

## Part 1

1ans

2Ω & 3Ω are in series

so 5Ω and this is parallel

to the 5Ω

$$R_{eq} = \frac{2\Omega}{10} = 2.5$$

2.5Ω series with 1.5

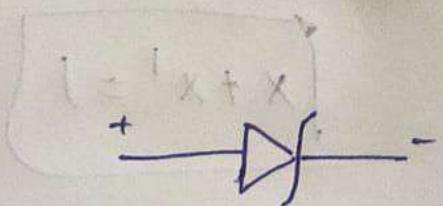
so 4Ω and it is parallel

to 4Ω

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

so  $R_{eq}$  is  $2\Omega //$

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 7.4 V

2600 mAh Li-po battery

active time 2 min, 200 mA (3.3V)

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

Sleep : 50 μA for 8 min

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

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

so ~~battery~~ average current is 60 mA.

4Ans  $A \cdot (B+C) + A \cdot (B+C)'$

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

$$A \cdot (1)$$

$$x + x' = 1$$

$$\underline{\underline{A}}$$

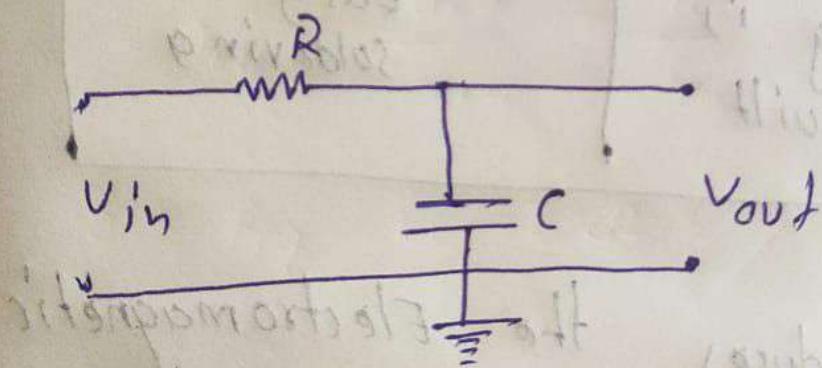
5A. Use multimeter to resistance mode  
Note when we place lead across resistor it shows infinite resistance  
then it is open ckt.

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 cut-off the signal amplitude decreases at  $-20 \text{ dB/decade}$

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