X

Unit 2 - Week-1

Assignment 1

The due date for submitting this assignment has passed. **Due on 2016-03-24, 23:55 IST.**

Submitted assignment

Covers the theory based on first week lectures

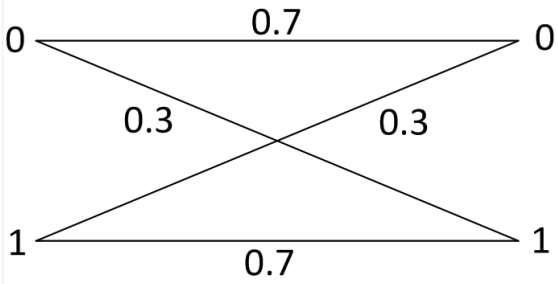
1) Which of the following is an example of source coding? ***1 point***

- Huffman code
- Repetition code
- Parity check code
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Huffman code

2) If an information source emits "1" and "0" with equal probability and the bit is transmitted through BSC, what is the probability of received sequence '01'? ***1 point***



- 0.125
- 0.25
- 0.5
- 1

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.25

3) A repetition code of length 7 has ***1 point***

- 5 codewords
- 7 codewords
- 2 codewords
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
2 codewords

4) 1/3 repetition code is able to **1 point**

- detect single error
- detect double error
- correct single error
- All of above

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of above

5) For (2,1,3) convolutional code, the generator sequences are given as **1 point**
$g^{(0)} = (1\ 1\ 0\ 1),\ g^{(1)} = (1\ 0\ 0\ 1)$. Find the generator matrix (G) ?

- $\begin{bmatrix} 10 & 11 & 00 & 11 & & \\ & 11 & 10 & 00 & 11 & \\ & & 11 & 10 & 00 & 11 \\ & & & \ddots & \ddots & \ddots \end{bmatrix}$
- $\begin{bmatrix} 11 & 10 & 01 & 11 & & \\ & 11 & 10 & 01 & 11 & \\ & & 11 & 10 & 01 & 11 \\ & & & \ddots & \ddots & \ddots \end{bmatrix}$
- $\begin{bmatrix} 11 & 10 & 00 & 11 & & \\ & 11 & 10 & 00 & 11 & \\ & & 11 & 10 & 00 & 11 \\ & & & \ddots & \ddots & \ddots \end{bmatrix}$
- None of above

No, the answer is incorrect.
Score: 0

Accepted Answers:

$\begin{bmatrix} 11 & 10 & 00 & 11 & & \\ & 11 & 10 & 00 & 11 & \\ & & 11 & 10 & 00 & 11 \\ & & & \ddots & \ddots & \ddots \end{bmatrix}$

6) Given a (2, 1, 3) convolutional code with generator sequences **1 point**
$g^{(0)} = (1\ 0\ 1\ 0),\ g^{(1)} = (1\ 0\ 1\ 1)$ and the convolutional encoder is initially at all zero state. If the input sequence u is (1 1 0 1 1) then what will be the encoded output sequence?

- (11, 10, 11, 01, 10,.....)
- (11, 11, 10, 01, 10,.....)
- (11, 11, 11, 01, 10,.....)
- None of above

No, the answer is incorrect.
Score: 0

Accepted Answers:
(11, 11, 11, 01, 10,.....)

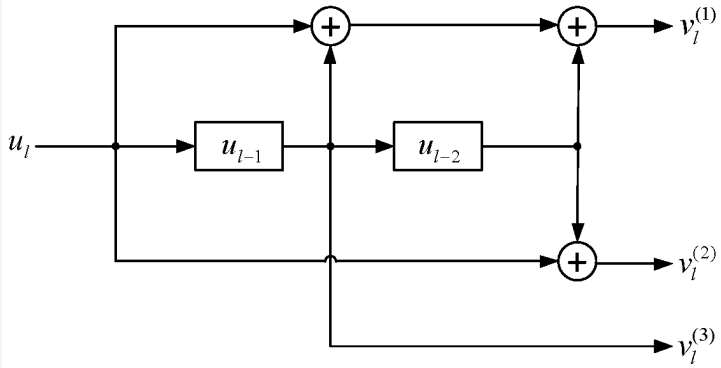
7) The generator sequences for rate R=1/2 convolutional code are $g_0(D) = 1 + D^2,\ g_1(D) = 1 + D + D^2$. If the input sequence u is (0 1 1 1 0) then the output sequence is ***1 point***

- (00, 11, 10, 01, 10,.....)
- (00, 11, 10, 01, 11,.....)
- (01, 10, 10, 01, 10,.....)
- None of above

No, the answer is incorrect.
Score: 0

Accepted Answers:
(00, 11, 10, 01, 10,.....)

