

The density of a material in SI unit is  $128 \text{ kg m}^{-3}$ . In certain units in which the unit of length is 25 cm and the unit of mass is 50 g, the numerical value of density of the material is: **[Main 10 Jan. 2019 (I)]**

- (a) 40      (b) 16      (c) 640      (d) 410

(a) Density of material in SI unit,

$$= \frac{128\text{kg}}{\text{m}^3}$$

Density of material in new system

$$= \frac{128(50\text{g})(20)}{(25\text{cm})^3 (4)^3} = \frac{128}{64}(20) = 40 \text{ units}$$