SNS COLLEGE OF ENGINEERING

(Autonomous)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
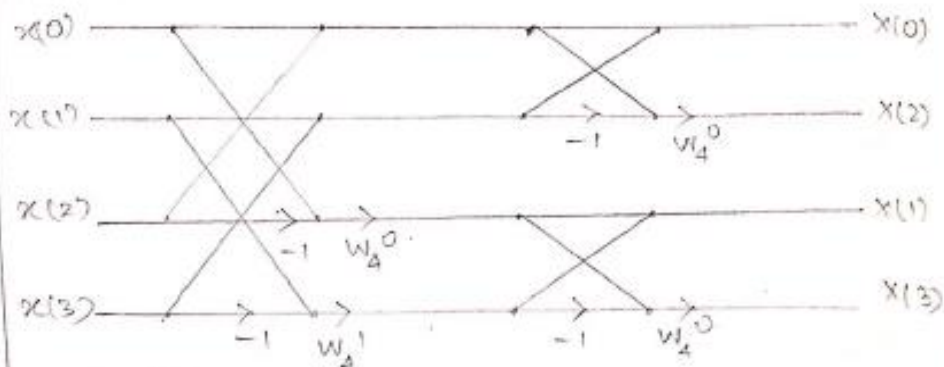
UNIT- I

Discrete Fourier Transform

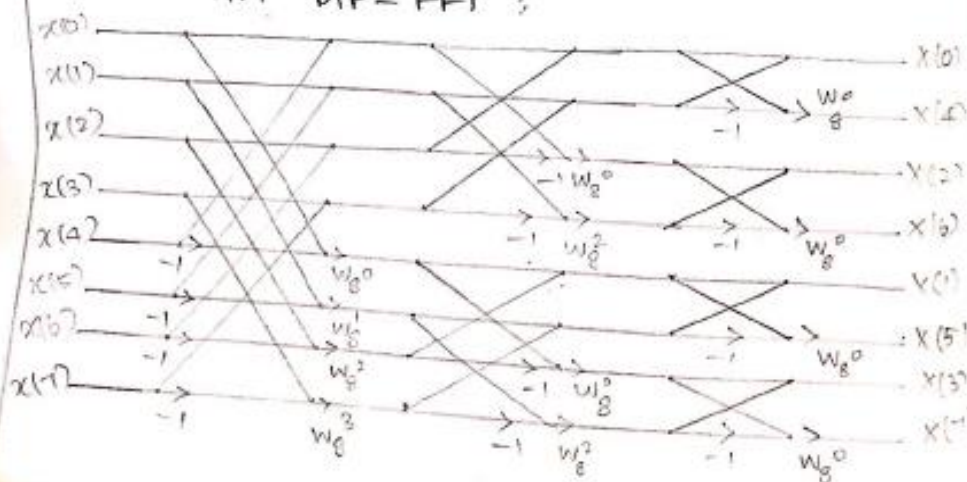# FFT Algorithms- Decimation in Frequency

GENERAL STRUCTURE FOR DIF-FFT :
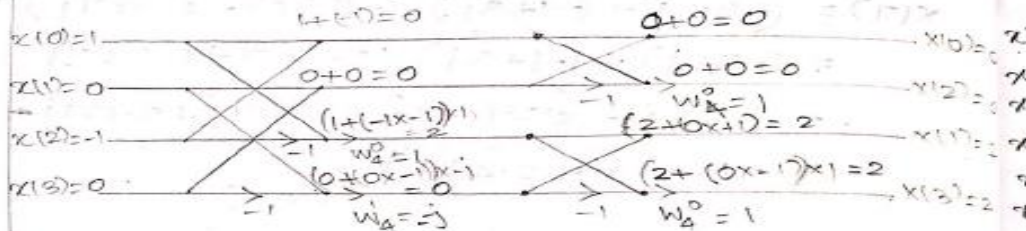
4-POINT DIF-FFT :

8-POINT DIF-FFT :

4-POINT DIF-FFT:

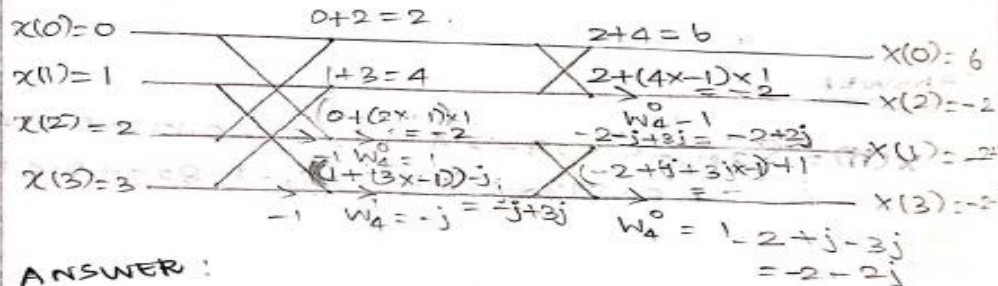1) $x(n) = \{1, 0, -1, 0\}$ using DIF-FFT Algorithm.

SOL: $\boxed{N = 4}$

ANSWER:

$$X(k) = \{0, 2, 0, 2\}$$

2) $x(n) = \{0, 1, 2, 3\}$

SOL:

ANSWER:

$$X(k) = \{6, -2, -2+2j, -2-2j\}$$

$$x(k) = \{6, 0, -4, 0, 0, 0, -4, 0\}$$

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Thank You!