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PHYSICS · EAPCET (EAMCET)

Elasticity

Previous Year Questions with answers

149 questions · **137** papers · **2010–2026** · newest paper first

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What is in this PDF: every Elasticity question we hold from past AP and TS EAPCET (called EAMCET until 2020 in Andhra Pradesh and 2023 in Telangana) papers, with its options and answer. Where an answer comes from a source other than the official final key, it says so next to the answer.

Step-by-step solutions for every question are free in the EdLoop EAPCET app (Google Play) and on app.edloop.in. More chapters: pyq.edloop.in/free-pdfs/

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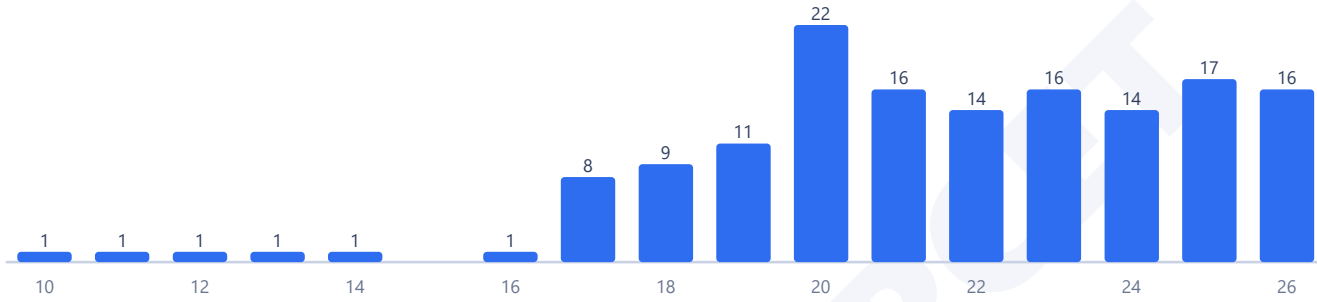
Chapter at a glance

2.5%	149	73 of 77	149 / 0
of Physics questions, 2022–2026	questions, 2010–2026	papers asked it, 2022–2026	MCQ / numerical, 2010–2026

Trend. Steady: 1 questions per paper in 2024–2026 against 1 in 2022–2023.

Questions per year



Counts are the questions we hold: 149 in 137 papers. No question in this chapter was found repeated across papers.

Most-asked topics in this chapter (2010–2026)

Stress, Strain & Moduli	119
Elastic Energy & Applications	30

How often it comes up

Class 11 mechanics includes Elasticity as a compact, dependable unit. In the papers we hold for AP and TS EAPCET from 2022 to 2026, the chapter contributed 77 questions across 77 papers. That yields an average of 1.0 question per paper, accounting for 2.5% of all physics questions in that recent window. Looking across all years in our archive from 2010 to 2026, Elasticity brought 149 questions across 149 papers, maintaining an average of 1.0 question per paper and a 2.5% subject share. Across the earlier window from 2010 to 2021, our archive records 72 questions across 72 papers (2.5% share). In the last three exam years from 2024 to 2026, it provided 47 questions across 46 papers, holding a 2.6% share. The share of the subject in the last three years compared to early papers is about the same, and compared to the recent five-year window it is also about the same.

State-wise patterns in the recent window reveal steady inclusion on both sides of the border. AP EAPCET papers from 2022 to 2026 contributed 49 questions across 48 papers in our set, with 45 papers containing at least one question and a 2.6% share of physics. TS EAPCET contributed 28 questions across 29 papers in our set, with 28 papers featuring the topic and a 2.4% share. Elasticity has appeared every year since 2022, though with 73 out of 77 recent papers carrying a question, it was absent from four sittings. It ranks 22nd of 28 physics chapters by question share between 2022 and 2026. The busiest single sitting in our collection was 2020, with 22 questions across 18 papers.

Most-asked topics

Questions in Elasticity fall into two clear syllabus areas:

- **Stress, Strain & Moduli**: 58 questions in the recent 2022–2026 period and 119 questions across all years in our archive. This dominant area covers Hooke's law, Young's modulus, bulk modulus, shear modulus, Poisson's ratio, and the interpretation of tensile stress-strain curves.
- **Elastic Energy & Applications**: 19 questions between 2022 and 2026 and 30 questions across all years. It tests the work done in stretching or compressing a wire, strain energy density per unit volume, thermal stress in clamped rods, and composite wire systems.

What the questions look like

Numerical problems are largely direct algebraic evaluations. A frequent pattern asks for the elongation of a suspended wire under its own weight or carrying a hanging mass, often comparing two wires of different lengths, radii, or materials. Another recurring setup connects Young's modulus with dynamic situations, such as a wire whirling a mass in a horizontal circle or experiencing sudden tension.

Poisson's ratio questions appear regularly in both state exams. Examiners give the fractional change in length or longitudinal strain along with Poisson's ratio to ask for the resulting lateral strain, the fractional change in diameter, or the volumetric strain. You must remember the volumetric strain formula $\Delta V/V = (\Delta L/L)(1 - 2\sigma)$ and recognise when lateral contraction reduces or increases total volume. Theoretical questions test ductile versus brittle materials, the distinction between proportional limit and yield point, and the work done represented by the area beneath a force-extension curve.

How to practise it

Start by mastering the three primary elastic moduli: Young's modulus $Y = (F\ L) / (A\ \Delta L)$, shear modulus $\eta = (F / A) / \theta$, and bulk modulus $B = - \Delta P / (\Delta V / V)$. Make sure you can write each modulus in terms of wire dimensions, particularly noting that cross-sectional area involves radius squared, meaning doubling the wire diameter cuts elongation by a factor of four for identical loads.

Next, practise strain energy calculations. The total energy stored in a stretched wire is $U = (1/2)\ F\ \Delta L$, while energy per unit volume is $(1/2) \times \text{stress} \times \text{strain} = (1/2)\ Y\ (\text{strain})^2$. Notice that work done by the stretching weight mg is $mg\ \Delta L$, of which exactly half is stored as elastic strain energy and the remaining half is dissipated as heat.

Finally, work through thermal stress and composite wire arrangements. When a rod fixed rigidly between two immovable walls undergoes a temperature drop or rise ΔT, the thermal strain is $\alpha\ \Delta T$, generating an internal thermal stress of $Y\ \alpha\ \Delta T$ and an exerted force of $Y\ A\ \alpha\ \Delta T$.

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Q1 AP EAPCET 2026 · 18 May · Shift 1 MCQ

When a uniform bar of length 'l' breadth 'b' and thickness 'd' was supported by rigid supports near the ends and loaded at the center by a vehicle of mass M, it sags the bar by an amount δ is (Young's modulus of material is Y)

(A) $\frac{Ml^3}{4bd^3Y}$
(B) $\frac{Yl^3}{4Mgbd^3}$
(C) $\frac{Yd^3}{4Mgl^3b}$
(D) $\frac{Mgl^3}{4bd^3Y}$

Answer: (D) $\frac{Mgl^3}{4bd^3Y}$ · The council's preliminary key

Q2 AP EAPCET 2026 · 18 May · Shift 2 MCQ

A uniform metal wire is suspended from a rigid ceiling and a solid sphere is attached to the second end of the wire. If the radius of the sphere is doubled and then immersed in a liquid whose density is 60% of the density of the material of the sphere, then the percentage increase in the elongation of the wire is

(A) 420
(B) 120
(C) 220
(D) 320

Answer: (C) 220 · The council's preliminary key

Q3 AP EAPCET 2026 · 15 May · Shift 1 MCQ

A wire of weight W and area of cross-section A elongates under its own weight. If Y is the Young's modulus and σ is the Poisson's ratio of the material of the wire, then the fractional change in the radius of the wire is

(A) $\frac{2\sigma W}{AY}$
(B) $\frac{\sigma W}{2AY}$
(C) $\frac{\sigma W}{3AY}$
(D) $\frac{\sigma W}{AY}$

Answer: (B) $\frac{\sigma W}{2AY}$ · The council's preliminary key

Q4 AP EAPCET 2026 · 15 May · Shift 2 MCQ

When a wire of length 'L' and radius 'r', fixed at one end is stretched by a force F, the increase in its length is 'x'. If another wire made of same material of length '2L' and radius '2r' is stretched by force '2F', the increase in its length will be

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(A) x

(B) $2x$

(C) $\frac{x}{2}$

(D) $\frac{x}{4}$

Answer: (A) x · The council's preliminary key

Q5 AP EAPCET 2026 · 14 May · Shift 1 MCQ

The elastic behavior of a material for linear stress to linear strain is given in the figure. The energy density for a linear strain of 4×10^{-4} is
(material is elastic upto linear strain of 4×10^{-4})

(see the figure above)

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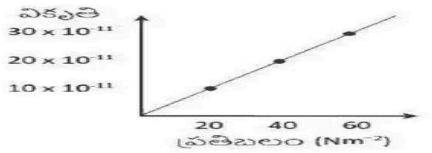
పటములో ఒక వస్తువు యొక్క రేఖీయ ప్రతిబలము మరియు రేఖీయ వికృతిల మధ్య స్థితిస్థాపక స్వభావము చూపబడినది. అయిన 4×10^{-4} వికృతికి, శక్తి సాంద్రత విలువ
(వస్తువు 4×10^{-4} రేఖీయ వికృతి వరకు స్థితిస్థాపకతను ప్రదర్శించును)



Options :

1. $20000\ \mathrm{J\,m^{-3}}$
2. $16000\ \mathrm{J\,m^{-3}}$
3. $12000\ \mathrm{J\,m^{-3}}$
4. $8000\ \mathrm{J\,m^{-3}}$

(A) $20000\ \mathrm{J\,m^{-3}}$

(B) $16000\ \mathrm{J\,m^{-3}}$

(C) $12000\ \mathrm{J\,m^{-3}}$

(D) $8000\ \mathrm{J\,m^{-3}}$

Answer: (B) $16000\ \mathrm{J\,m^{-3}}$ · The council's preliminary key

Q6 AP EAPCET 2026 · 14 May · Shift 2 MCQ

The pressure applied on a cube from all sides is 'P'. In order to keep its volume constant, the temperature of cube is to be raised by
(The Bulk modulus and the coefficient of volume expansion of the material of the cube are β and α respectively)

(A) $\frac{P}{\alpha\beta}$
(B) $\frac{P\alpha}{\beta}$
(C) $\frac{P\beta}{\alpha}$
(D) $\frac{\alpha\beta}{P}$

Answer: (A) $\frac{P}{\alpha\beta}$ · The council's preliminary key

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Q7 AP EAPCET 2026 · 13 May · Shift 1 MCQ

A copper wire of negligible mass, length $1\ m$ and area of cross-section $10^{-6}m^2$ is kept on a smooth horizontal table. One end of the wire is fixed and other end of the wire attached with a ball of mass $1\ kg$. If the ball and wire are rotating with $20\ \text{rad s}^{-1}$, an elongation of $10^{-3}m$ is observed in the wire, find its Young's modulus

(A) $4 \times 10^{11} Nm^{-2}$
(B) $8 \times 10^{11} Nm^{-2}$
(C) $4 \times 10^{8} Nm^{-2}$
(D) $400\ Nm^{-2}$

Answer: (A) $4 \times 10^{11} Nm^{-2}$ · The council's preliminary key

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Q8 AP EAPCET 2026 · 13 May · Shift 2 MCQ

A spring is stretched by applying a load to its free end. The strain produced in the spring is

(A) Volumetric
(B) Shear
(C) Longitudinal and shear
(D) Volumetric and longitudinal

Answer: (C) Longitudinal and shear · The council's preliminary key

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Q9 AP EAPCET 2026 · 12 May · Shift 1 MCQ

A rubber hose $50\ cm$ long and internal diameter $1\ cm$ is stretched to $60\ cm$. The internal diameter of stretched hose is
(Poisson's ratio of the rubber $\sigma = 0.5$)

(A) $8\ mm$
(B) $9\ mm$
(C) $10\ mm$
(D) $7\ mm$

Answer: (B) $9\ mm$ · The council's preliminary key

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Q10 AP EAPCET 2026 · 12 May · Shift 2 MCQ

A book of dimension $4\ \text{cm} \times 1.5\ \text{cm} \times 10\ \text{cm}$ is kept in a way that the $10\ \text{cm}$ edge is vertical. A horizontal force of $3\ \text{N}$ is applied at the top face. If the shear modulus of the book is $2 \times 10^5\ \text{Nm}^{-2}$, then the horizontal displacement of the top face will be

(A) $0.5\ \text{mm}$
(B) $2.5\ \text{mm}$
(C) $5\ \text{mm}$
(D) $10\ \text{mm}$

Answer: (B) $2.5\ \text{mm}$ · The council's preliminary key

Q11 TS EAPCET 2026 · 11 May · Shift 1 MCQ

A metal wire can withstand a maximum tension of 80 N. If the wire is cut into four parts of equal length, then each part can withstand a maximum tension of

(A) 80 N
(B) 20 N
(C) 320 N
(D) 40 N

Answer: (A) 80 N · The council's preliminary key

Q12 TS EAPCET 2026 · 11 May · Shift 2 MCQ

A wire P of length L made of a material of density D and Young's modulus Y elongates by 2.0 mm under its own weight. If another wire Q made of material of density $\frac{2D}{3}$ and Young's modulus $\frac{3Y}{4}$ elongates by 1.0 mm under its own weight, then the length of the wire Q is

