COMMUNICATION SYSTEMS (EE-391)
MID TERM EXAMINATION – SPRING 2018

Time Allowed: 2hrs   **Max Marks: 50**

DIRECTIONS:

1. Be *clear and precise* in your answers.
2. *No sharing of calculators* or any helping material is allowed during exam.
3. Don't forget to mention your registration number.

Q: No. 1: Define the following entities.   **(1x5)**

   a) Central Frequency
   b) Carrier
   c) Low Pass Filter
   d) Baseband signal
   e) Energy Signal

**Q: No. 2:**   **(5+5)**

   a) What can we depict from a channel having Signal to Noise Ratio (SNR) value of 1? What is the percentage reliability, in terms of signal transmission, for this particular channel?
   b) Calculate the achievable bitrate on a channel that has a theoretical bandwidth of 40-kHz, with an SNR value of 7?
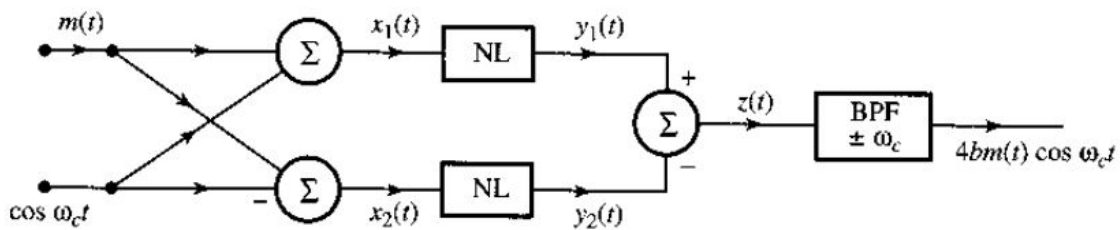
Q: No. 3:   **(3+7)**

   a) What are the three conditions upon which we can distinguish between Fourier transformable and non-transformable function?
   b) Evaluate the FT of $5e^{-t}sin(t)$

Q: No. 4: Draw the ASK, PSK and FSK formatted signal for the following baseband bit stream.   **(5+5+5)**
   (Horizontal axis: time, vertical axis: Amplitude)
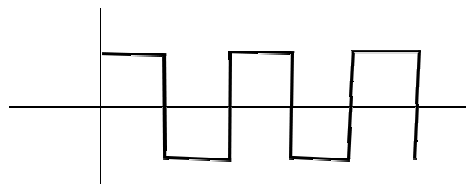
Q: No. 5: What type of modulator is given in below figure? Write the mathematical output for the signal for each segment in the given modulator.   **(10)**

THE END