

# King Fahd University of Petroleum and Minerals

## University Diploma Programs Electronic Equipment Maintenance

### EET-029: Introduction to Communications

#### Home Work # 5

1. In what way does the use of a pilot-carrier system help to reduce the difficulties of receiving and demodulating J3E? What is the alternative to the use of R3E if high receiver frequency stability is needed?
2. Define and describe independent-sideband transmission.
3. Define and describe vestigial sideband transmission. What is its only application?
4. Show the frequency spectrum of an NTSC video transmission. Why is a portion of the lower sideband transmitted at all?
5. An AM broadcast station has a modulation index which is 0.75 on the average. What would be its average power saving if it could go over to J3E transmissions, while having to maintain the same signal strength in its reception area?