

d) A DSB signal is given as $x(t) = [20 + 2 \cos(3000\pi t) + 10 \cos(6000\pi t)] \cos(2\pi f_c t)$,
where $f_c = 10^5 \text{ Hz}$.

- i. Draw the frequency spectrum of the DSB signal.
- ii. Determine the modulation efficiency of the DSB signal.

[5 marks]