(A) 0.75L
(B) 0.50L
(C) 1.25L
(D) 1.75L

Answer: (A) 0.75L · The council's preliminary key

Q13 TS EAPCET 2026 · 10 May · Shift 1 MCQ

When a load is attached at the midpoint of a steel bar A of length 80 cm, breadth 2.5 cm and thickness 2 mm, it sags by 1.2 mm. If the same load is attached at the midpoint of another steel bar B of length 120 cm, breadth 3 cm and thickness 3 mm, the bar B sags by
(In both the cases, the bars are supported at the two ends)

(A) 0.18 cm
(B) 0.10 cm
(C) 0.12 cm
(D) 0.15 cm

Answer: (B) 0.10 cm · The council's preliminary key

Q14 TS EAPCET 2026 · 10 May · Shift 2 MCQ

In the strain-stress curve for a material, if the ultimate strength and fracture points are close, then the material is

(A) Ductile
(B) Elastomer
(C) Brittle
(D) Plastic

Answer: (C) Brittle · The council's preliminary key

Q15 TS EAPCET 2026 · 9 May · Shift 1 MCQ

If the Poisson's ratio of the material of a wire is 0.35, then the ratio of the longitudinal and volume strains of the wire is

(A) $1:2$
(B) $10:3$
(C) $7:10$
(D) $3:7$

Answer: (B) $10:3$ · The council's preliminary key

Q16 TS EAPCET 2026 · 9 May · Shift 2 MCQ

A wire of length 100 cm is made of a material of Young's modulus $1.6 \times 10^{11}\ \mathrm{Nm}^{-2}$. If the work done in stretching this wire by 0.1 cm is 2 J, then the area of cross-section of the wire (in $10^{-5}\ \mathrm{m}^2$) is

(A) 5.0
(B) 1.25
(C) 1.5
(D) 2.5

Answer: (D) 2.5 · The council's preliminary key

Q17 AP EAPCET 2025 · 27 May · Shift 1 MCQ

The stress - strain graph of two wires A and B is shown in the figure. If Y_A and Y_B are Young's moduli of materials of wires A and B respectively, then

(see the figure above)

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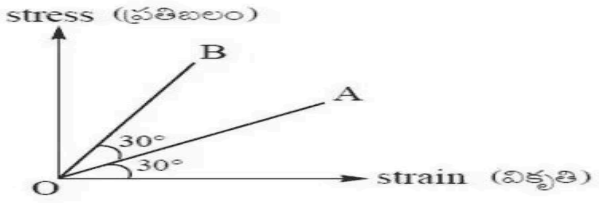
The stress - strain graph of two wires A and B is shown in the figure. If Y_A and Y_B are Young's moduli of materials of wires A and B respectively, then

A మరియు B అనే రెండు తీగల ప్రతిబలం–వికృతుల మధ్య గ్రాఫ్ పటంలో చూపబడినది. Y_A మరియు Y_B లు వరుసగా A మరియు B తీగల పదార్థాల యంగ్ గుణకాలైతే, అప్పుడు



Options :

1. $Y_A = 3Y_B$
2. $Y_A = Y_B$
3. $Y_B = 3Y_A$
4. $Y_B = 2Y_A$

(A) $Y_A = 3Y_B$
(B) $Y_A = Y_B$
(C) $Y_B = 3Y_A$
(D) $Y_B = 2Y_A$

Answer: (C) $Y_B = 3Y_A$ · The council's preliminary key

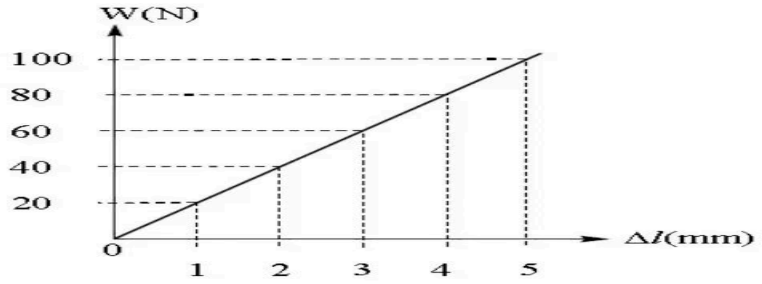
Q18 AP EAPCET 2025 · 26 May · Shift 1 MCQ

If the given graph shows the load (W) attached to and the elongation (Δl) produced in a wire of length one meter and area of cross-section $1\ \mathrm{mm}^2$, then the Young's modulus of the material of the wire is

(see the figure above)

If the given graph shows the load (W) attached to and the elongation (Δl) produced in a wire of length one meter and area of cross-section 1 mm^2, then the Young's modulus of the material of the wire is

ఇవ్వబడిన గ్రాఫ్ ఒక మీటర్ పొడవు మరియు 1 mm^2 మధ్యచ్ఛేద వైశాల్యం గల ఒక తీగకు తగిలించబడిన భారం (W) మరియు తీగలోని సాగుదల (Δl) ను సూచించిన, ఆ తీగ పదార్థపు యంగ్ గుణకం



Options :

1. $20 \times 10^{10}\ N\ m^{-2}$
2. $2 \times 10^{10}\ N\ m^{-2}$
3. $10 \times 10^{10}\ N\ m^{-2}$
4. $4 \times 10^{10}\ N\ m^{-2}$

(A) $20 \times 10^{10}\ \mathrm{N\,m^{-2}}$
(B) $2 \times 10^{10}\ \mathrm{N\,m^{-2}}$
(C) $10 \times 10^{10}\ \mathrm{N\,m^{-2}}$
(D) $4 \times 10^{10}\ \mathrm{N\,m^{-2}}$

Answer: (B) $2 \times 10^{10}\ \mathrm{N\,m^{-2}}$ · The council's preliminary key

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Q19 AP EAPCET 2025 · 26 May · Shift 2 MCQ

The elastic potential energy stored in a copper rod of length one metre and area of cross-section $1\,mm^2$ when stretched by 1 mm is

(Young's modulus of copper $= 1.2 \times 10^{11}\ \mathrm{Nm^{-2}}$)

(A) $6 \times 10^{-2}\ \mathrm{J}$
(B) $3 \times 10^{-2}\ \mathrm{J}$
(C) $60\ \mathrm{J}$
(D) $3\ \mathrm{J}$

Answer: (A) $6 \times 10^{-2}\ \mathrm{J}$ · The council's preliminary key

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Q20 AP EAPCET 2025 · 24 May · Shift 1 MCQ

A wire is stretched 1 mm by a force F. If a second wire of same material, same length and 4 times the diameter of the first wire is stretched by the same force F, then the elongation of the second wire is

(A) $\frac{1}{8}$ mm
(B) 8 mm
(C) 16 mm
(D) $\frac{1}{16}$ mm

Answer: (D) $\frac{1}{16}$ mm · The council's preliminary key

Q21 AP EAPCET 2025 · 23 May · Shift 1 MCQ

If the pressure on a body is increased from 200 kPa to 250 kPa, the volume of the body decreases by 0.25%. The compressibility of the material of the body is (in $\mathrm{m^2\,N^{-1}}$)

(A) 2×10^{7}
(B) 2×10^{-7}
(C) 5×10^{8}
(D) 5×10^{-8}

Answer: (D) 5×10^{-8} · The council's preliminary key

Q22 AP EAPCET 2025 · 23 May · Shift 2 MCQ

If the longitudinal strain of a stretched wire is 0.2 % and the Poisson's ratio of the material of the wire is 0.3, then the volume strain of the wire is

(A) 0.12%
(B) 0.08%
(C) 0.14%
(D) 0.26%

Answer: (B) 0.08% · The council's preliminary key

Q23 AP EAPCET 2025 · 22 May · Shift 1 MCQ

The force required to stretch a steel wire of area of cross-section $1\ \mathrm{mm^2}$ to double its length is (Young's modulus of steel $= 2 \times 10^{11}\ \mathrm{N\,m^{-2}}$)

(A) $2 \times 10^{3}\ \mathrm{N}$
(B) $2 \times 10^{5}\ \mathrm{N}$
(C) $2 \times 10^{2}\ \mathrm{N}$
(D) $2 \times 10^{4}\ \mathrm{N}$

Answer: (B) $2 \times 10^{5}\ \mathrm{N}$ · The council's preliminary key

Q24 AP EAPCET 2025 · 22 May · Shift 2 MCQ

When a wire made of material with Young's modulus Y is subjected to a stress S, the elastic potential energy per unit volume stored in the wire is

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(A) $\frac{YS}{2}$
(B) $\frac{S^2Y}{2}$
(C) $\frac{S^2}{2Y}$
(D) $\frac{S}{2Y}$

Answer: (C) $\frac{S^2}{2Y}$ · The council's preliminary key

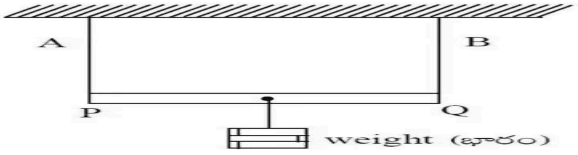
Q25 AP EAPCET 2025 · 21 May · Shift 1 MCQ

As shown in the figure, a light uniform rod PQ of length 150 cm is suspended from the ceiling horizontally using two metal wires A and B tied to the ends of the rod. The ratios of the radii and the Young's moduli of the materials of the two wires A and B are respectively $2:3$ and $3:2$. The position at which a weight should be suspended from the rod such that the elongations of the two wires become equal is

(see the figure above)

As shown in the figure, a light uniform rod PQ of length 150 cm is suspended from the ceiling horizontally using two metal wires A and B tied to the ends of the rod. The ratios of the radii and the Young's moduli of the materials of the two wires A and B are respectively 2 : 3 and 3 : 2. The position at which a weight should be suspended from the rod such that the elongations of the two wires become equal is

పటంలో చూపిన విధంగా 150 cm పొడవు గల ఒక తేలికైన ఏకరీతి కడ్డీ PQ చివరలను A మరియు B అను రెండు లోహపు తీగలకు కట్టి ఒక పైకప్పు నుండి కడ్డీ క్షితిజ సమాంతరంగా ఉండునట్లు క్రేలాడదీసారు. A మరియు B తీగల వ్యాసార్ధాల మరియు పదార్థాల యంగ్ గుణకాల నిష్పత్తులు వరుసగా 2 : 3 మరియు 3 : 2. రెండు తీగలలోని సాగుదలలు సమానంగా ఉండుటకు, కడ్డీ నుండి ఒక భారమును క్రేలాడదీయవలసిన స్థానం



Options :

1. 90 cm from P
   P నుండి 90 cm
2. 100 cm from P
   P నుండి 100 cm
3. 40 cm from Q
   Q నుండి 40 cm
4. 45 cm from Q
   Q నుండి 45 cm

(A) 90 cm from P
(B) 100 cm from P
(C) 40 cm from Q
(D) 45 cm from Q

Answer: (A) 90 cm from P · The council's preliminary key

Q26 AP EAPCET 2025 · 21 May · Shift 2 MCQ

When a wire of length 'L' clamped at one end is pulled by a force 'F' from the other end, its length increases by 'L'. If the radius of the wire and the applied force were halved, then the increase in its length is

(A) 3L
(B) 4L
(C) 1.5L
(D) 2L

Answer: (D) 2L · The council's preliminary key

Q27 AP EAPCET 2025 · 21 May · Shift 2 MCQ

When a sphere is taken to the bottom of a sea of depth 1 km, it contracts in volume by 0.01%, then the bulk modulus of the material of the sphere is (Acceleration due to gravity = $10\ \mathrm{m\,s^{-2}}$)

(A) $10 \times 10^{6}\ \mathrm{N\,m^{-2}}$
(B) $1.2 \times 10^{10}\ \mathrm{N\,m^{-2}}$
(C) $10 \times 10^{10}\ \mathrm{N\,m^{-2}}$
(D) $10 \times 10^{11}\ \mathrm{N\,m^{-2}}$

Answer: (C) $10 \times 10^{10}\ \mathrm{N\,m^{-2}}$ · The council's preliminary key

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Q28 TS EAPCET 2025 · 4 May · Shift 1 MCQ

The work to be done to produce a strain of 10^{-3} in a steel wire of mass 2.96 kg and density $7.4\ \mathrm{g\,cm^{-3}}$ is

(Young's modulus of steel $= 2 \times 10^{11}\ \mathrm{N\,m^{-2}}$)

(A) 0.04 kJ
(B) 0.04 J
(C) 100 kJ
(D) 400 J

Answer: (A) 0.04 kJ · The council's preliminary key

Q29 TS EAPCET 2025 · 4 May · Shift 2 MCQ

A steel rod with a circular cross-section of diameter 1cm and another steel rod with a square cross-section of side 1cm have equal mass. If the two rods are subjected to same tension, the ratio of the elongations of the two rods is

(A) $\frac{1}{\pi^2}$
(B) $\frac{2}{\pi^2}$
(C) $\frac{4}{\pi^2}$
(D) $\frac{16}{\pi^2}$

Answer: (D) $\frac{16}{\pi^2}$ · The council's preliminary key

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Q30 TS EAPCET 2025 · 3 May · Shift 1 MCQ

A metal rod of area of cross-section $3\,\mathrm{cm}^2$ is stretched along its length by applying a force of 9×10^4 N. If the Young's modulus of the material of the rod is $2 \times 10^{11}\ \mathrm{Nm}^{-2}$, the energy stored per unit volume in the stretched rod is

