DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Semester Examination – winter 2018

Course: Electrical Engineering **Sem.:- III**

Subject with Subject Code: - Signals and Systems (BTEEE305C)

Date: - 10-12-2018 **Marks: 60M** **Time: - 3 Hr.**

Instructions to the Students

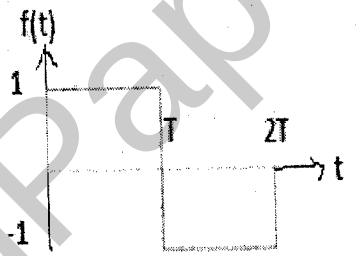
1. *Each question carries 12 marks.*
2. *Attempt **any five** questions of the following.*
3. *Illustrate your answers with neat sketches, diagram etc., wherever necessary.*
4. *If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly*

(Marks)

Q.1. a] Explain in detail continuous and discrete time domain signal. (06m)
b] Explain in detail Linear& Non-linear system (06m)

Q.2. a] Explain in detail properties of LTI system (06m)
b] Explain the following operations on signal (06m)
i.) Time advance ii) time delay iii) folding

Q.3. a] Find the Laplace Transform of the square wave shown in figure (06m)



b] Explain in detail properties of Fourier Transform (06m)

Q.4. a] Determine zero input response of system described by second order Difference equations (06m)

$$Y[n]-5/6\ Y[n-1]+1/6\ Y[n-2]=0$$

b] Explain in detail state variable equations and matrix representations of the System (06m)

Q.5. a) Explain in detail properties of z-transform (06m)
b) Explain in detail sampling of the signal (06m)

Q.6. a) Explain in detail convolution sum (06m)
b) Calculate the DFT of the sequence x (n) = {1, 1, 0, 0} (06m)