PAPER ID-310425

Subject Code: KEE058

Roll No: | | | | | | | | | | | | | |

B. TECH
(SEM-V) THEORY EXAMINATION 2020-21
ANALOG & DIGITAL COMMUNICATION

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

Qno.	Question	Marks	CO
a.	Draw the basic block diagram of analog communication system.	2	1
b.	Explain different type of internal and external noises.	2	1
c.	What do you mean by narrowband and wideband frequency modulation (FM)?	2	2
d.	Explain the Nyquist criteria for sampling.	2	2
e.	What is entropy?	2	3
f.	What is VSB modulation? What is the application of VSB modulation?	2	3
g.	Draw the various waveforms for amplitude, frequency, and phase shift key.	2	4
h.	Why FSK is preferred over ASK?	2	4
i.	Define the depth of modulation.	2	5
j.	What is entropy? How is it useful in determining information?	2	5

SECTION B

2. Attempt any *three* of the following: **3 x 10 = 30**

Qno.	Question	Marks	CO
a.	Explain the working of Phase shift method for SSB-SC generation with block diagram. Draw the spectrum of SSB-SC.	10	1
b.	What is the difference between direct and indirect methods of FM generation? Explain the working of varactor diode method for FM generation.	10	2
c.	What is quantization? How is quantization and coding done? Explain with suitable diagram.	10	3
d.	Write short notes on ASK, FSK and PSK? How is FSK generated? Obtain the expression for its bandwidth. Briefly discuss regarding its frequency spectrum	10	4
e.	Explain the difference between TDM and FDM.	10	5

SECTION C

3. Attempt any *one* part of the following:

a.	Differentiate between the TRF receiver and super heterodyne receiver. What are the functions of receivers?	10	1
b.	Explain generation and detection of DSB-SC signal.	10	1

4. Attempt any *one* part of the following:

a.	Explain the difference between narrowband FM and wideband FM. Also Explain the Armstrong method for the generation of wideband FM.	10	2
b.	What is noise? Noise is difficult to eliminate but its effect can be minimizing justify	10	2

5. Attempt any *one* part of the following:

a.	With the help of block diagram explain the working of delta modulation how adaptive delta modulator improves the performance of delta modulation	10	3
b.	What is pulse code modulation? Using suitable diagram explain the quantization of signals	10	3

6. Attempt any *one* part of the following:

a.	Giving modulated waveforms, single space diagrams and probability of errors draw the optimum receiver structures for DPSK and coherent FSK modulation schemes.	10	4
b.	Explain with the help of diagram, a method of generating and demodulating phase shift keying signals.	10	4

7. Attempt any *one* part of the following:

a.	Define information and entropy. Find an expression for the channel capacity of a continuous channel.	10	5
b.	Explain briefly: (i) T1 carrier system., (ii) Shannon-Fano coding.	10	5