



**SNJB'S Late Sau K B Jain College of Engineering, Chandwad
Department of Electronics & Telecommunication Engineering**

Academic Year: 2023-24	Class: TE
Semester: I	Date:31/10/2023

Title of Innovation method/activity: Participative Learning.

Name of Faculty: Prof. Rathod Y S

Subject: Digital Communication

Objective: To communicate effectively, engage the audience, and achieve the desired outcome.

Topic Covered through Activity: Spread Spectrum Communication.

Benefits: Participative Learning provides Enhanced understanding, Collaborative learning, stimulates thinking capacity and boosts confidence.

The method:

- Topics are given to a group of students.
- Asked Students to prepare a small presentation on said topic.
- Present topic to all students

Impact Analysis (Show the impact of the activity in examination)

Total No. of Questions : 8]

SEAT No. :

P-7591

[Total No. of Pages : 2

[6180]-106

T.E. (E & TC)

DIGITAL COMMUNICATION

(2019 Pattern) (Semester - I) (304181)

Time : 2½ Hours]

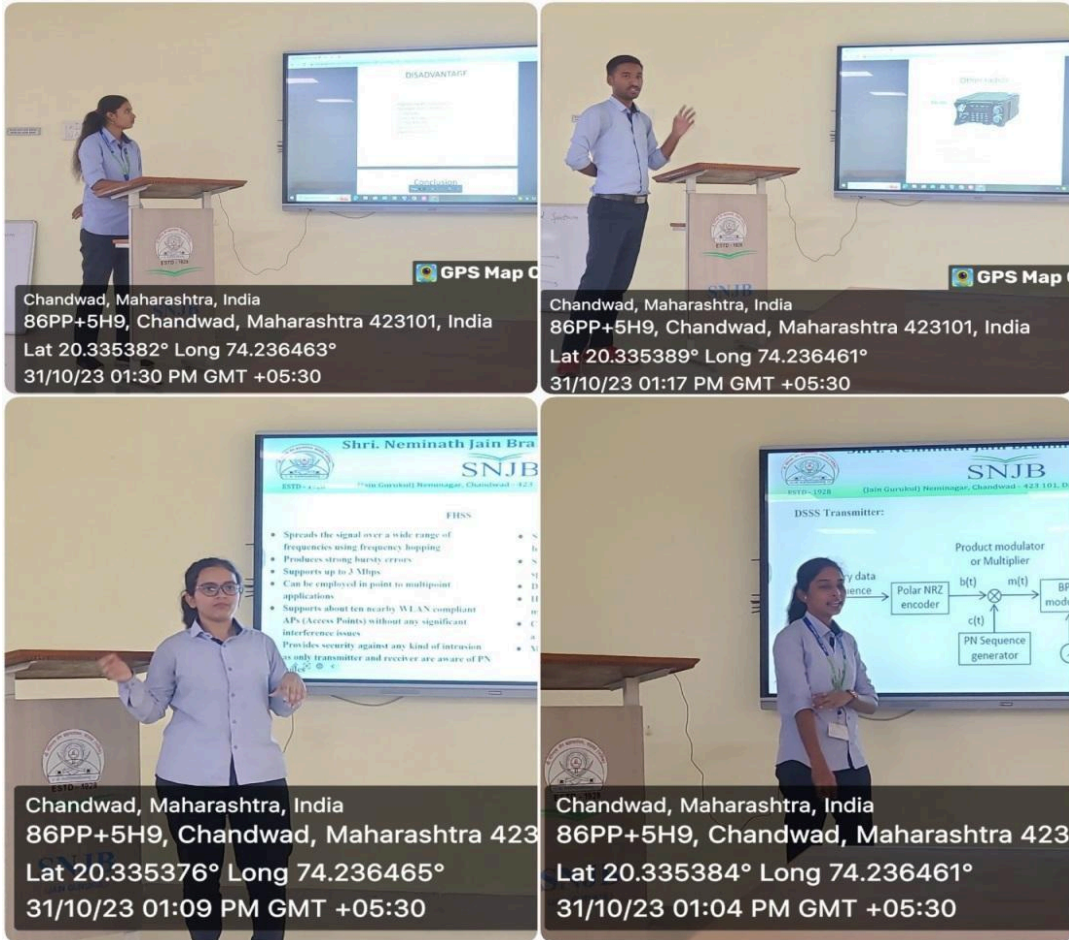
[Max. Marks : 70

Instructions to the candidates:

- 1) Answer any one Question out of Q. No. 1 or 2, Q. No. 3 or 4, Q5 or Q6 and Q7 Or Q8.
 - 2) Neat diagrams must be drawn wherever necessary.
 - 3) Figures to the right indicate full marks.
 - 4) Assume suitable data, if necessary.
- Q1)** a) With the help of neat block diagram and waveforms describe QAM system in detail. Draw signal space diagram for 16-QAM. [8]
b) Explain the performance of MSK with suitable block schematic and detail waveforms. [9]
- OR
- Q2)** a) Draw and explain block diagram of generation and reception of M-ary FSK with waveforms. [8]
b) Compare M-ary PSK and M-ary QAM. [9]
- Q3)** a) With neat block schematic and waveforms explain DSSS generation and detection. [9]
b) What is PN sequence? Explain properties of PN sequence with 3-stage shift register. [8]
- OR
- Q4)** a) Write a short note on : [8]
i) CDMA ii) FHSS
b) With the help of neat schematic describe Ranging using DSSS in detail. [9]

P.T.O.

- Questions on DSSS and FHSS were asked in the SPPU examination.
- Activity Picture (Add picture of the activity if possible)



For review and critique contact: e-mail address of faculty and HOD

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Subject In charge

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