

## “Surprise” Quiz II

$$\lambda/2 = 30 \text{ cm}$$

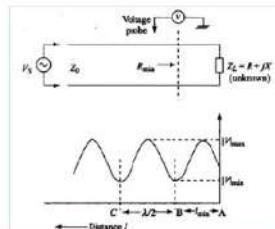
$$\lambda = 60 \text{ cm}$$

$$\beta = \frac{2\pi}{\lambda} = \frac{\pi}{30} \text{ rad/cm}$$

$$l_{\min} = 15 + 6 = 21 \text{ cm}$$

$$\beta l_{\min} = \frac{\pi}{30} \times 21 \text{ rad} = 126^\circ$$

A 50 Ohm line is terminated in an unknown impedance  $Z$ . The distance of the voltage max from the load is 6 cm. The distance between two consecutive maxima is 30 cm. The VSWR is 3. Find the unknown impedance  $Z$ .



- 1) Based on the problem statement, what is the type of load you expect? Why? Proper reasoning is expected [3]
- 2) What is the kind of load as per the solution? [2]
- 3) Can you find the unknown load by simply translating from the maxima point? Do you obtain a different answer? [2]
- 4) Is there a mistake in the above solution? If so how and why? [4]
- 5) If there is an error, what is the correct solution? Can you reconcile with part (3) above? [4]

