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CS466: Assignment 3

1.

$p_1 = 1x10^{-7}$	$q_1 = 1/20 * (0.5) = 0.025$	reject
$p_2 = 1x10^{-6}$	$q_2 = 2/20 * (0.5) = 0.05$	reject
$p_3 = 1x10^{-5}$	$q_3 = 3/20 * (0.5) = 0.075$	reject
$p_4 = 1x10^{-4}$	$q_4 = 4/20 * (0.5) = 0.1$	reject
$p_5 = 1x10^{-3}$	$q_5 = 5/20 * (0.5) = 0.125$	reject
$p_6 = 0.01$	$q_6 = 6/20 * (0.5) = 0.15$	reject
$p_7 = 0.02$	$q_7 = 7/20 * (0.5) = 0.175$	reject
$p_8 = 0.04$	$q_8 = 8/20 * (0.5) = 0.2$	reject
$p_9 = 0.05$	$q_9 = 9/20 * (0.5) = 0.225$	reject
$p_{10} = 0.07$	$q_{10} = 10/20 * (0.5) = 0.25$	reject
$p_{11} = 0.17$	$q_{11} = 11/20 * (0.5) = 0.275$	reject
$p_{12} = 0.21$	$q_{12} = 12/20 * (0.5) = 0.3$	reject
$p_{13} = 0.30$	$q_{13} = 13/20 * (0.5) = 0.325$	reject
$p_{14} = 0.41$	$q_{14} = 14/20 * (0.5) = 0.35$	accept
$p_{15} = 0.45$	$q_{15} = 15/20 * (0.5) = 0.375$	accept
$p_{16} = 0.53$	$q_{16} = 16/20 * (0.5) = 0.4$	accept
$p_{17} = 0.71$	$q_{17} = 17/20 * (0.5) = 0.425$	accept
$p_{18} = 0.82$	$q_{18} = 18/20 * (0.5) = 0.45$	accept
$p_{19} = 0.91$	$q_{19} = 19/20 * (0.5) = 0.475$	accept
$p_{20} = 0.95$	$q_{20} = 20/20 * (0.5) = 0.5$	accept

$p_1 - p_{13}$ are rejected and $p_{14} - p_{20}$ are accepted by the FDR at 50%

2.

a. immune system process, p-value = $5.1x10^{-30}$
b. RNA metabolic process, p-value = $5.6x10^{-11}$