D 103038 **(Pages : 2)** **Name.....**

Reg. No.....

FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2024

Electronics

ELE 4C 05—COMMUNICATION ELECTRONICS

(2019 Admission onwards)

Time : Two Hours Maximum : 60 Marks

Section A

Answer the following questions (1-12*).*
Each question carries 2 *marks.*

1. Draw the frequency spectrum of AM signal.
2. Define modulation index of FM signal.
3. What do you mean by pre-emphasis ?
4. Define the term signal to noise ratio.
5. Write down the frequency range of microwave signal and visible signal.
6. Draw the frequency spectrum of DSBSC signal.
7. What do you mean by Vestigial Sideband transmission ?
8. Determine the bandwidth of the FM signal having frequency 5 kHz and maximum deviation 10 kHz.
9. What is sampling theorem ?
10. What do you mean by quantization noise ?
11. What do you mean by Baud rate ?
12. Draw the time domain representation of PSK signal.

(Ceiling : 20 marks)

Turn over

Section B

Answer the following question (13-19).
Each question carries 5 *marks.*

13. Explain the need for modulation.

14. The antenna current of an AM transmitter is 8 amperes (8 A) when only the carrier is sent ; but it increases to. 8.93 A when the carrier is modulated by a single sine wave. Find the percentage modulation. Determine the antenna current when the percent of modulation changes to 0.8.

15. Explain the indirect method of generating FM.

16. Explain Frequency Division Multiplexing

17. What do you mean by companding ?

18. With block diagram, describe the coherent detector of FSK signal.

19. Explain QPSK.

(Ceiling : 30 marks)

Section C

Answer any **one** *question* (20-21), *carries* 10 *marks.*

20. Compare AM, FM and PM.

21. Explain the theory of slope detection and a balanced slope detector in detail.

(1 × 10 = 10 marks)