

Part 1

1Ans 2Ω & 3Ω are in series
so 5Ω and this is parallel
to the 5Ω

$$R_{eq} = \frac{25}{10} = 2.5$$

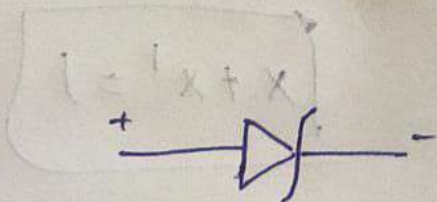
2.5Ω series with 1.5

so 4Ω and it is parallel
to 4Ω

$$R_{eq} = \frac{4 \times 4}{4 + 4} = \frac{16}{8} = 2\Omega$$

So R_{eq} is 2Ω //

2Ans . The function of zener diode is
to maintain constant voltage



It is used in voltage regulation
or protection from voltage fluctuation

3Ans Given

System powered by 7.4V

2600mAh Li-po battery

active time 2 min, 200mA (3.3V)

$$\text{Input current} = \frac{200}{0.65} = 308 \text{ mA}$$

sleep : 50 μ A for 9 min

$$I_{\text{average}} = \frac{(308 \times 2) + (0.05 \times 8)}{10}$$

$$\approx 60 \text{ mA}$$

so battery average current is 60mA.

4Ans

$$A \cdot (B+C) + A \cdot (B+C)'$$

$$A \cdot ((B+C) + (B+C)')$$

$$\boxed{X + X' = 1}$$

$$A \cdot (1)$$

A

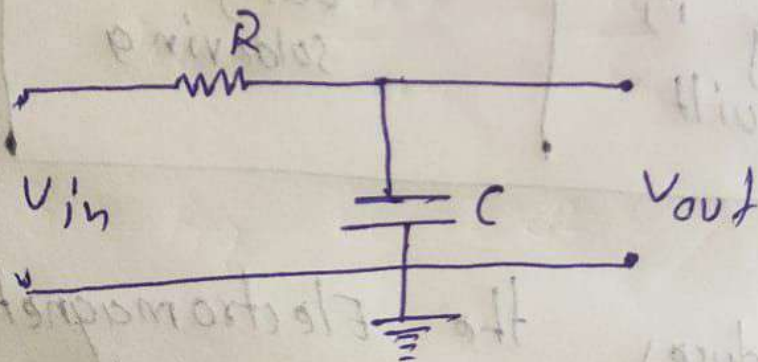
5A. Use multimeter to resistance mode
Note when we place lead across
resistor it shows infinite resistance
then it is open ckt.

6A. $27 \times 10 = 270 \Omega$

Tolerance = $\pm 5\%$

7A. The cause can be
impedance mismatch or due to
long traces. we can fix by shortening
the traces.

8A.



above cutoff the signal amplitude
decreases at -20 dB/decade

- It is used in noise removing
- Its limitation is slow response