

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Semester Examination – winter 2018

Course: Electrical Engineering

Sem.:- III

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

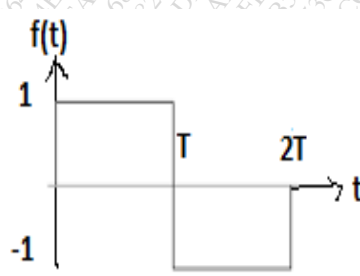
Date: - 10-12-2018

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) |