(A) $13.5 \times 10^5\ \mathrm{Jm}^{-3}$
(B) $9 \times 10^5\ \mathrm{Jm}^{-3}$
(C) $2.25 \times 10^5\ \mathrm{Jm}^{-3}$
(D) $4.5 \times 10^5\ \mathrm{Jm}^{-3}$

Answer: (C) $2.25 \times 10^5\ \mathrm{Jm}^{-3}$ · The council's preliminary key

Q31 TS EAPCET 2025 · 3 May · Shift 2 MCQ

The Young's modulus and Poisson's ratio of a material are respectively Y and σ. The force required to decrease the area of cross-section of a wire made of this material by ΔA is

(A) $\frac{Y\Delta A}{4\sigma}$
(B) $\frac{2Y\Delta A}{\sigma}$
(C) $\frac{Y\Delta A}{2\sigma}$
(D) $\frac{Y\Delta A}{\sigma}$

Answer: (C) $\frac{Y\Delta A}{2\sigma}$ · The council's preliminary key

Q32 TS EAPCET 2025 · 2 May · Shift 1 MCQ

If a brass sphere of radius 36 cm is submerged in a lake at a depth where the pressure is 10^7 Pa, then the change in the radius of the sphere is
(Bulk modulus of brass = 60 GPa)

(A) 4×10^{-2} cm
(B) 2×10^{-3} cm
(C) 4×10^{-3} cm
(D) 2×10^{-2} cm

Answer: (B) 2×10^{-3} cm · The council's preliminary key

Q33 TS EAPCET 2025 · 2 May · Shift 2 MCQ

Two wires A and B made of same material and areas of cross-section in the ratio $1 : 2$ are stretched by same force. If the masses of the wires A and B are in the ratio $2 : 3$, then the ratio of the elongations of the wires A and B is

(A) $1:2$

(B) $8:3$

(C) $1:3$

(D) $4:3$

Answer: (B) $8:3$ · The council's preliminary key

Q34 AP EAPCET 2024 · 23 May · Shift 1 MCQ

The work done on a wire of volume of $2\ \text{cm}^3$ is 16×10^2 J. If the young's modulus of the material of the wire is $4 \times 10^{12}\ \text{Nm}^{-2}$. Then the strain produced in the wire is

(A) 0.03 m

(B) 0.04 m

(C) 0.01 m

(D) 0.02 m

Answer: (D) 0.02 m · The council's preliminary key

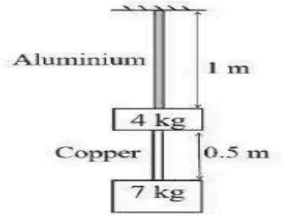
Q35 AP EAPCET 2024 · 22 May · Shift 1 MCQ

The elongation of copper wire of cross-sectional area $3.5\ \text{mm}^2$, in the figure shown, is

($Y_{\text{Copper}} = 10 \times 10^{10}\ \text{Nm}^{-2}$ and $g = 10\ \text{ms}^{-2}$)

(see the figure above)

The elongation of copper wire of cross-sectional area 3.5 mm^2, in the figure shown, is
($Y_{\text{Copper}} = 10 \times 10^{10}\ \text{Nm}^{-2}$ and $g = 10\ \text{ms}^{-2}$)
ప్రక్క చూపిన పటంలో, రాగితీగ మధ్యచ్ఛేద వైశాల్యం 3.5 mm^2 అయితే, దానిలో కలిగే సాగుదల ఎంత?
($Y_{\text{Copper}} = 10 \times 10^{10}\ \text{Nm}^{-2}$ మరియు $g = 10\ \text{ms}^{-2}$)



Options :

1. 10^{-4} m
2. 10^{-3} m
3. 10^{-6} m
4. 10^{-2} m

(A) $10^{-4}\ \mathrm{m}$
(B) $10^{-3}\ \mathrm{m}$
(C) $10^{-6}\ \mathrm{m}$
(D) $10^{-2}\ \mathrm{m}$

Answer: (A) $10^{-4}\ \mathrm{m}$ · The council's preliminary key

Q36 AP EAPCET 2024 · 22 May · Shift 2 MCQ

A wire of length 100 cm and area of cross-section $2\ \mathrm{mm}^2$ is stretched by two forces of each 440 N applied at the ends of the wire in opposite directions along the length of the wire. If the elongation of the wire is 2 mm, the Young's modulus of the material of the wire is

(A) $4.4 \times 10^{11}\ \mathrm{Nm}^{-2}$
(B) $1.1 \times 10^{11}\ \mathrm{Nm}^{-2}$
(C) $2.2 \times 10^{11}\ \mathrm{Nm}^{-2}$
(D) $3.3 \times 10^{11}\ \mathrm{Nm}^{-2}$

Answer: (B) $1.1 \times 10^{11}\ \mathrm{Nm}^{-2}$ · The council's preliminary key

Q37 AP EAPCET 2024 · 21 May · Shift 1 MCQ

The elastic energy stored per unit volume in terms of longitudinal strain 'ϵ' and Young's modulus 'Y' is

(A) $\frac{Y\epsilon^2}{2}$
(B) $\frac{1}{2}Y\epsilon$
(C) $2Y\epsilon^2$
(D) $2Y\epsilon$

Answer: (A) $\frac{Y\epsilon^2}{2}$ · The council's preliminary key

Q38 AP EAPCET 2024 · 21 May · Shift 2 MCQ

A 4 kg stone attached at the end of a steel wire is being whirled at a constant speed $12\ \mathrm{ms}^{-1}$ in a horizontal circle. The wire is 4 m long with a diameter 2.0 mm and young's modules of the steel is $2 \times 10^{11}\ \mathrm{Nm}^{-2}$. The strain in the wire is.

(A) 2.3×10^{-4}
(B) 2.3×10^{-5}
(C) 4.6×10^{-4}
(D) 6.9×10^{-4}

Answer: (A) 2.3×10^{-4} · The council's preliminary key

Q39 AP EAPCET 2024 · 20 May · Shift 1 MCQ

When the load applied to a wire is increased from 5 kg wt to 8 kg wt, the elongation of the wire increases from 1 mm to 1.8 mm. The work done during the elongation of the wire is (Acceleration due

to gravity = $10\ \mathrm{ms}^{-2}$)

(A) $47 \times 10^{-3}\ \mathrm{J}$

(B) $72 \times 10^{-3}\ \mathrm{J}$

(C) $25 \times 10^{-3}\ \mathrm{J}$

(D) $97 \times 10^{-3}\ \mathrm{J}$

Answer: (A) $47 \times 10^{-3}\ \mathrm{J}$ · The council's preliminary key

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Q40 AP EAPCET 2024 · 20 May · Shift 2 MCQ

Depth of a river is 100 m. Magnitude of compressibility of the water is $0.5 \times 10^{-9}\ \mathrm{N}^{-1}\mathrm{m}^2$. The fractional compression in water at the bottom of the river is

(Accelaration due to gravity = $10\ \mathrm{ms}^{-2}$)

(A) 0.9×10^{3}

(B) 0.5×10^{-3}

(C) 2×10^{-3}

(D) 1.3×10^{-2}

Answer: (B) 0.5×10^{-3} · The council's preliminary key

Q41 AP EAPCET 2024 · 19 May · Shift 2 MCQ

If the work done in stretching a wire by 1 mm is 2 J, the work necessary for stretching another wire of same material but with double radius of cross section and half the length by 1 mm is

(A) $16\ \mathrm{J}$

(B) $8\ \mathrm{J}$

(C) $4\ \mathrm{J}$

(D) $\frac{1}{4}\ \mathrm{J}$

Answer: (A) $16\ \mathrm{J}$ · The council's preliminary key

Q42 AP EAPCET 2024 · 18 May · Shift 1 MCQ

Two copper wires A and B of lengths in the ratio $1:2$ and diameters in the ratio $3:2$ are stretched by forces in the ratio $3:1$. The ratio of the elastic potential energies stored per unit volume in the wires A and B is

(A) $2:1$

(B) $4:9$

(C) $16:9$

(D) $4:3$

Answer: (C) $16:9$ · The council's preliminary key

Q43 TS EAPCET 2024 · 11 May · Shift 1 MCQ

A simple pendulum is made of a metal wire of length 'L', area of cross-section 'A', material of Young's modulus 'Y' and a bob of mass 'm'. This pendulum is hung in a bus moving with a uniform speed 'V' on a horizontal circular road of radius 'R'. The elongation in the wire is

(A) $\frac{mL}{RAY}\sqrt{g^2R^2+V^4}$
(B) $\frac{mgL}{AY}$
(C) $\frac{mLV^2}{RAY}$
(D) $\frac{L}{AY}\sqrt{mg+\frac{mV^2}{R}}$

Answer: (A) $\frac{mL}{RAY}\sqrt{g^2R^2+V^4}$ · The council's preliminary key

Q44 TS EAPCET 2024 · 10 May · Shift 1 MCQ

A block of mass 2 kg is tied to one end of a 2 m long metal wire of $1.0\ \text{mm}^2$ area of cross-section and rotated in a vertical circle such that the tension in the wire is zero at the highest point. If the maximum elongation in the wire is 2 mm, the Young's modulus of the metal is

(Acceleration due to gravity $= 10\ \text{ms}^{-2}$)

(A) $1.0 \times 10^{11}\ \text{Nm}^{-2}$
(B) $1.2 \times 10^{11}\ \text{Nm}^{-2}$
(C) $2.0 \times 10^{11}\ \text{Nm}^{-2}$
(D) $0.2 \times 10^{11}\ \text{Nm}^{-2}$

Answer: (B) $1.2 \times 10^{11}\ \text{Nm}^{-2}$ · The council's preliminary key

Q45 TS EAPCET 2024 · 10 May · Shift 2 MCQ

A wire of cross-sectional area $10^{-6}\ \text{m}^2$ is elongated by 0.1 % when the tension in it is 1000 N. The Young's modulus of the material of the wire is
(Assume radius of the wire is constant)

(A) $10^{11}\ \text{Nm}^{-2}$
(B) $10^{12}\ \text{Nm}^{-2}$
(C) $10^{10}\ \text{Nm}^{-2}$
(D) $10^{9}\ \text{Nm}^{-2}$

Answer: (B) $10^{12}\ \text{Nm}^{-2}$ · The council's preliminary key

Q46 TS EAPCET 2024 · 9 May · Shift 1 MCQ

A steel wire of length 3 m and a copper wire of length 2.2 m are connected end to end. When the combination is stretched by a force, the net elongation is 1.05 mm. If the area of cross-section of each wire is $6\ \text{mm}^2$, then the load applied is

(Young's moduli of steel and copper are respectively $2 \times 10^{11}\ \text{Nm}^{-2}$ and $1.1 \times 10^{11}\ \text{Nm}^{-2}$)

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(A) 180 N
(B) 90 N
(C) 135 N
(D) 120 N

Answer: (A) 180 N · The council's preliminary key

Q47 TS EAPCET 2024 · 9 May · Shift 2 MCQ

If the length of a string is 'P' when the tension in it is 6 N and its length is 'Q' when the tension in it is 8 N, then the original length of the string is

(A) $3P + 4Q$
(B) $3P - 4Q$
(C) $4P + 3Q$
(D) $4P - 3Q$

Answer: (D) $4P - 3Q$ · The council's preliminary key

Q48 AP EAPCET 2023 · 19 May · Shift 1 MCQ

A metal wire with circular cross section and length one metre is pulled with tensile force of 1000 N on each side. For the wire to be stretched not more than 0.25 cm, the minimum diameter of the wire required is

(Young's modulus of the metal $= 10^{11}$ Pa, take $\sqrt{\pi} = 1.77$)

(A) 1.13 mm
(B) 2.26 mm
(C) 4.12 mm
(D) 3.1 mm

Answer: (B) 2.26 mm · The council's preliminary key

Q49 AP EAPCET 2023 · 19 May · Shift 1 MCQ

Adiabatic bulk modulus of a gas at a pressure 'P' is

(γ - ratio of specific heat capacities of the gas)

(A) γ
(B) γP
(C) P
(D) $\frac{\gamma}{P}$

Answer: (B) γP · The council's preliminary key

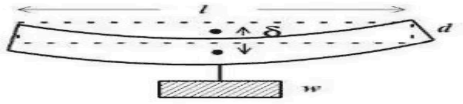
Q50 AP EAPCET 2023 · 18 May · Shift 1 MCQ

The sag developed in a bar of length 'l', breath 'b' and thickness 'd' when subjected to a load of 'w' at center is

(Y – Young's modulus of the material of the bar)

(see the figure above)

The sag developed in a bar of length 'l', breath 'b' and thickness 'd' when subjected to a load of 'w' at center is
(Y – Young's modulus of the material of the bar)
పొడవు 'l', వెడల్పు 'b' మరియు మందము 'd' గల ఒక కడ్డీ కేంద్రము వద్ద 'w' బరువును ప్రేరేపించినప్పుడు, ఆ పలకలో వచ్చిన కుంగుదల
(Y – కడ్డీ పదార్థపు యంగ్ గుణకం)



Options :

1. $\frac{w^2l^2}{4bd^2Y}$
2. $\frac{wl^3}{bd^2Y}$
3. $\frac{wl^3}{4bd^3Y}$
4. $\frac{wl}{4bd^3}$

