Q.5 Determine the N = 8 point DFT using Radix-4 decimation in time FFT algorithm.

Q.6 (a) Explain Keiser window method for designing FIR filter.

(b) Explain Park-McClellan's method.

Q.7 (a) Explain Butterworth technique for designing low pass IIR filter.

(b) Explain elliptic approximation method for designing band stop IIR filter.

Q.8 Write short notes on any two of the following.

(a) Effect of finite register length in FIR filter design

(b) Chebyshev filter design technique

(c) VLSI DSP

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[Total No. of Questions: 8] *[Total No. of Printed Pages :2]*

Enroll No…….

EC-104

M.Tech.(DC)–I Sem (Reg./Ex.)

Examination, March.-2021

DSP Application

Time: Three Hours

Maximum Marks:70

Note: Attempt any five questions. (Each question carries equal marks)

Q.1 Check the following systems with respect to the following properties

(a) Time invariant or time variant

(b) Causal or non – causal

(i) $y(n) = x(n) \cos(w_0 n)$

(ii) $y(n) = x(-n+2)$

Q.2 Check whether the following systems are linear or non linear

(i) $y(n) = nx(n)$

(ii) $y(n) = A\,x(n) + B$

Q.3 Perform the circular convolution of the following two sequences.

$x_1(n) = \{\underset{\uparrow}{2}, 1, 2, 1\}$, $x_2(n) = \{\underset{\uparrow}{1}, 2, 3, 4\}$

Q.4 Find the DFT of the following finite duration sequence of length

$$X(n) = \begin{cases} A \; for \; 0 \le n \le L-1 \\ 0 \; otherwise \end{cases}$$