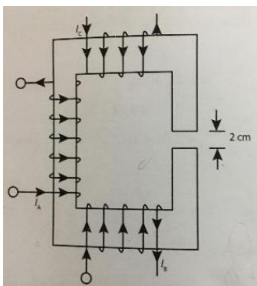


Assignment BEEE Unit 4 and Unit 5

1	Define P-N junction diode. Explain its operation in forward biased condition and reverse biased condition.	2
2	Define threshold voltage and peak inverse voltage.	2
3	Define half wave rectifier. What is the need of rectification?	2
4	Define Rectifier. Explain the working principle of Bridge full wave rectifier with neat diagram. Also write its ripple factor and efficiency formula.	5
5	Explain the significance of three terminals of bipolar junction transistor, with neat diagram explain common emitter & common base transistor configuration with its current amplification factor and output current equation.	10
6	Differentiate between sensor & transducer.	2
7	What are the main elements of a biosensor?	2
8	Mention any two applications of biosensors.	2
9	Classify analog & digital sensors with their functions and applications.	5
10	Define Transducers. Write its classification and characteristics in detail.	5
11	What is a sensor? What is the criteria to choose a sensor? Explain the different types of sensors with their functions and applications.	10
12	What are biosensors? Describe its main components, working principle and applications in healthcare.	10
13	What are transducers? Mention their different types & their working principle.	10
14	<p>Rectangular iron core with a cut size of 2 cm as shown in given figure, details are as follows – mean length of magnetic circuit= 50 cm, cross section area= 3 cm x 3 cm, Relative permeability= 1000, No of turns in each coil= 200, Current in each coil= 5A. Calculate Flux in air gap.</p>  <p>Reluctance of Air Gap $S = \frac{l}{\mu_0 A} = \frac{0.02}{4\pi \times 10^{-7} \times 0.03 \times 0.03} = 1.77 \times 10^7 \text{ AT/Wb}$</p> <p>Total MMF= $3 \times N \times I = 3 \times 200 \times 5 = 3000 \text{ AT}$</p> <p>Flux in Air Gap $\phi = \frac{MMF}{S} = \frac{3000}{1.77 \times 10^7} = 16.94 \times 10^{-5} \text{ Wb}$</p>	10