8) ***1 point***



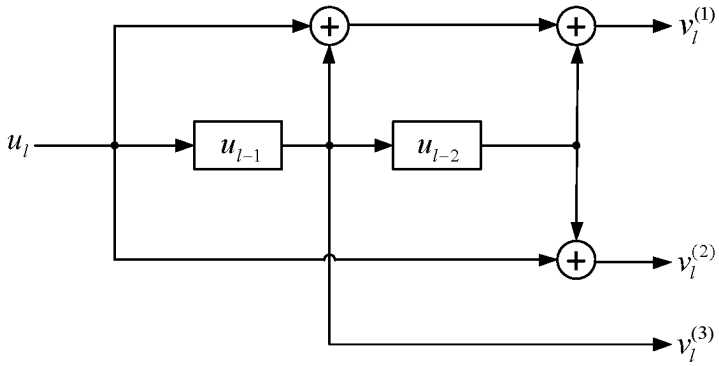
For the above convolutional encoder the value of (n, k, m) is

- (2, 3, 1)
- (1, 2, 3)
- (3, 2, 1)
- (3, 1, 2)

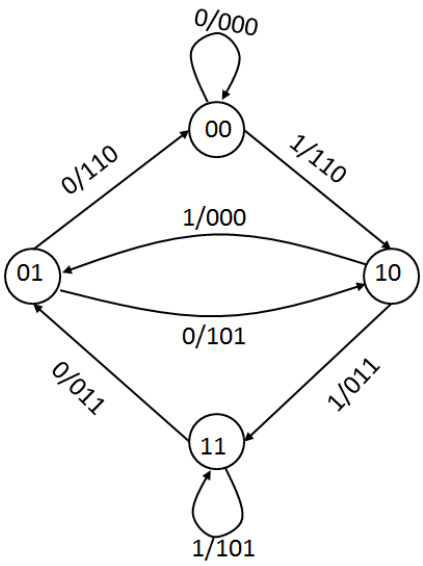
No, the answer is incorrect.
Score: 0

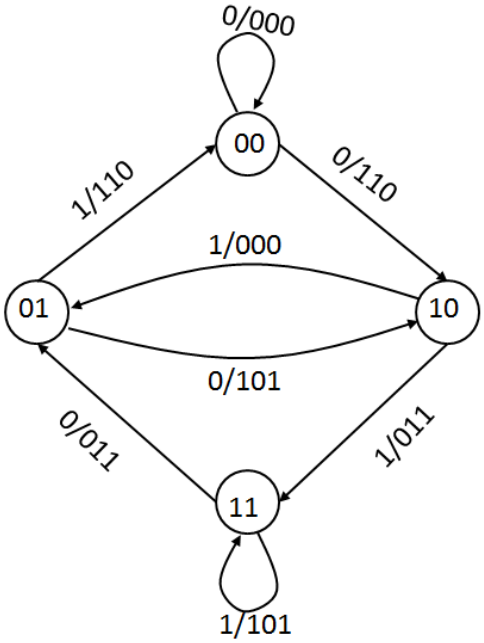
Accepted Answers:
(3, 1, 2)

