Code No: R1622044 **R16** SET - 1

II B. Tech II Semester Regular/Supplementary Examinations, November - 2020
ANALOG COMMUNICATION
(Electronics &Communication Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1. a) Draw the block diagram of analog communication system. (2M)
   b) Plot the DSB-SC wave with a square-wave modulating signal. (3M)
   c) What is the relation between frequency deviation ratio and bandwidth? (2M)
   d) Define selectivity with reference to AM receiver. (2M)
   e) Define noise equivalent bandwidth. (3M)
   f) What is the need for synchronization in TDM system? (2M)

PART -B

2. a) Show that the scheme shown in Fig. 1 can demodulate the AM signal $[A + m(t)]\cos(2\pi f_c t)$. (7M)

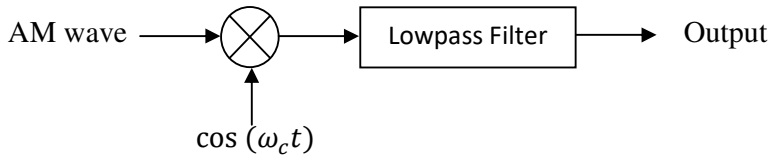

Fig. 1

   b) Sketch the AM signal $[A + m(t)]\cos(2\pi f_c t)$ for the periodic message signal with period 2 sec given by (7M)

$$m(t) = \begin{cases} 1, & 0 < t < 1 \\ -1, & 1 < t < 2 \end{cases}$$

3. a) Sketch the DSB-SC signal $s(t) = m(t)\cos(2\pi f_c t)$ corresponding to the message signal (7M)

$$m(t) = \cos(2\pi t)$$

   Plot the spectrum of $m(t)$ and $s(t)$.
   b) Explain the method of generating VSB signal from SSB signal. (7M)
4. a) Distinguish between AM and narrow-band FM. (7M)
   b) Explain how FM signal can be generated using PM modulator. (7M)
5. a) Draw the block diagram of super-heterodyne receiver for AM and explain each block. (7M)
   b) What do you mean by frequency stability in FM transmitter? Explain. (7M)
6. a) Draw the circuit diagrams and frequency response characteristics, of pre-emphasis and de-emphasis circuits. (7M)
   b) What are the effects of noise in AM system? Explain. (7M)
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7. a) Explain how a PPM wave is generated from PWM wave. (7M)

   b) Distinguish between FDM and TDM. (7M)