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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
MAKEUP EXAMINATION- 2018
B.Tech IV Semester (ECE)

COURSE CODE: 17B11EC412 MAX. MARKS: 25
COURSE NAME: Analogue and Digital Communications
COURSE CREDITS: 4 MAX. TIME: 1 Hr 30 Min.

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

Q1) Explain the block diagram of communication system. [4]

Q2) How the envelope detector is used to demodulate the AM signal? [4]

Q3) Discuss SSB-SC modulator. [4]

Q.4) Why pre-emphasis and de-emphasis is required in FM system? Discuss in detail with suitable diagram. [4]

Q.5) A modulating signal given by $x(t)=3\cos(4\pi 10^3 t - 10\pi Cos(2\pi 10^3 t))$ is fed to a phase modulator with phase deviation constant $K_p=2$ rad/V . If the carrier frequency is 10 KHz, find the instantaneous frequency at 0.5 ms. [3]

Q.6) A message signal $m(t) = 2\cos 400\pi t + 4\cos 1000\pi$, modulates the carrier $c(t) = \cos 2\pi f_c t$ where $f_c = 1MHz$ to produce an AM signal. For demodulating the generated AM signal using an envelope detector, find the range of time constant RC of the detector circuit. [3]

Q.7) Prove that SNR at the output of base band communication system is same as the SNR at the output of DSB-SC transmitted signal. [3]