(A) $\frac{w^2l^2}{4bd^2Y}$
(B) $\frac{wl^3}{bd^2Y}$
(C) $\frac{wl^3}{4bd^3Y}$
(D) $\frac{wl}{4bd^3}$

Answer: (C) $\frac{wl^3}{4bd^3Y}$ · The council's preliminary key

Q51 AP EAPCET 2023 · 18 May · Shift 2 MCQ

The pressure required to decrease the volume of 4000 cc water by 0.05% is

(Bulk modulus of water = $2.2 \times 10^9\ \mathrm{N\,m^{-2}}$)

(A) $11 \times 10^6\ \mathrm{N\,m^{-2}}$
(B) $5 \times 10^5\ \mathrm{N\,m^{-2}}$
(C) $2.2 \times 10^6\ \mathrm{N\,m^{-2}}$
(D) $1.1 \times 10^6\ \mathrm{N\,m^{-2}}$

Answer: (D) $1.1 \times 10^6\ \mathrm{N\,m^{-2}}$ · The council's preliminary key

Q52 AP EAPCET 2023 · 17 May · Shift 1 MCQ

A cylindrical rod made of aluminum has length 1 meter and diameter of 10 cm. The rod is subjected to a tensile force of 100 kN. The elongation in the rod is

(Young's modulus of aluminum = 70 GPa)

(A) 0.81×10^{-4} m
(B) 2×10^{-4} m
(C) 0.2×10^{-4} m
(D) 1.81×10^{-4} m

Answer: (D) 1.81×10^{-4} m · The council's preliminary key

Q53 AP EAPCET 2023 · 17 May · Shift 2 MCQ

A rectangular metallic block of dimensions $40\ \text{mm} \times 20\ \text{mm}$ when pulled with a tension of $50\ \text{kN}$ undergoes only elastic deformation. The strain in the block is

(The shear modulus of the material of the block is $40 \times 10^9\ \text{Nm}^{-2}$)

(A) 1.56×10^{-3} m
(B) 2.4×10^{-3} m
(C) 3.2×10^{-3} m
(D) 1.08×10^{-3} m

Answer: (A) 1.56×10^{-3} m · The council's preliminary key

Q54 AP EAPCET 2023 · 16 May · Shift 1 MCQ

A steel rod of radius 20 mm and length of 2 m is acted upon by a force of 400 kN along the length. The values of stress and strain are respectively

($Y_{\text{steel}} = 2 \times 10^{11}\ \text{Nm}^{-2}$)

(A) $1.96 \times 10^8\ \text{Nm}^{-2}$, 0.16%
(B) $3.18 \times 10^8\ \text{Nm}^{-2}$, 0.16%
(C) $3.18 \times 10^8\ \text{Nm}^{-2}$, 0.32%
(D) $4 \times 10^8\ \text{Nm}^{-2}$, 0.2%

Answer: (B) $3.18 \times 10^8\ \text{Nm}^{-2}$, 0.16% · The council's preliminary key

Q55 AP EAPCET 2023 · 16 May · Shift 2 MCQ

The fractional change in the volume of a glass slab when subjected to hydraulic pressure of 14 atm is

(Bulk modulus of glass = $40 \times 10^9\ \text{Nm}^{-2}$)

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(A) 1.44×10^{-5}
(B) 3.54×10^{-5}
(C) 2.74×10^{-5}
(D) 3.14×10^{-5}

Answer: (B) 3.54×10^{-5} · The council's preliminary key

Q56 AP EAPCET 2023 · 15 May · Shift 1 MCQ

The maximum possible height of a mountain on earth is approximately

(elastic limit of mountain rock $= 30 \times 10^7\ \mathrm{Nm^{-2}}$, average density of mountain rock $= 3 \times 10^3\ \mathrm{kgm^{-3}}$, $g = 10\ \mathrm{ms^{-2}}$)

(A) $9\ \mathrm{km}$
(B) $10\ \mathrm{km}$
(C) $12\ \mathrm{km}$
(D) $8.8\ \mathrm{km}$

Answer: (B) $10\ \mathrm{km}$ · The council's preliminary key

Q57 AP EAPCET 2023 · 15 May · Shift 1 MCQ

Isothermal bulk modulus of a gas at a pressure P is

(γ - ratio of specific heat capacities of the gas)

(A) γ
(B) γP
(C) P
(D) $\frac{\gamma}{P}$

Answer: (C) P · The council's preliminary key

Q58 AP EAPCET 2023 · 15 May · Shift 2 MCQ

A spherical ball of volume $2000\ \mathrm{cm^3}$ is subjected to a hydraulic pressure of 15 atm. If the change in volume is $5 \times 10^{-2}\ \mathrm{cm^3}$, the bulk modulus of the material of the spherical ball is

($1\ \mathrm{atm} = 10^5\ \mathrm{Nm^{-2}}$)

(A) $6 \times 10^{10}\ \mathrm{Nm^{-2}}$
(B) $2 \times 10^{10}\ \mathrm{Nm^{-2}}$
(C) $5 \times 10^{10}\ \mathrm{Nm^{-2}}$
(D) $15 \times 10^{10}\ \mathrm{Nm^{-2}}$

Answer: (A) $6 \times 10^{10}\ \mathrm{Nm^{-2}}$ · The council's preliminary key

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Q59 TS EAMCET 2023 · 14 May · Shift 1 MCQ

The dimensions of four wires of the same material are given below. The increase in length is maximum in the wire of

(A) Length 100 cm, Diameter 1 mm
(B) Length 200 cm, Diameter 2 mm
(C) Length 300 cm, Diameter 3 mm
(D) Length 50 cm, Diameter 0.5 mm

Answer: (D) Length 50 cm, Diameter 0.5 mm · The council's preliminary key

Q60 TS EAMCET 2023 · 14 May · Shift 2 MCQ

The ratio of the areas of cross sections of three wires is 1:2:3 and the ratio of the Young's modulii of their materials is 3:2:1. If the three wires are of same length and same stretching force is applied to the three wires, then the ratio of the elongations of the three wires is

(A) 4:3:4
(B) 1:1:1
(C) 9:4:1
(D) 3:4:3

Answer: (A) 4:3:4 · The council's preliminary key

Q61 TS EAMCET 2023 · 13 May · Shift 1 MCQ

The lengths of four wires A, B, C and D made of same material are 1 m, 2 m, 3 m and 4 m respectively. The radii of the wires A, B, C and D are 0.2 mm, 0.4 mm, 0.6 mm and 0.8 mm respectively. For the same applied tension, the elongation is more in the wire

(A) A
(B) B
(C) C
(D) D

Answer: (A) A · The council's preliminary key

Q62 TS EAMCET 2023 · 12 May · Shift 1 MCQ

A wire of length 40 cm is stretched by 0.1 cm. The strain on the wire is

(A) 25×10^{-4}
(B) 40×10^{-4}
(C) 10×10^{-4}
(D) 12.5×10^{-4}

Answer: (A) 25×10^{-4} · The council's preliminary key

Q63 TS EAMCET 2023 · 12 May · Shift 2 MCQ

Two wires A and B of same length, same radius and same Young's modulus are heated to same range of temperatures. If the coefficient of linear expansion of A is $\frac{3}{2}$ times that of B, then the ratio of the thermal stresses produced in the two wires A and B is

(A) $2:3$
(B) $9:4$
(C) $4:9$
(D) $3:2$

Answer: (D) $3:2$ · The council's preliminary key

Q64 TS EAMCET 2022 · 20 Jul · Shift 1 MCQ

One end of a steel rod of radius 10.0 mm and length 50.0 cm is clamped on a horizontal table. The other end of the rod is pulled with a force of magnitude $10.0 \times \pi$ kN. This force is uniform across the flat surface of the rod and is perpendicular to it. The change in the length of the rod due to this applied force is (Use Young's modulus = 2.0×10^{11} N/m^2)

(A) 0.25 mm
(B) 0.75 mm
(C) 0.50 mm
(D) 1.0 mm

Answer: (A) 0.25 mm · The council's preliminary key

Q65 TS EAMCET 2022 · 20 Jul · Shift 2 MCQ

What is the work done in stretching a uniform metal wire of length from 2 m to 2.004 m with an area of cross section $10^{-6}\ \mathrm{m}^2$?
[Young's modulus of the wire = $2 \times 10^{11}\ \mathrm{N/m^2}$]

(A) 1.6 J
(B) 0.8 J
(C) 8 J
(D) 16 J

Answer: (B) 0.8 J · The council's preliminary key

Q66 TS EAMCET 2022 · 19 Jul · Shift 1 MCQ

An object of mass 15 kg is attached to the end of a metal wire of unstretched length 1.0 m. The object is then whirled in a vertical circle with an angular velocity of 4 rad / s at the bottom of the circle. If the cross sectional area of the wire is 0.05 cm^2 and Young's modulus of metal is $2 \times 10^{11}\ N/m^2$, then the elongation of the wire when the mass is at the lowest point of its path (Take $g = 10\ m/s^2$)

(A) 0.27 mm
(B) 0.39 mm
(C) 0.55 mm
(D) 0.25 mm

Answer: (B) 0.39 mm · The council's preliminary key

Q67 TS EAMCET 2022 · 19 Jul · Shift 2 MCQ

Two wires of same length having radius of 2 mm and 1.5 mm respectively are loaded with same weights. Extension of the second wire is double than that of the first wire. What is the ratio of the Young's modulus of the first wire to that of the second wire?

(A) 8/9
(B) 9/8
(C) 3/4
(D) 4/3

Answer: (B) 9/8 · The council's preliminary key

Q68 TS EAMCET 2022 · 18 Jul · Shift 1 MCQ

Match the following
Column-I
A) Shear modulus
B) Shearing stress
C) Elastic fatigue
D) Modulus of elasticity
Column-II
I) Resistance to change in volume
II) Proportionality constant
III) Tangential stress
IV) Temporary loss of elastic property
V) Resistance to change against deformation force
The correct match is

(A) A: II, B: V, C: I, D: III
(B) A: V, B: III, C: IV, D: II
(C) A: III, B: IV, C: II, D: V
(D) A: V, B: II, C: IV, D: I

Answer: (B) A: V, B: III, C: IV, D: II · The council's preliminary key

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Q69 TS EAMCET 2022 · 18 Jul · Shift 2 MCQ

A swimming pool has a depth of 22 m and area 700 m^2. Calculate fractional change $\frac{\Delta v}{v}$ of water at the bottom of the swimming pool. Given that the bulk modulus of water is 2.2×10^9 Nm^{-2}, g = 10 m/s^2, and density of water 1000 kg/m^3.

(A) 2.2×10^{-4}
(B) 0.7×10^{-4}
(C) 0.31×10^{-4}
(D) 10^{-4}

Answer: (D) 10^{-4} · The council's preliminary key

Q70 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

A rubber band catapult has initial length 2 cm and cross-sectional area $5\ mm^2$. It is stretched by 2 cm and then released to project a stone of mass of 20 g. The Velocity of projected stone is (Young's modulus of rubber = $5 \times 10^8\ Nm^{-2}$)

(A) $20\ ms^{-1}$
(B) $50\ ms^{-1}$
(C) $100\ ms^{-1}$
(D) $250\ ms^{-1}$

Answer: (B) $50\ ms^{-1}$ · The council's preliminary key

Q71 AP EAPCET 2022 · 7 Jul · Shift 1 MCQ

Two wires made of same material are clamped rigidly at one end and pulled by the same force on the other end. The length and the radius of the first wire are three times those of the second wire. If x is the increase in the length of the first wire, then the increase in the length of the second wire is

(A) $\frac{1}{3}x$
(B) $3x$
(C) $9x$
(D) $\sqrt{3}x$

Answer: (B) $3x$ · The council's preliminary key

Q72 AP EAPCET 2022 · 7 Jul · Shift 2 MCQ

One end of the steel rod is clamped to the roof and the other end is attached to a mass of 1000 kg as shown in the figure. The length of the rod is 50 cm and its cross-sectional area is $1000\ mm^2$. The change in the length of the rod due to the weight of the mass is
(Young's modulus of steel = $2 \times 10^{11}\ Nm^{-2}$ and acceleration due to gravity = $10\ ms^{-2}$)
(see the figure above)

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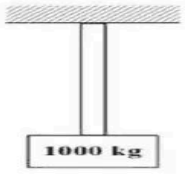
One end of the steel rod is clamped to the roof and the other end is attached to a mass of 1000 kg as shown in the figure. The length of the rod is 50 cm and its cross-sectional area is 1000 mm^2. The change in the length of the rod due to the weight of the mass is

(Young's modulus of steel = 2 x 10^{11} Nm^{-2} and acceleration due to gravity = 10 ms^{-2})

పటంలో చూపిన విధంగా ఒక ఉక్కు కడ్డీ యొక్క ఒక చివరను పైకప్పుకి బిగించి రెండవ చివరన 1000 kg ద్రవ్యరాశిని తగిలించారు. కడ్డీ యొక్క పొడవు 50 cm మరియు దాని మధ్యచ్ఛేద వైశాల్యం 1000 mm^2. ద్రవ్యరాశి యొక్క భారం వలన కడ్డీలోని పొడవులో మార్పు

(ఉక్కు యంగ్ గుణకం = 2 x 10^{11} Nm^{-2}మరియు గుణత్వ త్వరణం = 10 ms^{-2})



Options :

1. 0.025 mm
2. 0.10 mm
3. 0.050 mm
4. 0.075 mm

(A) 0.025 mm

(B) 0.10 mm

(C) 0.050 mm

(D) 0.075 mm

Answer: (A) 0.025 mm · The council's preliminary key

Q73 AP EAPCET 2022 · 6 Jul · Shift 1 MCQ

The elastic limit of a metal is $\frac{400}{\pi}$ MPa. If a rod of this metal is to support a 484 N load without exceeding its elastic limit, the minimum diameter of the rod is

(A) 2.2 mm

(B) 1.2 mm

(C) 2 mm

(D) 1.6 mm

Answer: (A) 2.2 mm · The council's preliminary key

Q74 AP EAPCET 2022 · 6 Jul · Shift 2 MCQ

Statement (A) : For an ideal liquid, the bulk modulus is infinite and the shear modulus is zero.
Statement (B) : The volume contraction of a metal cube of bulk modulus 140 GPa, 10 cm on a edge, when subjected to a hydraulic pressure of 7×10^6 Pa is $-0.05\ m^3$.
Statement (C) : A spiral spring is stretched by a weight attached to it. The strain is tensile.

