

PHYSICS · JEE MAIN

Experimental Skills

Chapter-wise previous year questions, with answer key

42

PYQS

2020–2025

PAPERS

4

TOPICS

Optics Experiments

Pendulum and g Measurement

Vernier Callipers and Screw Gauge

p-n Junction Characteristics

- 1 Attempt each question on paper first. They're grouped by topic, newest papers first.
- 2 Check yourself against the answer key at the end.
- 3 Got one wrong? Tap "Step-by-step solution" under it for the full working.

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Optics Experiments · 4 PYQs

Q1 JEE Main 2024 · 4 Apr · Shift 1

In an experiment to measure focal length (f) of convex lens, the least counts of the measuring scales for the position of object (u) and for the position of image (v) are Δu and Δv , respectively. The error in the measurement of the focal length of the convex lens will be:

(A) $2f \left[\frac{\Delta u}{u} + \frac{\Delta v}{v} \right]$

(B) $f \left[\frac{\Delta u}{u} + \frac{\Delta v}{v} \right]$

(C) $f^2 \left[\frac{\Delta u}{u^2} + \frac{\Delta v}{v^2} \right]$

(D) $\frac{\Delta u}{u} + \frac{\Delta v}{v}$

[Step-by-step solution ► prepwiser.in/questions/5H0ucaSxoR](https://www.prepwiser.in/questions/5H0ucaSxoR)

Q2 JEE Main 2023 · 6 Apr · Shift 2

A 2 meter long scale with least count of 0.2cm is used to measure the locations of objects on an optical bench. While measuring the focal length of a convex lens, the object pin and the convex lens are placed at 80cm mark and 1m mark, respectively. The image of the object pin on the other side of lens coincides with image pin that is kept at 180cm mark. The % error in the estimation of focal length is:

(A) 1.70

(B) 0.51

(C) 1.02

(D) 0.85

[Step-by-step solution ► prepwiser.in/questions/sfshqXQCQH](https://www.prepwiser.in/questions/sfshqXQCQH)

Q3 JEE Main 2023 · 30 Jan · Shift 1

In an experiment for estimating the value of focal length of converging mirror, image of an object placed at 40cm from the pole of the mirror is formed at distance 120cm from the pole of the mirror. These distances are measured with a modified scale in which there are 20 small divisions in 1cm. The value of error in measurement of focal length of the mirror is $\frac{1}{K}$ cm. The value of K is _____.

Numerical answer: enter the value.

[Step-by-step solution ► prepwiser.in/questions/Qf2mgWnBVU](https://www.prepwiser.in/questions/Qf2mgWnBVU)

Q4 JEE Main 2023 · 29 Jan · Shift 2

In an experiment of measuring the refractive index of a glass slab using travelling microscope in physics lab, a student measures real thickness of the glass slab as 5.25 mm and apparent thickness of the glass slab as 5.00 mm. Travelling microscope has 20 divisions in one cm on main scale and 20 divisions on vernier scale is equal to 49 divisions on main scale. The estimated uncertainty in the measurement of refractive index of the slab is $\frac{x}{10} \times 10^{-3}$, where x is _____

Numerical answer: enter the value.

[Step-by-step solution ► prepwiser.in/questions/51GvxwIjZv](https://www.prepwiser.in/questions/51GvxwIjZv)

Pendulum and g Measurement · 1 PYQs

Q5 JEE Main 2020 · 8 Jan · Shift 2

A simple pendulum is being used to determine the value of gravitational acceleration g at a certain place. The length of the pendulum is 25.0 cm and a stop watch with 1 s resolution measures the time taken for 40 oscillations to be 50 s. The accuracy in g is :

- (A) 4.40% (B) 3.40%
(C) 2.40% (D) 5.40%

[Step-by-step solution ► prepwiser.in/questions/oaoTlemV6k](https://www.prepwiser.in/questions/oaoTlemV6k)

Vernier Callipers and Screw Gauge · 36 PYQs

Q6 JEE Main 2025 · 4 Apr · Shift 2

For the determination of refractive index of glass slab, a travelling microscope is used whose main scale contains 300 equal divisions equals to 15 cm . The vernier scale attached to the microscope has 25 divisions equals to 24 divisions of main scale. The least count (LC) of the travelling microscope is (in cm) :

