 point***

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
False

7) Syndrome corresponding to error pattern 100000 is 100. ***1 point***

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
False

8) A linear block code is described by the generator matrix (use same matrix for question number 8 to 10) ***1 point***

$$\mathbf{G} = \begin{bmatrix} 1 & 1 & 0 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 & 0 & 1 \\ 1 & 1 & 1 & 1 & 1 & 1 \end{bmatrix}$$

The codewords are sent over a binary symmetric channel (BSC) with crossover probability p = 0.1, undetected error probability is given by

- 0.1
- 0.01
- 0.02
- 0.001

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.02

9) How many errors can this code correct ? ***1 point***

- 0
- 1
- 2
- 3

No, the answer is incorrect.
Score: 0

Accepted Answers:
0

10) How many errors can this code detect ? *1 point*

- 0
- 1
- 2
- 3

No, the answer is incorrect.
Score: 0

Accepted Answers:
1

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