



WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 6th Semester Examination, 2021

ELSACOR13T-ELECTRONIC SCIENCE (CC13)

COMMUNICATION ELECTRONICS

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

GROUP-A

1. Answer any **five** questions from the following: 2×5 = 10
- (a) Why modulation is needed in a communication system?
 - (b) What is PAM?
 - (c) Define Nyquist rate.
 - (d) State Sampling theorem.
 - (e) What are the types of internal noises?
 - (f) State the disadvantages of analog communication.
 - (g) What is Demodulation?
 - (h) Define modulation index of frequency modulation.
 - (i) What do you mean by Sky Wave and Ground Wave?
 - (j) Why does digital transmission needed?

GROUP-B

Answer any six questions from the following 5×6 = 30

2. Write a comparative statement on AM, FM and PM. 5
3. What is flicker noise? State the reasons for higher noise in mixers. 2+3
4. Draw and label the block diagram of main component in Pulse-code modulation. 5
5. Calculate the percentage power saving when one side band and carrier is suppressed in an AM signal with modulation index equal to 1. 5

6. Explain how PWM signals are generated. 5
7. Draw the circuit diagram of a diode detector and briefly explain its operation.
8. (a) Why SSB is suitable for speech signals and not for video signals? 2
(b) When does a carrier is said to be over and under modulated in Amplitude modulation? 3
9. Write short note on any **one** of the following: $5 \times 1 = 5$
(a) Frequency division multiplexing
(b) Signal to noise ratio.
10. What do you mean by signal quantizing? How it is done and why it is needed? $1+2+2$
11. Draw a block diagram of digital transmission system and briefly explain the operation of each block. 5

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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