

## Answers to exam 20180601

1. Delivers 5mW

2.  $I_N = 0.2 \text{ mA}$   $R_{TH} = 25 \text{ k}\Omega$

3.  $I_2 = 1.65 \text{ mA}$

4. a)  $V_{out} = 45 \left( \frac{R_4}{R_4 + 2} \right)$  unit of  $R_4$  is  $\text{k}\Omega$

b)  $0 < R_4 < 1 \text{ k}\Omega$

5.  $V_C = 4.2 \text{ V}$

6.  $t = 3.7 \mu\text{s}$

7.  $V_{TH} = 2 \cos(\omega t - 30^\circ)$   $R_{TH} = 250 \Omega$

8.a) band pass,

b)  $10 \cos(\omega t)$

c)  $\cos(\omega t + 90^\circ)$