MECHANICAL PROPERTIES OF SOLIDS

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General Instructions: Answer all the questions. If you are unable to answer any question, go through the page number that is given against that particular question in the text book. You can find the answer.
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Test Paper-II

MAX MARKS: 20   TIME: 60Mts

1	Define shear modulus of elasticity. Derive an expression to find the same.	P238	3
2	A square lead slab of side 50 cm and thickness 10cm is subject to a shearing force of 9.0×10^4 N. The lower edge is riveted to the floor. How much will the upper edge be displaced?	P238	3
3	What is meant Bulk Modulus? Write the expression for finding the Bulk modulus. What is the significance of negative sign in the expression for Bulk Modulus? How is it related to compressibility?	P238	3
4	Why solids are less compressible than that of liquids or gases? The average depth of an Indian ocean is about 3000m.Calculate the fractional compression, $\Delta V/V$, of water at the bottom of the ocean, given that the bulk modulus of water is 2.2×10^9N m^{-2}. (Take g= 10ms^{-2})	P239	3
5	Why the beams used in construction of bridges as supports have a cross-section of the type **I** Explain why?	P240	3
6	Explain why the maximum height of a mountain on earth is 10 km?	P241	3
7	What is meant by buckling? What is the amount of sag suffered by a bar of length l, breadth b, and depth d when loaded at the Centre by a load W.	P240	2