PHYSICS

41. (4)

Current, $\dfrac{I_n}{I_p} = \dfrac{\mu_e}{\mu_h}$ $\mu_e > \mu_h$

$I_n > I_p$

therefore current in n-type > current in p-type

42. (4)

A zener diode is connected in reverse biased when used as voltage regulator as in reverse biased after breakdown, voltage becomes constant

43. (3)

The given circuit is a circuit of full wave rectifier.

44. (2)

45. (2)

Majority carries in an n-type semiconductor are electrons.

46. (2)

47. (2)

By Newton's formula,

$x_1 x_2 = f^2 \Rightarrow \sqrt{x_1 x_2}$

48. (3)

49. (3)

Here $m = -\dfrac{v}{u} = 4 \Rightarrow v = -4u$

By mirror formula , $\dfrac{1}{-4u} + \dfrac{1}{u} = \dfrac{1}{f}$

$\Rightarrow f = \dfrac{4}{3} u$ but $u = -0.6\,s$ of $f = -0.8\,cm$

$\Rightarrow R = 1.6\,cm\,(concave)$

50. (3)

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