(A) A, B and C are true
(B) A, B are true C is false
(C) A, C are true B is false
(D) B and C are true A is false

Answer: (C) A, C are true B is false · The council's preliminary key

Q75 AP EAPCET 2022 · 5 Jul · Shift 1 MCQ

Two wires A and B of same cross-section are connected end to end. When same tension is created in both wires, the elongation in B wire is twice the elongation in A wire. If L_A and L_B are the initial lengths of the wires A and B respectively, then (Young's modulus of material of wire A $= 2 \times 10^{11}\ \mathrm{Nm}^{-2}$ and Young's modulus of material of wire B $= 1.1 \times 10^{11}\ \mathrm{Nm}^{-2}$).

(A) $\frac{L_A}{L_B} = \frac{10}{11}$
(B) $\frac{L_A}{L_B} = \frac{4}{5}$
(C) $\frac{L_A}{L_B} = \frac{9}{11}$
(D) $\frac{L_A}{L_B} = \frac{3}{7}$

Answer: (A) $\frac{L_A}{L_B} = \frac{10}{11}$ · The council's preliminary key

Q76 AP EAPCET 2022 · 5 Jul · Shift 2 MCQ

A copper wire of length 2.4 m and an aluminum wire of length 0.7 m, both having diameter 2 mm, are connected end to end. When stretched by a load, the obtained elongation is found to be 0.6 mm. The applied load is

(Young's modulus of copper = $1.2 \times 10^{11}\ \mathrm{Nm}^{-2}$ and Young's modulus of aluminum = $0.7 \times 10^{11}\ \mathrm{Nm}^{-2}$)

(A) 12π N
(B) 24π N
(C) 20π N
(D) 80π N

Answer: (C) 20π N · The council's preliminary key

Q77 AP EAPCET 2022 · 4 Jul · Shift 1 MCQ

Same tension is applied to the following four wires made of same material. The elongation is longest in

(A) Wire of length 50 cm and diameter 0.5 mm
(B) Wire of length 200 cm and diameter 2 mm
(C) Wire of length 300 cm and diameter 3 mm
(D) Wire of length 100 cm and diameter 1 mm

Answer: (A) Wire of length 50 cm and diameter 0.5 mm · The council's preliminary key

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Q78 AP EAPCET 2021 · 5 Oct · Shift 1 MCQ

The shape of a regular body distorts due to _____

(A) Volume strain
(B) Longitudinal strain
(C) Shearing strain
(D) Metallic strain

Answer: (C) Shearing strain · The council's preliminary key

Q79 AP EAPCET 2021 · 25 Aug · Shift 1 MCQ

When a spiral spring is stretched by suspending a load with it, the strain produced is called _____ strain.

(A) Volume
(B) Shearing
(C) Transverse
(D) Longitudinal

Answer: (B) Shearing · The council's preliminary key

Q80 AP EAPCET 2021 · 25 Aug · Shift 2 MCQ

The length of a rod under longitudinal tension T_1 is L_1 and that under longitudinal tension T_2 is L_2. What is the actual length of the rod, in the absence of tensions?

(A) $\frac{L_1T_1 - L_2T_2}{T_2 - T_1}$
(B) $\frac{L_1T_2 - L_2T_1}{T_2 + T_1}$
(C) $\frac{L_1T_1 - L_2T_2}{T_2 + T_1}$
(D) $\frac{L_1T_2 - L_2T_1}{T_2 - T_1}$

Answer: (D) $\frac{L_1T_2 - L_2T_1}{T_2 - T_1}$ · The council's preliminary key

EdLoop EAPCET

Q81 AP EAPCET 2021 · 24 Aug · Shift 1 MCQ

When a $8\ \mathrm{m}$ long wire is stretched by a load of $10\ \mathrm{kg.wt}$, it is elongated by $1.5\ \mathrm{mm}$. The energy stored in the wire in this process is _____ $(g = 10\ \mathrm{m.s^{-2}})$

(A) 7.5 J
(B) 0.05 J
(C) 5 J
(D) 0.075 J

Answer: (D) 0.075 J · The council's preliminary key

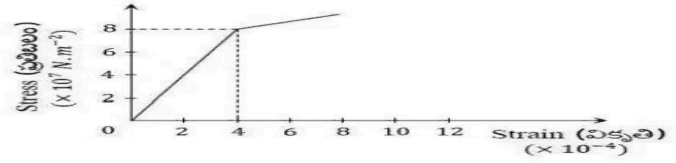
Q82 AP EAPCET 2021 · 24 Aug · Shift 2 MCQ

Find the Young's modulus of the wire whose stress-strain curve is as shown in the following figure: *(see the figure above)*

Mandatory : No

AP EAPCET 2021
AP EAPCET 2021

Find the Young's modulus of the wire whose stress-strain curve is as shown in the following figure:
ఈ క్రింది దూపబడిన ప్రతిబలం-వికృతి గ్రాఫ్ నుండి తీగయొక్క యంగ్ గుణకం ఎంత?



Options :
1. $8 \times 10^{11}\ N.m^{-2}$
2. $24 \times 10^{11}\ N.m^{-2}$
3. $10 \times 10^{11}\ N.m^{-2}$
4. $2 \times 10^{11}\ N.m^{-2}$

(A) $8 \times 10^{11}\ N.m^{-2}$
(B) $24 \times 10^{11}\ N.m^{-2}$
(C) $10 \times 10^{11}\ N.m^{-2}$
(D) $2 \times 10^{11}\ N.m^{-2}$

Answer: (D) $2 \times 10^{11}\ N.m^{-2}$ · The council's preliminary key

Q83 AP EAPCET 2021 · 23 Aug · Shift 1 MCQ

One end of a wire of $8\ mm$ radius and $100\ cm$ length is fixed and the other end is twisted through an angle of 45°. The angle of shear is _____

(A) 0.36°
(B) 0.12°
(C) 3.6°
(D) 1.2°

Answer: (A) 0.36° · The council's preliminary key

Q84 AP EAPCET 2021 · 20 Aug · Shift 1 MCQ

A body of mass $10\ \mathrm{kg}$ is attached to a wire of $0.3\ \mathrm{m}$ length. The breaking stress is $4.8 \times 10^{7}\ \mathrm{N.m^{-2}}$. The area of cross-section from the wire is $10^{-6}\ \mathrm{m^2}$. The maximum angular velocity with which it can be rotated in a horizontal circle is _____.

(A) $4\ \mathrm{rad.s^{-1}}$
(B) $8\ \mathrm{rad.s^{-1}}$
(C) $16\ \mathrm{rad.s^{-1}}$
(D) $32\ \mathrm{rad.s^{-1}}$

Answer: (A) $4\ \mathrm{rad.s^{-1}}$ · The council's preliminary key

Q85 AP EAPCET 2021 · 19 Aug · Shift 1 MCQ

The Youngs modulus of a rubber string of length $12\ cm$ and density $1.5\ \mathrm{kg.m^{-3}}$ is $5 \times 10^{8}\ \mathrm{N.m^{-2}}$. When this string is suspended vertically, the increase in its length due to its own weight is _____. (take g = $10\ \mathrm{m.s^{-2}}$)

(A) $2.16 \times 10^{-10}\ m$
(B) $9.6 \times 10^{-11}\ m$
(C) $9.6 \times 10^{-3}\ m$
(D) $2.16 \times 10^{-3}\ m$

Answer: (A) $2.16 \times 10^{-10}\ m$ · The council's preliminary key

Q86 AP EAPCET 2021 · 19 Aug · Shift 2 MCQ

Young's modulus of a wire is $2 \times 10^{11}\ \mathrm{N.m^{-2}}$. If an external stretching force of $2 \times 10^{11}\ \mathrm{N}$ is applied to a wire of length L, the final length of the wire is _____ (cross-section = unity)

(A) $2\ L$
(B) $1.5\ L$
(C) $3\ L$
(D) $1.25\ L$

Answer: (A) $2\ L$ · The council's preliminary key

Q87 TS EAMCET 2021 · 6 Aug · Shift 1 MCQ

The volume of a material reduces by 2 % when the pressure is increased from 1 atm to 2 atm. What is it's bulk modulus?

(A) $10^5\ \mathrm{N/m^2}$
(B) $5 \times 10^5\ \mathrm{N/m^2}$
(C) $10^6\ \mathrm{N/m^2}$
(D) $5 \times 10^6\ \mathrm{N/m^2}$

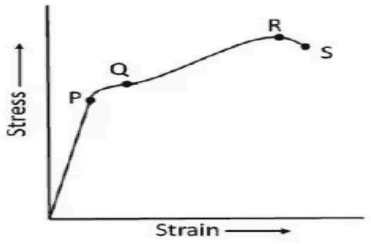
Answer: (D) $5 \times 10^6\ \mathrm{N/m^2}$ · The council's preliminary key

Q88 TS EAMCET 2021 · 6 Aug · Shift 2 MCQ

The graph below represents a typical stress-strain curve for a metal. Identify the point on the graph that is the ultimate tensile strength of the material.

(see the figure above)

The graph below represents a typical stress-strain curve for a metal. Identify the point on the graph that is the ultimate tensile strength of the material.



Options :

1. P
2. Q
3. R
4. S

(A) P
(B) Q
(C) R
(D) S

Answer: (C) R · The council's preliminary key

Q89 TS EAMCET 2021 · 5 Aug · Shift 1 MCQ

Two springs of force constants K_1 and K_2 are loaded with weights W_1 and W_2 respectively. Assume that length of each string is increased by same amount. If $K_1 = 2\,K_2$, then the ratio $\frac{W_2}{W_1}$ is

(A) 1
(B) 0.5
(C) 0.25
(D) 4

Answer: (B) 0.5 · The council's preliminary key

Q90 TS EAMCET 2021 · 5 Aug · Shift 2 MCQ

Consider a fluid in a container. Let the density of the fluid at the surface and at depth H be ρ_0 and ρ respectively. The bulk modulus of the fluid is B_0. If $\rho = \frac{\rho_0}{1+\alpha\rho_0 gH}$ then the constant α is $\left(\text{Assume } \frac{\rho-\rho_0}{\rho_0} \ll 1\right)$

(A) B_0
(B) $\frac{1}{B_0}$
(C) $-B_0$
(D) $\frac{-1}{B_0}$

Answer: (D) $\frac{-1}{B_0}$ · The council's preliminary key

Q91 TS EAMCET 2021 · 4 Aug · Shift 1 MCQ

Consider a rod of length 1.0 m with a cross-sectional area of $0.50\ \text{cm}^2$. The rod supports a 500-kg platform that hangs attached to the rod's lower end. What is elongation of the rod under the stress ignoring the weight of the rod? Consider the Young's modulus to be 10^{11} Pa and $g = 10\ \text{m/s}^2$.

(A) 2 mm
(B) 0.5 mm
(C) 1.5 mm
(D) 1 mm

Answer: (D) 1 mm · The council's preliminary key

Q92 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

The length of a metal wire is L, when it is subjected to tension T. If the tension is increased to $T + \Delta T$, the length becomes $L + \Delta L$. The natural length of the wire is

(A) $\frac{L(\Delta T) - (\Delta L)T}{\Delta T}$
(B) $L - 2\Delta L$
(C) $\Delta L\left(\frac{\Delta T}{T}\right)$
(D) $\frac{T(\Delta L) - L(\Delta T)}{\Delta T}$

Answer: (A) $\frac{L(\Delta T) - (\Delta L)T}{\Delta T}$ · The council's preliminary key

Q93 TS EAMCET 2021 · 4 Aug · Shift 2 MCQ

A steel wire and a copper wire are joined end to end having equal cross section. The elongation of two wires are found to be equal under tension. What is the ratio of the length of the steel to the length of copper wire?
(Young modulus of steel = $2.0 \times 10^{11}\ \mathrm{Nm}^{-2}$ and Young modulus of copper = $1.1 \times 10^{11}\ \mathrm{Nm}^{-2}$)

(A) $1:2$
(B) $2:1$
(C) $20:11$
(D) $11:20$

Answer: (C) $20:11$ · The council's preliminary key

Q94 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

Two different wires made with same material have their radii in the ratio $1:2$. Even their lengths are in the ratio $1:2$. On subjecting to different loads, if the extensions produced are equal, find the ratio of the loads applied?

