S.B. Roll. No……..

DIGITAL SIGNAL PROCESSING
6th Exam/ECE/4614/Jun'2022
(For 2018 Batch onwards)

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. Do as directed. **15x1=15**

a. FIR system can be recursive as well as non-recursive. (T/F).
b. IIR Stands for?
c. DFT of the signal X (t) is given by _____?
d. Write any two types of signals in DSP?
e. The impulse response of FIR filters is_____?
f. Which is more stable filter among FIR and IIR filters?
g. Write two disadvantages of FIR?
h. Name the filters which don't use feedback.
i. Give the standard form of DIT.
j. What is the major similarity between Fourier transform and Z transform?
k. The system given by y(n) = x(n) + 1/x(n - 1) is linear or causal?
l. The fast Fourier transform is used to calculate _____.
m. The z transform of δ[n] is_____?
n. The input of the discrete Time Fourier Transform is _____and_____ .
o. Energy is a non-periodic signal.(T/F)

SECTION-B

Q2. Attempt any six questions. **6x5=30**

i. List the basic elements of Digital Signal Processing.
ii. List two properties of Z- transform.
iii. Differentiate between FIR and IIR filters.
iv. Discuss time shifting property of DFT.
v. What do you mean by correlation? Explain with example.
vi. Whether y (n) =sin 3n is a periodic or non periodic?
vii. Differentiate between Continuous time and discrete time signal.
viii. Explain the use of DFT in linear filtering.

SECTION-C

Q3. Attempt any three questions. **3x10=30**

a. Write various application and features of DSP processors.
b. Explain discrete Fourier transform and various properties of DFT.
c. Explain discrete time systems with help of the block diagram and also define the conditions for a system to be causal or non-causal.
d. Explain the advantages of Digital Signal Processing over Analog Signal Processing also explain the design steps for any one of the filter structure?