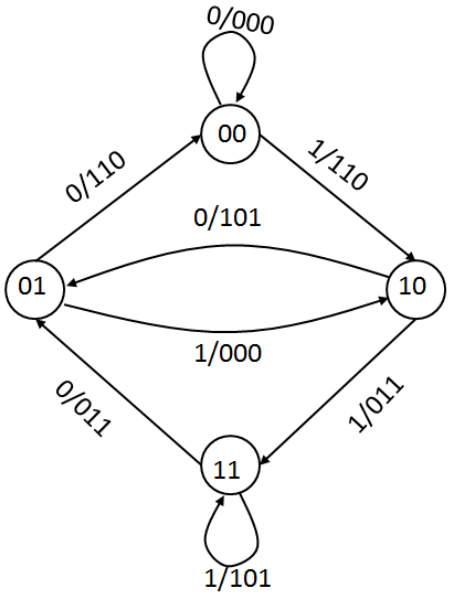
9) ***1 point***



State diagram of the above encoder is



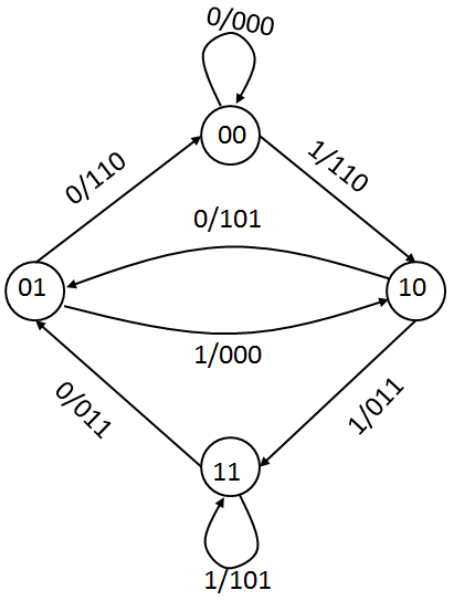




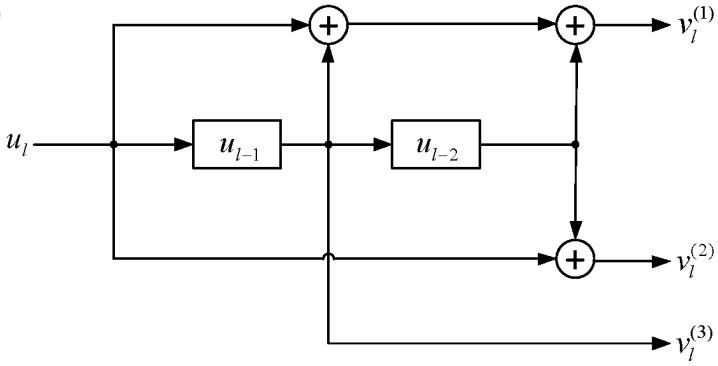
None of above

No, the answer is incorrect.
Score: 0

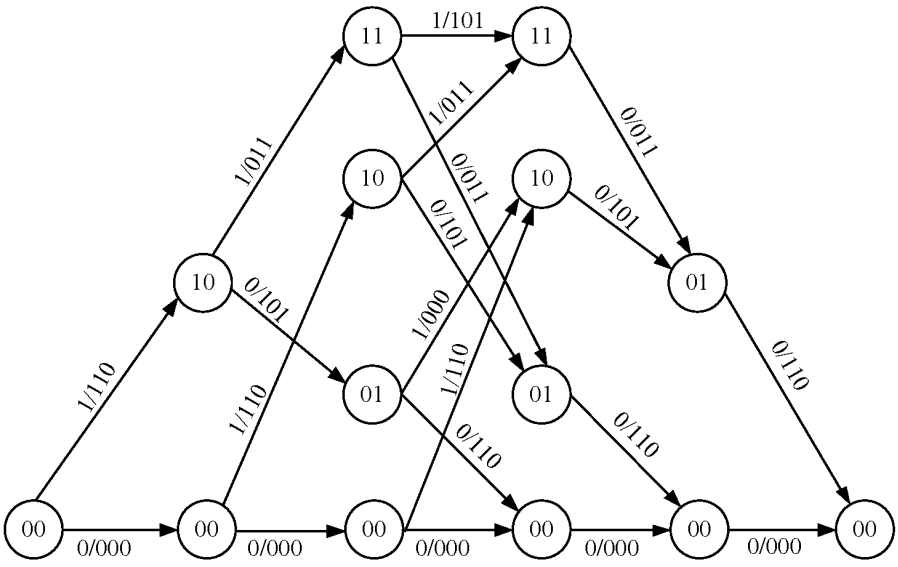
Accepted Answers:

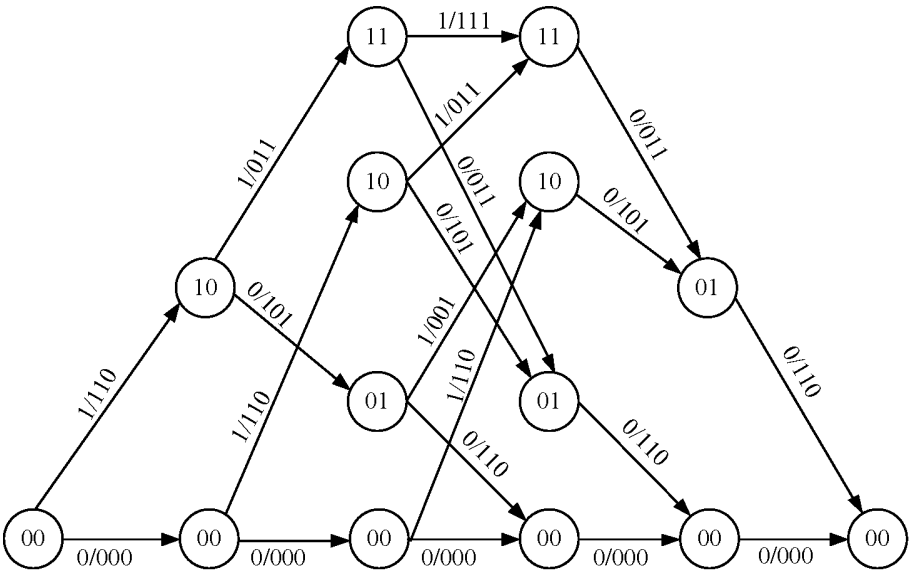


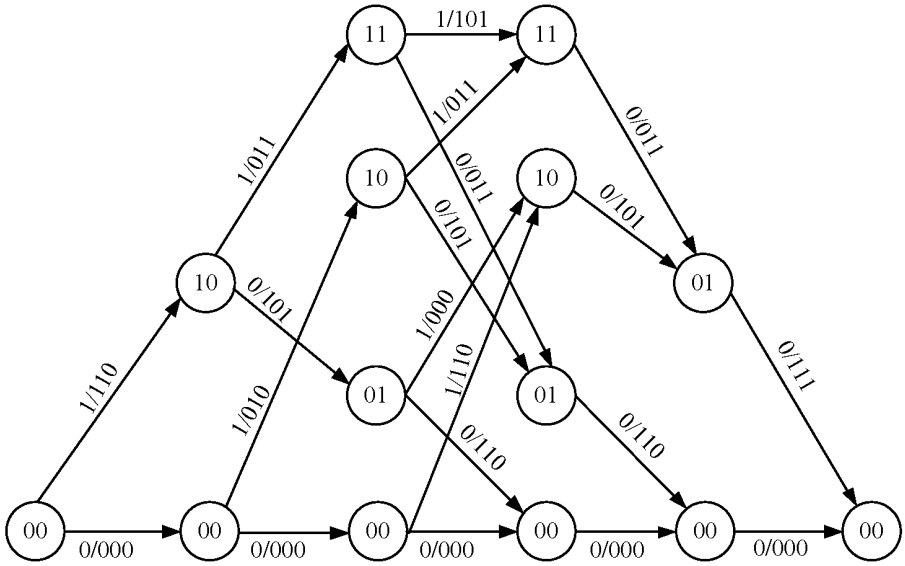
10 *1 point*



The trellis diagram of above encoder is



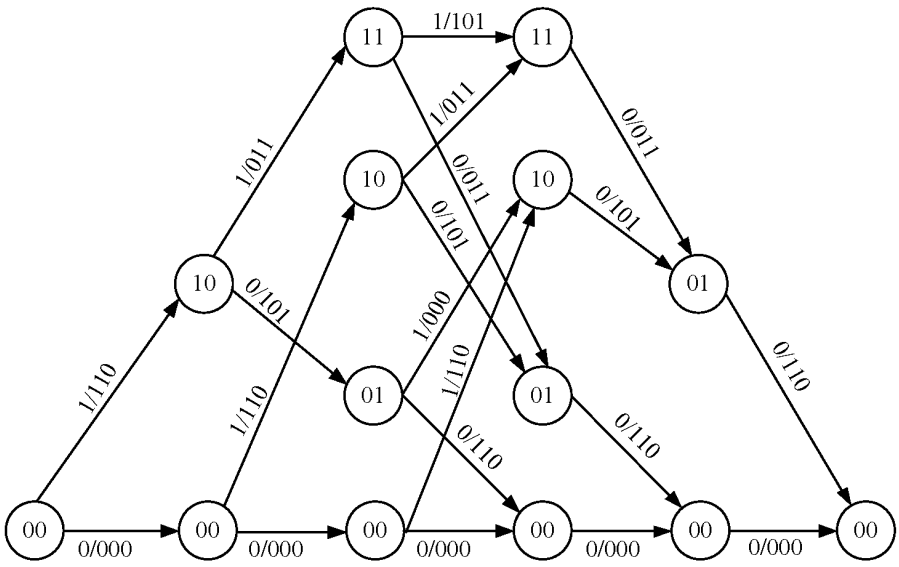




None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:



Previous Page End