(A) $1:4$
(B) $1:3$
(C) $1:2$
(D) $4:1$

Answer: (C) $1:2$ · The council's preliminary key

Q95 AP EAMCET 2020 · 7 Oct · Shift 1 MCQ

The relation between young's modulus (Y), bulk modulus (K) and modulus of elasticity (q) is

(A) $\frac{3}{Y} = \frac{1}{K} + \frac{3}{q}$
(B) $\frac{3}{Y} = \frac{1}{q} + \frac{1}{3K}$
(C) $\frac{1}{Y} = \frac{3}{q} + \frac{1}{3K}$
(D) $\frac{1}{q} = \frac{3}{Y} + \frac{1}{3K}$

Answer: (B) $\frac{3}{Y} = \frac{1}{q} + \frac{1}{3K}$ · The council's preliminary key

Q96 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

A wire of length $1\ \mathrm{m}$ and radius $2\ \mathrm{mm}$ is vertically clamped. The lower end is twisted through an angle of 45°. The angle of shear is _____

(A) 0.09°
(B) 0.9°
(C) 9°
(D) 90°

Answer: (A) 0.09° · The council's preliminary key

Q97 AP EAMCET 2020 · 23 Sep · Shift 1 MCQ

What is the pressure required to reduce the given volume of water by 1% ? (Bulk modulus $(K) = 2 \times 10^{8}\ \mathrm{N.m^{-2}}$)

(A) $2 \times 10^{5}\ \mathrm{N.m^{-2}}$
(B) $2 \times 10^{6}\ \mathrm{N.m^{-2}}$
(C) $2 \times 10^{7}\ \mathrm{N.m^{-2}}$
(D) $2 \times 10^{8}\ \mathrm{N.m^{-2}}$

Answer: (B) $2 \times 10^{6}\ \mathrm{N.m^{-2}}$ · The council's preliminary key

Q98 AP EAMCET 2020 · 22 Sep · Shift 1 MCQ

A material has Poisson's ratio 0.50. If a uniform rod made of this material suffers a longitudinal strain of 2×10^{-3}, then the percentage change in volume is _____

(A) 0.6
(B) 0.4
(C) 0.2
(D) 0

Answer: (D) 0 · Checked by our team

Q99 AP EAMCET 2020 · 22 Sep · Shift 2 MCQ

Young's modulus for perfectly rigid body material is _____

(A) Zero
(B) Infinite
(C) $1 \times 10^{10}\ \mathrm{N.m^{-2}}$
(D) $10 \times 10^{10}\ \mathrm{N.m^{-2}}$

Answer: (B) Infinite · The council's preliminary key

Q100 AP EAMCET 2020 · 22 Sep · Shift 2 MCQ

According to the Hooke's law the force required to change the length of a wire by 'l' is proportional to _____

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(A) l^{-2}
(B) l^{-1}
(C) l
(D) l^{2}

Answer: (C) l · The council's preliminary key

Q101 AP EAMCET 2020 · 21 Sep · Shift 1 MCQ

If a pressure of $8 \times 10^{8}\ \mathrm{N.m^{-2}}$ is applied to a lead block so that its volume reduces by 20%. The Bulk modulus of lead block is _____

(A) $4 \times 10^{7}\ \mathrm{N.m^{-2}}$
(B) $4 \times 10^{8}\ \mathrm{N.m^{-2}}$
(C) $4 \times 10^{9}\ \mathrm{N.m^{-2}}$
(D) $4 \times 10^{10}\ \mathrm{N.m^{-2}}$

Answer: (C) $4 \times 10^{9}\ \mathrm{N.m^{-2}}$ · The council's preliminary key

Q102 AP EAMCET 2020 · 21 Sep · Shift 2 MCQ

What should be the diameter of a copper wire ($Y = 12 \times 10^{10}\ \mathrm{N.m^{-2}}$) of length $5\ \mathrm{m}$ to produce the same elongation produced by a $5\ \mathrm{m}$ long aluminum wire ($Y = 7 \times 10^{10}\ \mathrm{N.m^{-2}}$) of diameter $3\ \mathrm{mm}$ with the same $40\ \mathrm{kg}$ mass?

(A) $1.5\ \mathrm{mm}$
(B) $5\ \mathrm{mm}$
(C) $2.3\ \mathrm{mm}$
(D) $10\ \mathrm{mm}$

Answer: (C) $2.3\ \mathrm{mm}$ · The council's preliminary key

Q103 AP EAMCET 2020 · 21 Sep · Shift 2 MCQ

The energy stored in a strained wire is given by _____

(A) $\frac{1}{2}\times$ load $\times$ extension
(B) $\frac{1}{2}\times$ extension $\times$ stress
(C) $\frac{1}{2}\times$ stress $\times$ strain
(D) $\frac{1}{2}\times$ strain $\times$ load.

Answer: (A) $\frac{1}{2}\times$ load $\times$ extension · The council's preliminary key

Q104 AP EAMCET 2020 · 18 Sep · Shift 2 MCQ

A force F is needed to break a copper wire having radius R. The force needed to break a copper wire of radius $2R$ will be

(A) $\frac{F}{2}$
(B) $2F$
(C) $4F$
(D) $\frac{F}{4}$

Answer: (C) $4F$ · The council's preliminary key

Q105 AP EAMCET 2020 · 17 Sep · Shift 1 MCQ

A 3 m long steel wire is stretched to increase its length by 0.3 cm. Poission's ratio for steel is 0.26. The lateral strain produced in the wire is

(A) 0.26×10^{-4}
(B) 0.26×10^{-2}
(C) 0.26×10^{-3}
(D) 0.26×10^{-1}

Answer: (C) 0.26×10^{-3} · The council's preliminary key

Q106 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

When a weight of 10 kg is suspended from a copper wire of length 3 m and diameter 0.4 mm, its length increases by 2.4 cm. If the diameter of the wire is doubled, then the extension in its length will be _____

(A) 9.6 cm
(B) 4.8 cm
(C) 1.2 cm
(D) 0.6 cm

Answer: (D) 0.6 cm · The council's preliminary key

Q107 AP EAMCET 2020 · 17 Sep · Shift 2 MCQ

The diagram shows stress vs strain curve for the materials A and B. From the curves we can infer that *(see the figure above)*

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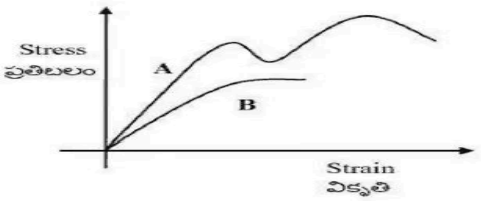
Orientation : Vertical

The diagram shows stress vs strain curve for the materials A and B. From the curves we can infer that

రెండు పదార్థాలు A మరియు Bలు ప్రతి బలము వికృతి వక్రాలు గ్రాఫ్ లో చూపును. వక్రాల నుండి తెలియునది ఏమిటి?



Options :

1. A is brittle but B is ductile
   A పెళుసు గాను, B సాగుదల గలవి

2. A is ductile but B is brittle
   A సాగుదల గలది, B పెళుసుది

3. Both A and B are ductile
   A మరియు B లు రెండూ సాగుదల గలవి

4. Both A and B are brittle
   A మరియు B లు రెండు పెళుసువి

AP EAMCET 2020
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(A) A is brittle but B is ductile

(B) A is ductile but B is brittle

(C) Both A and B are ductile

(D) Both A and B are brittle

Answer: (B) A is ductile but B is brittle · The council's preliminary key

Q108 TS EAMCET 2020 · 14 Sep · Shift 1 MCQ

If the bulk modules of water is $2 \times 10^9\ \mathrm{Nm^{-2}}$ then the required pressure to reduce the given volume of water by 2% is

(A) $2 \times 10^7\ \mathrm{N\,m^{-2}}$

(B) $4 \times 10^7\ \mathrm{N\,m^{-2}}$

(C) $8 \times 10^6\ \mathrm{N\,m^{-2}}$

(D) $5 \times 10^7\ \mathrm{N\,m^{-2}}$

Answer: (B) $4 \times 10^7\ \mathrm{N\,m^{-2}}$ · Official TGCHE final key

Q109 TS EAMCET 2020 · 14 Sep · Shift 2 MCQ

Two metal wires A and B have length L and 3 L respectively. The radius of cross-sectional circular area of wire A and B are R and 2R respectively. These wires are joined end to end along their axis. When one end of the combined system is fixed and other end is pulled with a constant force F, the elongation in both the wires is equal. If Y_A and Y_B are Youngs modulus of wire A and B, then Y_B/Y_A is

(A) $\frac{3}{4}$
(B) $\frac{4}{3}$
(C) $\frac{2}{3}$
(D) $\frac{3}{2}$

Answer: (A) $\frac{3}{4}$ · Official TGCHE final key

Q110 TS EAMCET 2020 · 11 Sep · Shift 1 MCQ

A steel rod has a radius of 10 mm and a length of 1 m. A 80 kN force stretches it along its length. If the Young's modulus of the rod is 2×10^{11} N/m^2, then the change in length is

(A) $\frac{2}{\pi}$ mm
(B) $\frac{4}{\pi}$ mm
(C) $\frac{3}{\pi}$ mm
(D) 1 mm

Answer: (B) $\frac{4}{\pi}$ mm · Official TGCHE final key

Q111 TS EAMCET 2020 · 11 Sep · Shift 2 MCQ

Young's modulus is proportionality constant that relates the force per unit area applied perpendicularly at the surface of an object to:

(A) the fractional change in volume
(B) the fractional change in length
(C) the fractional change in area
(D) the fractional change in mass

Answer: (B) the fractional change in length · Official TGCHE final key

Q112 TS EAMCET 2020 · 10 Sep · Shift 1 MCQ

A slab of side 50 cm and thickness 10 cm is subject to a shearing force of 10^5 N on its narrow edge. If the lower edge is riveted to the floor and upper edge is displaced by 0.2 mm, then shear modulus of the material of the slab is

(A) 6 Gpa
(B) 5 Gpa
(C) 4 Gpa
(D) 4.5 Gpa

Answer: (B) 5 Gpa · Official TGCHE final key

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Q113 TS EAMCET 2020 · 10 Sep · Shift 2 MCQ

The length of a metal wire is found to be L_1 and L_2 when the tension of T_1 and T_2 are applied to it respectively. The natural length of the wire is

(A) $\frac{L_1T_1+L_2T_2}{T_2+T_1}$
(B) $\frac{L_1+L_2}{2}$
(C) $\frac{L_1T_2+L_2T_1}{T_2+T_1}$
(D) $\frac{L_1T_2-L_2T_1}{T_2-T_1}$

Answer: (D) $\frac{L_1T_2-L_2T_1}{T_2-T_1}$ · Official TGCHE final key

Q114 TS EAMCET 2020 · 9 Sep · Shift 1 MCQ

The wrong statement in the following is

(A) The bulk modulus for solids is much larger than for liquids
(B) Gases are least compressible
(C) The incompressibility of the solids is due to the tight coupling between neighbouring atoms.
(D) The reciprocal of the bulk modulus is called compressibility

Answer: (B) Gases are least compressible · Official TGCHE final key

Q115 TS EAMCET 2020 · 9 Sep · Shift 2 MCQ

The average depth of an oil well is 2000 m. If the bulk modulus of oil is 8×10^8 N/m^2 and the density of oil is 1500 kg/m^3. The fractional compression at the bottom of the well is (take g=10 m/s^2)

(A) 3.75 %
(B) 1.75 %
(C) 2.75 %
(D) 4.75 %

Answer: (A) 3.75 % · Official TGCHE final key

Q116 TS EAMCET 2019 · 6 May · Shift 1 MCQ

A copper wire and an aluminium wire have lengths in the ratio 5:2, diameters in the ratio 4:3 and forces applied in the ratio 4:5. Find the ratio of increase in length of the copper wire to that of aluminium wire. (Let $Y_{Cu} = 1.1 \times 10^{11}\ \mathrm{Nm}^{-2}$, $Y_{Al} = 0.7 \times 10^{11}\ \mathrm{Nm}^{-2}$)

(A) $\frac{176}{63}$
(B) $\frac{63}{88}$
(C) $\frac{189}{110}$
(D) $\frac{33}{89}$

Answer: (B) $\frac{63}{88}$ · Official TGCHE final key

Q117 TS EAMCET 2019 · 4 May · Shift 1 MCQ

A horizontal aluminium rod of diameter 4 cm projects 6 cm from a wall. An object of mass 400π kg is suspended from the end of the rod. The shear modulus of aluminium is $3 \times 10^{10}\ \mathrm{N/m^2}$. The vertical deflection of the end of the rod is (Let $g = 10\ \mathrm{m/s^2}$)

(A) 0.01 mm
(B) 0.02 mm
(C) 0.03 mm
(D) 0.04 mm

Answer: (B) 0.02 mm · Official TGCHE final key

Q118 TS EAMCET 2019 · 4 May · Shift 2 MCQ

A uniform rod of length L is rotated in a horizontal plane about a vertical axis through one of its ends. The angular speed of rotation is ω. Find increase in length of the rod, if ρ and Y are the density and Young's modulus of the rod respectively

(A) $\frac{\rho\omega^3 Y}{4L^2}$
(B) $\frac{4\rho\omega^2 L^3}{3Y}$
(C) $\frac{\rho\omega^2 L^3}{3Y}$
(D) $\frac{\rho\omega^3 L^3}{8Y}$

