

Handwritten scribbles

- A- Identify the desired properties of line codes (3-marks)
- B- An input data stream "0110010110011" is passed through a line encoder circuit, the oscilloscope is used to see the output stream, draw the signal that will be seen in case of .
 - i- BRZ
 - ii- Manchester
 - iii- Differential encoders
 Draw the circuit diagram of one of these encoders (4-marks)
- C- State and explain an experimental tool that can be use detect and specify the errors in the received signals in case of M-ary PSK and M levels QAM. (3-marks)

12] Question Two: (10 Mark) [measures ILOs of a15 and b15]

- A- i- **Explain**, with the aid of sketches and diagrams the operation delta modulation system. ii- Consider a delta system designed to accommodate analog signals limited to bandwidth of 5KHz. A sinusoidal test signal of amplitude of 1v and frequency of 1KHz is applied to the system. The sampling rate of the system is 50 KHz. **Calculate the step size** to minimize the slope over load and then **determine the signal to quantization noise ratio for this test.** (5-marks)
- B- Write down the general equation for PAM spectrum specifying each term. (2-marks)
- C- Draw the circuit diagram for non-coherent BFSK demodulator and specify the output of each stage (3-marks)

11] Question One: (10 Mark) [measures ILOs of a15, b15, b16 and c18]

Answer the following questions:

This Exam measures the ILOs [a8, a15, b15, b16 and c18]

Full Mark: 40 degree Date: 3 /1/2019 Time allowed: 3 h

Academic Number: ECE4013

Subject: Electronic measurement and Tests (2)

Department of Electrical Engineering

Kaferelshikh University



Faculty of Engineering

Year: 5th Electronics and

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Final Exam: 2 pages

[3] Question three: (10 Mark) *[measures ILOs of a8 and b16]*

A- Explain the Cathode Ray Tube and then explain J.J. Thomson Cathode Ray tube Experiment. (4-marks)

B- How can be Build a Current Mirror Circuit with illustration the importance of caveat for current mirror circuit? (Sketch the circuit diagram). (4marks)

C- Define the power electronic devices, then compare between the small signal diode and shottcky diode. (2-marks)

[4] Question four: (10 Mark) *[measures ILOs of a8 and b16]*

A- Sketch the circuit diagram of Vacuum Tube Audio Amplifier and explain the following (5-marks)

- One of the problems with building vacuum tube circuits.
- Why using two coupling capacitors instead of just one adds?
- Electronic tubes devices used sockets, why?

B- Design high voltage plate dc power supply at 170 volts. What the bad aspect of using an ignition coil. (3-marks)

C- Compare between the traditional tube and microwave tubes? (2-marks)

Best Wishes

Committee of Correctors and Testers

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