را بعدة - انطالات

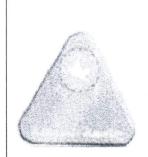


University: Menoufia

Faculty: Electronic Engineering Department: Communications

Academic Level: 4th Year Course Name: Elective 5 Broadcasting and Television

Engineering Course Code: ECE 416



Date: 16 January 2019

Time: 3 Hours No of pages: 1

Full Mark: 70 marks

Exam: Final

Examiner: Professor Adel Abdel Masieh

Answer all the following questions

Question No. 1 (8 marks)

The gain of the video detector in a TV receiver is -10 dB. If the input voltage is 8 V and the output V_{pp} is 2.15 V, find the modulation index of the signal before detection.

Question No. 2 (14 marks)

- (a) On what basis the number of pictures/sec is chosen in TV?
- (b) Explain the reason for making the frequency of the local oscillator greater than the vision carrier.

Question No. 3 (8 marks)

Derive an expression for the maximum video frequency required for the luminance signal.

Question No.4 (16 marks)

- (a) For color TV what is compatibility? What are the properties of color TV signal to fulfill compatibility?
- (b) A TV picture consists of 2x10⁵ pixels. Each pixel assumes 8 brightness levels which are equally likely. Number of frames per second is 25. The required S/N ratio is 2500. Calculate the bandwidth required to transmit the video signal.

Question No. 5 (24 marks)

- (a) What are the different types of delays in a digital audio broadcasting (DAB) network?
- (b) Define single frequency network and explain how DAB saves frequency to cover shadow areas.
- (c) Explain how DAB can save more power than FM transmitters.