Answer: (C) $\frac{\rho\omega^2 L^3}{3Y}$ · Official TGCHE final key

Q119 TS EAMCET 2019 · 3 May · Shift 1 MCQ

How much pressure (in atm) is needed to compress a sample of water by 0.4%? (Assume Bulk modulus of water $\simeq 2.0 \times 10^9$ Pa)

(A) 60 atm
(B) 70 atm
(C) 80 atm
(D) 90 atm

Answer: (C) 80 atm · Official TGCHE final key

Q120 TS EAMCET 2019 · 3 May · Shift 2 MCQ

A copper wire of cross-sectional area $0.01\ \mathrm{cm^2}$ is under a tension of 22 N. Find the percentage change in the cross-sectional area (Young's modulus of copper $= 1.1 \times 10^{11}\ \mathrm{N/m^2}$ and Poisson ratio $= 0.32$)

(A) 12.6×10^{-3}

(B) 8.6×10^{-3}

(C) 6.4×10^{-3}

(D) 2.8×10^{-3}

Answer: (A) 12.6×10^{-3} · Official TGCHE final key

Q121 AP EAMCET 2019 · 23 Apr · Shift 1 MCQ

A uniform wire of length $10\ \mathrm{m}$ and diameter $0.6\ \mathrm{mm}$ is stretched by $6\ \mathrm{mm}$ with certain force. If the Poisson's ratio of the material of the wire is 0.3, then the change in diameter of the wire is

(A) $108 \times 10^{-8}\ \mathrm{m}$

(B) $108 \times 10^{-6}\ \mathrm{m}$

(C) $10.8 \times 10^{-8}\ \mathrm{m}$

(D) $1.08 \times 10^{-8}\ \mathrm{m}$

Answer: (C) $10.8 \times 10^{-8}\ \mathrm{m}$ · Official APSCHE final key

Q122 AP EAMCET 2019 · 22 Apr · Shift 1 MCQ

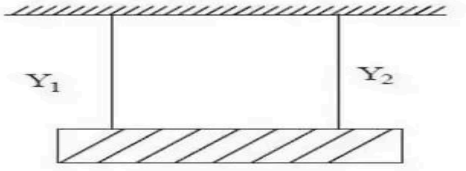
Two wires of equal length and equal cross sectional areas are suspended as shown in the figure. Their Young's modulii are Y_1 and Y_2 respectively. The equivalent Young's modulus is

(see the figure above)

Question Number : 93 Question Id : 1874634413 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two wires of equal length and equal cross sectional areas are suspended as shown in the figure. Their Young's modulii are Y_1 and Y_2 respectively. The equivalent Young's modulus is

ఒకే పొడవు, ఒకే అడ్డుకోతవైశాల్యం గల రెండు తీగలను పటములో చూపిన విధంగా వ్రేలాడదీసినారు. వాటి యంగ్ గుణకాలు వరుసగా Y_1 మరియు Y_2 అయిన ఫలిత యంగ్ గుణకం



Options :

1. $Y_1 + Y_2$
2. $\frac{Y_1 + Y_2}{2}$
3. $\frac{Y_1 Y_2}{Y_1 + Y_2}$
4. $\sqrt{Y_1 Y_2}$

(A) $Y_1 + Y_2$
(B) $\frac{Y_1 + Y_2}{2}$
(C) $\frac{Y_1 Y_2}{Y_1 + Y_2}$
(D) $\sqrt{Y_1 Y_2}$

Answer: (B) $\frac{Y_1 + Y_2}{2}$ · Official APSCHE final key

Q123 AP EAMCET 2019 · 22 Apr · Shift 2 MCQ

The area of cross-section of steel wire is $0.1\ \text{cm}^2$ and Young's modulus of steel is $2 \times 10^{11}\ \text{N m}^{-2}$. The force required to stretch by 0.1% of its length is

(A) $1000\ \text{N}$
(B) $2000\ \text{N}$
(C) $5000\ \text{N}$
(D) $4000\ \text{N}$

Answer: (B) $2000\ \text{N}$ · Official APSCHE final key

Q124 AP EAMCET 2019 · 21 Apr · Shift 1 MCQ

The following four wires are made of the same material. If same tension is applied to each, the wire having largest extension is
a) length 0.5 m, diameter 0.5 mm
b) length 1 m, diameter 1 mm
c) length 2 m, diameter 2 mm
d) length 3 m, diameter 3 mm

(A) a
(B) b
(C) c
(D) d

Answer: (A) a · Official APSCHE final key

Q125 AP EAMCET 2019 · 20 Apr · Shift 1 MCQ

A solid copper cube of 7 cm edge is subjected to a hydraulic pressure of 8000 kPa. The volume contraction of the copper cube is
(Bulk modulus of copper $= 140$ GPa)

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(A) $196 \times 10^{-3}\ \mathrm{cm}^3$
(B) $19.6 \times 10^{-6}\ \mathrm{cm}^3$
(C) $19.6 \times 10^{-3}\ \mathrm{cm}^3$
(D) $196 \times 10^{3}\ \mathrm{cm}^3$

Answer: (C) $19.6 \times 10^{-3}\ \mathrm{cm}^3$ · Official APSCHE final key

Q126 AP EAMCET 2019 · 20 Apr · Shift 2 MCQ

A one metre steel wire of negligible mass and area of cross-section $0.01\ \mathrm{cm}^2$ is kept on a smooth horizontal table with one end fixed. A ball of mass 1 kg is attached to the other end. The ball and the wire are rotating with an angular velocity of ω. If the elongation of the wire is 2 mm, then ω is (Young's modulus of steel = $2 \times 10^{11}\ \mathrm{Nm}^{-2}$)

(A) $5\ \mathrm{rad\ s}^{-1}$
(B) $10\ \mathrm{rad\ s}^{-1}$
(C) $15\ \mathrm{rad\ s}^{-1}$
(D) $20\ \mathrm{rad\ s}^{-1}$

Answer: (D) $20\ \mathrm{rad\ s}^{-1}$ · Official APSCHE final key

Q127 TS EAMCET 2018 · 5 May · Shift 1 MCQ

Young's modulus experiment is performed on a steel wire of 1 m length and 8 mm diameter. The mass required to be added in the experiment to produce 5 mm elongation of the wire is ($Y_{steel} = 2 \times 10^{9}\ \mathrm{Nm}^{-2}$, $g = 10\ \mathrm{m/s}^2$)

(A) 25 kg
(B) 50 kg
(C) 250 kg
(D) 500 kg

Answer: (B) 50 kg · The council's preliminary key

Q128 TS EAMCET 2018 · 4 May · Shift 1 MCQ

String AB of unstretched length L is stretched by applying a force F at the mid-point C such that the segments AC and BC make an angle 'θ' with AB as shown in the figure. The string may be considered as an elastic element with a force to elongation ratio K. The force F is given by

(see the figure above)

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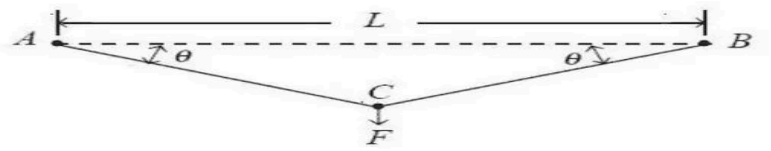
Question Number : 87 Question Id : 4928631687 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical
Correct : 1 Wrong : 0

String AB of unstretched length L is stretched by applying a force F at the mid-point C such that the segments AC and BC make an angle 'θ' with AB as shown in the figure. The string may be considered as an elastic element with a force to elongation ratio K. The force F is given by

పటంలో చూపిన విధంగా, సాగదీయుటకు ముందు L పొడవున్న ఒక తంత్రి మధ్య బిందువు C వద్ద F బలాన్ని, AC మరియు BC భాగాలు AB తో 'θ' కోణం చేయునట్లు ప్రయోగించారు. తంత్రిని స్థితిస్థాపక భాగంగా దాని బలం మరియు వృద్ధి నిష్పత్తి K గా ఆలోచిస్తే F విలువ



Options :
1. $KL(1-\tan\theta)\sin\theta$
2. $2KL(1-\cos\theta)\tan\theta$
3. $KL(1-\cos\theta)\tan\theta$
4. $2KL(1-\sin\theta)\tan\theta$

(A) $KL(1-\tan\theta)\sin\theta$
(B) $2KL(1-\cos\theta)\tan\theta$
(C) $KL(1-\cos\theta)\tan\theta$
(D) $2KL(1-\sin\theta)\tan\theta$

Options (2) or (3) were accepted. More than one answer was accepted. · The council's preliminary key

Q129 TS EAMCET 2018 · 4 May · Shift 1 MCQ

A steel rod has radius 50 mm and length 2 m. It is stretched along its length with a force of 400 kN. This causes an elongation of 0.5 mm. Find the (approximate) Young's modulus of steel from this information.

(A) $2\times10^{10}\ \mathrm{N\,m^2}$ (sic)
(B) $10^{11}\ \mathrm{N\,m^2}$ (sic)
(C) $2\times10^{11}\ \mathrm{N\,m^2}$ (sic)
(D) $10^{12}\ \mathrm{N\,m^2}$ (sic)

Answer: (C) $2\times10^{11}\ \mathrm{N\,m^2}$ **(sic)** · The council's preliminary key

Q130 TS EAMCET 2018 · 4 May · Shift 2 MCQ

In a tensile test on a metal bar of diameter 0.015 m and length 0.2 m, the relation between the load and elongation within the proportional limit is found to be $F = 97.2\times10^6\,(\Delta L)$ where F is the load in N and ΔL is the elongation in m. The Young's modulus of the material in GPa is

(A) 75.5
(B) 85.6
(C) 98.7
(D) 110

Answer: (D) 110 · The council's preliminary key

Q131 AP EAMCET 2018 · 24 Apr · Shift 1 MCQ

A copper wire of cross-sectional area $0.01\ \text{cm}^2$ is under a tension of 22 N. The decrease in the cross-sectional area is
(Young modulus $= 1.1 \times 10^{11}\ \text{Nm}^{-2}$, Poisson's ratio = 0.32)

(A) $0.128 \times 10^{-6}\ \text{cm}^2$
(B) $128 \times 10^{-6}\ \text{cm}^2$
(C) $12.8 \times 10^{-6}\ \text{cm}^2$
(D) $1.28 \times 10^{-6}\ \text{cm}^2$

Answer: (D) $1.28 \times 10^{-6}\ \text{cm}^2$ · The council's preliminary key

Q132 AP EAMCET 2018 · 24 Apr · Shift 2 MCQ

For a material, the ratio of Young's modulus to rigidity modulus is 2.8. If some force is applied on a wire made of this material, its cross-sectional area decreases by 2%. The percentage change in its length is _____

(A) 0.4
(B) 1.6
(C) 2.5
(D) 4

Answer: (C) 2.5 · The council's preliminary key

Q133 AP EAMCET 2018 · 23 Apr · Shift 1 MCQ

A rubber cube of side 5 cm has one face fixed while a tangential force 1800 N is applied on its opposite face. If modulus of rigidity of rubber is $2.4 \times 10^6\ \text{Nm}^{-2}$ then the lateral displacement of the strained face is _____

(A) 3 mm
(B) 5 mm
(C) 15 mm
(D) 1.5 mm

Answer: (C) 15 mm · The council's preliminary key

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Q134 AP EAMCET 2018 · 22 Apr · Shift 1 MCQ

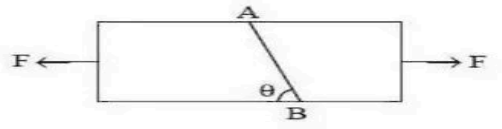
Two equal and opposite forces each F act on a rod of uniform cross-sectional area 'a' as shown in the figure. Shearing stress on the section AB will be

(see the figure above)

Question Number : 93 Question Id : 4557343773 Question Type : MCQ Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Two equal and opposite forces each F act on a rod of uniform cross-sectional area 'a' as shown in the figure. Shearing stress on the section AB will be

ఒక్కొక్కటి F విలువ గల రెండు సమాన మరియు వ్యతిరేక బలాలు 'a' ఏకరీతి మధ్యచ్ఛేద వైశాల్యము గల కడ్డీ పై పటంలో చూపిన విధంగా పని చేయుచున్నవి. కడ్డీ భాగము AB పై గల విమోటన ప్రతిబలం



Options :

1. $\frac{F\sin\theta\cos\theta}{a}$
2. $\frac{F\sin\theta}{a}$
3. $\frac{F\cos\theta}{a}$
4. $\frac{F\sin^2\theta}{a}$

(A) $\frac{F\sin\theta\cos\theta}{a}$
(B) $\frac{F\sin\theta}{a}$
(C) $\frac{F\cos\theta}{a}$
(D) $\frac{F\sin^2\theta}{a}$

Answer: (A) $\frac{F\sin\theta\cos\theta}{a}$ · The council's preliminary key

Q135 AP EAMCET 2018 · 22 Apr · Shift 2 MCQ

A sphere of mass 2 kg and diameter 4.5 cm is attached to the lower end of a steel wire of 2 m length and area of cross section $0.24 \times 10^{-6}\ \mathrm{m}^2$. The wire is suspended from 205 cm high ceiling of a room. When the system is made to oscillate as a simple pendulum, the sphere just grazes the floor at its lowest position. The velocity of the sphere at the lowest position is (Young's modulus of steel $= 2 \times 10^{11}\ \mathrm{Nm}^{-2}$ and acceleration due to gravity $= 10\ \mathrm{ms}^{-2}$)

