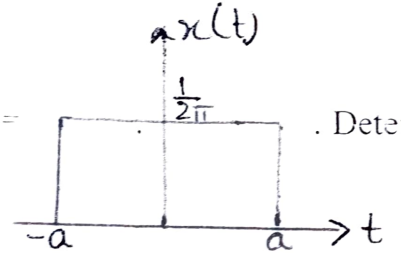
YMCA UNIVERSITY OF SCIENCE AND TECHNOLOGY, FARIDABAD

SESSIONAL-II B.Tech Nov, 2018

Signals and System (3rd sem. EIC)

MM: 15 **TIME: 90 MIN**

Q1. (3) CO2

If x(t)= 

. Determine the Fourier Transform of $\frac{\sin at}{\pi t}$.

Q2. Consider a continuous time LTI system defined by differential equation (3) CO3

$y''(t) + 3y'(t) + 2y(t) = x(t)$ where $x(t) = 4e^{-2t}u(t)$ and $y(0) = 3$ and $y'(0) = 4.0$

Determine Zero Input Response of system.

Q3. Determine the Laplace Transform of $e^{-t}u(t)$. also plot its ROC. (2) CO3

Q4. $X(z)=\frac{1}{1+2z^{-1}+3z^{-2}}$. Find x(0) and x(∞). (3) CO3

Q5. State and prove Sampling theorem. (4) CO4