

## Worksheet: Mechanical Properties of Solids

NIOS · Class 11 · Physics · 5 questions · 13 marks

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 13

**Q1.** Which has the higher Young's modulus, rubber or steel? [2 marks]

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**Q2.** Why does a wire become thinner when stretched? [2 marks]

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**Q3.** A 3 m steel wire ( $Y = 2 \times 10^{11}$  Pa, area  $2 \text{ mm}^2$ ) carries a 100 kg load. Find the elongation ( $g = 10 \text{ m/s}^2$ ). [3 marks]

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**Q4.** Water is compressed by 1%. Find the pressure increase ( $B = 2.2 \times 10^9$  Pa). [3 marks]

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**Q5.** A steel wire ( $L = 2 \text{ m}$ , area  $1 \text{ mm}^2$ ,  $Y = 2 \times 10^{11}$  Pa) is stretched by 1 mm. Find the energy stored. [3 marks]

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