(A) $10\ \mathrm{ms}^{-1}$
(B) $12\ \mathrm{ms}^{-1}$
(C) $15\ \mathrm{ms}^{-1}$
(D) $18\ \mathrm{ms}^{-1}$

Answer: (A) $10\ \mathrm{ms}^{-1}$ · The council's preliminary key

Q136 TS EAMCET 2017 · 12 May · Offline MCQ

The Young's modulus of a material is $2 \times 10^{11}\ \mathrm{N/m^2}$ and its elastic limit is $1 \times 10^{8}\ \mathrm{N/m^2}$. For a wire of 1 m length of this material, the maximum elongation achievable is

(A) 0.2 mm
(B) 0.3 mm
(C) 0.4 mm
(D) 0.5 mm

Answer: (D) 0.5 mm · The council's preliminary key

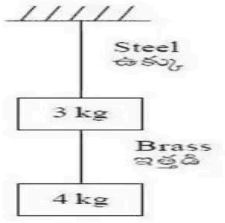
Q137 AP EAMCET 2017 · 26 Apr · Shift 1 MCQ

The ratios of lengths, areas of cross section and Young's modulii of steel to that of brass wires shown in the figure are a, b, c respectively. The ratio of increase in the lengths of brass to that of steel wires is [Assume that the masses of Steel and Brass wires are negligible]
(see the figure above)

Question Number : 93 Question Id : 1017174573 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

The ratios of lengths, areas of cross section and Young's modulii of steel to that of bra wires shown in the figure are a, b, c respectively. The ratio of increase in the lengths brass to that of steel wires is [Assume that the masses of Steel and Brass wires are negligibl

పటంలో చూపిన విధంగా ఉన్న ఉక్కు మరియు ఇత్తడి తీగల పొడవుల, మధ్యచ్ఛేద వైశాల్యాల మరియ యంగ్ గుణకాల నిష్పత్తులు వరుసగా a, b, c లు అయిన ఇత్తడి, ఉక్కు తీగల పొడవులలో పెరుగుద నిష్పత్తి (ఉక్కు మరియు ఇత్తడి తీగలు ద్రవ్యరాశి లేనివి అనుకోండి)



Options :
1. $\frac{4a}{7bc}$
2. $\frac{7bc}{4a}$
3. $\frac{4bc}{7a}$
4. $\frac{7a}{4bc}$

(A) $\frac{4a}{7bc}$
(B) $\frac{7bc}{4a}$
(C) $\frac{4bc}{7a}$
(D) $\frac{7a}{4bc}$

Answer: (C) $\frac{4bc}{7a}$ · The council's preliminary key

Q138 AP EAMCET 2017 · 26 Apr · Shift 2 MCQ

One end of a steel wire of radius 'r' is fixed to a ceiling and a load of 3 kg is attached to the free end of the wire. Another wire made of copper of radius '2r' is attached to the bottom of 3 kg load and a 2 kg load is attached to the free end of the copper wire. The ratio of longitudinal strains produced in copper and steel wires is
(Young modulus of steel $= 20 \times 10^{10}\ \mathrm{Nm^{-2}}$)
(Young modulus of copper $= 12 \times 10^{10}\ \mathrm{Nm^{-2}}$)

(A) $6 : 1$
(B) $1 : 6$
(C) $2 : 3$
(D) $3 : 2$

Answer: (B) $1 : 6$ · The council's preliminary key

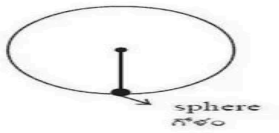
Q139 AP EAMCET 2017 · 25 Apr · Shift 1 MCQ

A sphere of mass 4 kg is attached to one end of a steel wire of length 1 m and radius 1 mm. It is whirled in a vertical circle with an angular velocity 10 rad s^{-1}. If the sphere is at the lowest point of its path, the elongation in the wire is _____ ($g = 10\ \mathrm{ms^{-2}}$, $Y_{steel} = 20 \times 10^{10}\ \mathrm{Nm^{-2}}$)
(see the figure above)

Question Number : 93 Question Id : 1017174253 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A sphere of mass 4 kg is attached to one end of a steel wire of length 1 m and radius 1 mm It is whirled in a vertical circle with an angular velocity 10 rad s^{-1}. If the sphere is at the lowest point of its path, the elongation in the wire is _____
($g = 10\ ms^{-2}$, $Y_{steel} = 20 \times 10^{10}\ Nm^{-2}$)

4 kg ద్రవ్యరాశి గల ఒక గోళాన్ని 1 m పొడవు మరియు 1 mm వ్యాసార్ధం గల ఒక ఉక్కు తీగ ఒ చివరకు తగిలించారు. దానిని ఒక నిలువు వృత్తంలో 10 rad s^{-1} కోణీయ వేగముతో తిప్పారు. దా మార్గంలోని నిమ్నతమ బిందువు వద్ద గోళం ఉన్నపుడు ఆ తీగలోని సాగుదల _____
($g = 10\ ms^{-2}$, $Y_{ఉక్కు} = 20 \times 10^{10}\ Nm^{-2}$)



Options :
1. 0.2 mm
2. 0.3 mm
3. 0.7 mm
4. 0.4 mm

(A) 0.2 mm
(B) 0.3 mm
(C) 0.7 mm
(D) 0.4 mm

Answer: (C) 0.7 mm · The council's preliminary key

Q140 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

Assertion (A): When a spring is cut into two equal parts, spring constant of each piece is twice that of the original spring.
Reason (R): Spring constant is inversely proportional to length of the spring.

(A) (A), (R) are true : (R) is the correct explanation of (A)
(B) (A), (R) are true : (R) is not the correct explanation of (A)
(C) (A) is true, (R) is false
(D) (A) is false, (R) is true

Answer: (A) (A), (R) are true : (R) is the correct explanation of (A) · The council's preliminary key

Q141 AP EAMCET 2017 · 25 Apr · Shift 2 MCQ

A material has a Poisson's ratio 0.5. If a uniform rod of this material suffers a longitudinal strain of 2×10^{-3}, then the percentage change in its volume is

(A) 0.6
(B) 0.4
(C) 0.2
(D) Zero

Answer: (D) Zero · The council's preliminary key

Q142 AP EAMCET 2017 · 24 Apr · Shift 1 MCQ

A uniform steel rod of mass 1.8 kg and length 0.8 m is hung from a nail with the help of a steel wire of area of cross-section $0.01\ \text{mm}^2$ and unstretched length of 1 m as shown in the figure. The centre of mass of the rod lies vertically below the nail. The increase in the distance between the centre of mass of the rod and the nail due to stretching of the wire as the rod hungs is _____ mm.
(Young's modulus of steel $= 2 \times 10^{11}\ \text{Nm}^{-2}$ and acceleration due to gravity $= 10\ \text{ms}^{-2}$)
(see the figure above)

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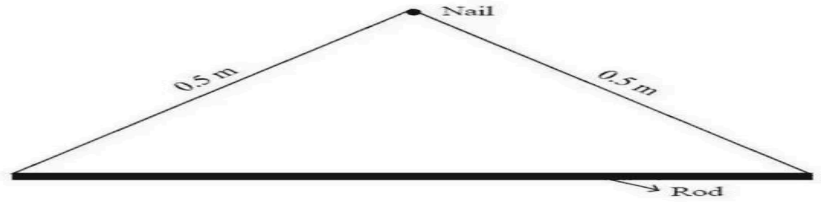
Question Number : 93 Question Id : 1017173773 Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

A uniform steel rod of mass 1.8 kg and length 0.8 m is hung from a nail with the help of a steel wire of area of cross-section 0.01 mm^2 and unstretched length of 1 m as shown in the figure. The centre of mass of the rod lies vertically below the nail. The increase in the distance between the centre of mass of the rod and the nail due to stretching of the wire as the rod hungs is _____ mm.
(Young's modulus of steel $= 2\times10^{11}\ Nm^{-2}$ and acceleration due to gravity $= 10\ ms^{-2}$)

పటంలో చూపిన విధంగా 1.8 kg ద్రవ్యరాశి మరియు 0.8 m పొడవు గల ఒక ఏకరీతి ఉక్కు కడ్డీని 0.01 mm^2 మధ్యచ్ఛేద వైశాల్యం మరియు సాగదీయబడని పొడవు 1 m గల ఒక ఉక్కు తీగ సహాయంతో ఒక మేకు నుండి వ్రేలాడదీయబడినది. కడ్డీ యొక్క ద్రవ్యరాశి కేంద్రం నిట్టనిలువుగా మేకు క్రింద కలదు. తీగ సాగుట వలన, మేకుకు మరియు కడ్డీ ద్రవ్యరాశి కేంద్రానికి మధ్య గల దూరంలో పెరుగుదల _____ mm.
(ఉక్కు యంగ్ గుణకం $= 2\times10^{11}\ Nm^{-2}$ మరియు గురుత్వ త్వరణం $= 10\ ms^{-2}$)



Options :
1. 50
2. 25
3. 12.5
4. 6.25

(A) 50
(B) 25
(C) 12.5
(D) 6.25

Answer: (D) 6.25 · The council's preliminary key

Q143 AP EAMCET 2017 · 24 Apr · Shift 2 MCQ

A 500 g ball is attached to one end of an aluminum wire of area of cross-section 0.5 mm^2 and an unstretched length of 1.4 m. The other end of the wire is fixed to the top of a vertical pole. The ball rotates about the pole in a horizontal plane such that the angle between the wire and the horizontal is 30°. The increase in the length of the wire is _____ mm. (Young's modulus of aluminum $= 0.7\times10^{11}\ Nm^{-2}$ and acceleration due to gravity $= 10\ ms^{-2}$)

(A) 0.1
(B) 0.2
(C) 0.3
(D) 0.4

Answer: (D) 0.4 · The council's preliminary key

Q144 AP EAMCET 2016 · 29 Apr · Offline MCQ

When a load of 80 N is suspended from a string, its length is 101 mm. If a load of 100 N is suspended, its length is 102 mm. If a load of 160 N is suspended from it, then length of the string is (Assume the area of cross-section unchanged)

(A) $15.5\ \text{cm}$
(B) $13.5\ \text{cm}$
(C) $16.5\ \text{cm}$
(D) $10.5\ \text{cm}$

Answer: (D) $10.5\ \text{cm}$ · The council's preliminary key

Q145 AP EAMCET 2014 · 22 May · Offline MCQ

Two wires of the same material and length but diameters in the ratio 1 : 2 are stretched by the same force. The elastic potential energy per unit volume for the two wires when stretched by the same force will be in the ratio

(A) 16 : 1
(B) 1 : 1
(C) 2 : 1
(D) 4 : 1

Answer: (A) 16 : 1 · The council's preliminary key

Q146 AP EAMCET 2013 · 10 May · Offline MCQ

A tension of 20 N is applied to a copper wire of cross sectional area $0.01\ \text{cm}^2$, Young's Modulus of copper is $1.1 \times 10^{11}\ \text{N/m}^2$ and Poisson's ratio is 0.32. The decrease in cross sectional area of the wire is

(A) $1.16 \times 10^{-6}\ \text{cm}^2$
(B) $1.16 \times 10^{-5}\ \text{m}^2$
(C) $1.16 \times 10^{-4}\ \text{m}^2$
(D) $1.16 \times 10^{-3}\ \text{cm}^2$

Answer: (A) $1.16 \times 10^{-6}\ \text{cm}^2$ · The council's preliminary key

Q147 AP EAMCET 2012 · 12 May · Offline MCQ

A tension of 22 N is applied to a copper wire of cross-sectional area $0.02\ \text{cm}^2$ Young's modulus of copper is $1.1 \times 10^{11}\ \text{N/m}^2$ and Poisson's ratio 0.32. The decrease in cross sectional area will be

(A) $1.28 \times 10^{-6}\ \text{cm}^2$
(B) $1.6 \times 10^{-6}\ \text{cm}^2$
(C) $2.56 \times 10^{-6}\ \text{cm}^2$
(D) $0.64 \times 10^{-6}\ \text{cm}^2$

Answer: (A) $1.28 \times 10^{-6}\ \text{cm}^2$ · Official APSCHE final key

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Q148 AP EAMCET 2011 · 8 May · Offline MCQ

Two blocks of masses 1 kg and 2 kg are connected by a metal wire going over a smooth pulley. The breaking stress of metal is $\frac{40}{3\pi} \times 10^6\ \mathrm{Nm}^{-2}$. What should be the minimum radius of wire used if it should not break ? ($g = 10\ \mathrm{ms}^{-2}$)

(A) 0.5 mm
(B) 1 mm
(C) 1.5 mm
(D) 2 mm

Answer: (B) 1 mm · The council's preliminary key

Q149 AP EAMCET 2010 · 30 May · Offline MCQ

Match the following :
List I
A) Hooke's law
B) Shearing strain
C) Bulk strain
D) Elastic Fatigue
List II
I) Tangential strain
II) Temporary loss of elastic property
III) Elastic limit
IV) 3 times the linear strain

(A) A-II, B-I, C-IV, D-III
(B) A-III, B-IV, C-I, D-II
(C) A-III, B-I, C-IV, D-II
(D) A-I, B-II, C-III, D-IV

Answer: (C) A-III, B-I, C-IV, D-II · Official APSCHE final key

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