- (A) 0.002 (B) 0.0025
(C) 0.0005 (D) 0.001

[Step-by-step solution ► prepwiser.in/questions/qrxfnLsnLY](https://www.prepwiser.in/questions/qrxfnLsnLY)

Q7 JEE Main 2025 · 24 Jan · Shift 1

The least count of a screw gauge is 0.01 mm . If the pitch is increased by 75% and number of divisions on the circular scale is reduced by 50%, the new least count will be _____ $\times 10^{-3}$ mm

Numerical answer: enter the value.

[Step-by-step solution ► prepwiser.in/questions/JhNPQX8byy](https://www.prepwiser.in/questions/JhNPQX8byy)

Q8 JEE Main 2025 · 22 Jan · Shift 1

Given below are two statements :

Statement I: In a vernier callipers, one vernier scale division is always smaller than one main scale division.

Statement II : The vernier constant is given by one main scale division multiplied by the number of vernier scale divisions.

In the light of the above statements, choose the correct answer from the options given below.

- (A) Both Statement I and Statement II are false
(B) Statement I is true but Statement II is false
(C) Both Statement I and Statement II are true
(D) Statement I is false but Statement II is true

[Step-by-step solution ► prepwiser.in/questions/-95FqJurC3](https://www.prepwiser.in/questions/-95FqJurC3)

Q9 JEE Main 2024 · 9 Apr · Shift 1

One main scale division of a vernier caliper is equal to m units. If n^{th} division of main scale coincides with $(n + 1)^{\text{th}}$ division of vernier scale, the least count of the vernier caliper is :

- (A) $\frac{1}{(n+1)}$
- (B) $\frac{m}{(n+1)}$
- (C) $\frac{n}{(n+1)}$
- (D) $\frac{m}{n(n+1)}$

[Step-by-step solution ► prepwiser.in/questions/cyaRmGg9wT](https://www.prepwiser.in/questions/cyaRmGg9wT)

Q10 JEE Main 2024 · 8 Apr · Shift 2

There are 100 divisions on the circular scale of a screw gauge of pitch 1mm. With no measuring quantity in between the jaws, the zero of the circular scale lies 5 divisions below the reference line. The diameter of a wire is then measured using this screw gauge. It is found that 4 linear scale divisions are clearly visible while 60 divisions on circular scale coincide with the reference line. The diameter of the wire is :

- (A) 4.65 mm
- (B) 4.60 mm
- (C) 4.55 mm
- (D) 3.35 mm

[Step-by-step solution ► prepwiser.in/questions/0Q8pZ4xMsi](https://www.prepwiser.in/questions/0Q8pZ4xMsi)

Q11 JEE Main 2024 · 8 Apr · Shift 2

Least count of a vernier caliper is $\frac{1}{20N}$ cm. The value of one division on the main scale is 1mm. Then the number of divisions of main scale that coincide with N divisions of vernier scale is :

- (A) $\left(\frac{2N-1}{2N}\right)$
- (B) $\left(\frac{2N-1}{20N}\right)$
- (C) $(2N - 1)$
- (D) $\left(\frac{2N-1}{2}\right)$

[Step-by-step solution ► prepwiser.in/questions/5AcYP4tDMP](https://www.prepwiser.in/questions/5AcYP4tDMP)

Q12 JEE Main 2024 · 8 Apr · Shift 1

The diameter of a sphere is measured using a vernier caliper whose 9 divisions of main scale are equal to 10 divisions of vernier scale. The shortest division on the main scale is equal to 1mm. The main scale reading is 2cm and second division of vernier scale coincides with a division on main scale. If mass of the sphere is 8.635 g, the density of the sphere is:

- (A) 2.2g/cm³
- (B) 2.0g/cm³
- (C) 1.7g/cm³
- (D) 2.5g/cm³

[Step-by-step solution ► prepwiser.in/questions/tBSET6DZyj](https://www.prepwiser.in/questions/tBSET6DZyj)

Q13 JEE Main 2024 · 6 Apr · Shift 2

In a vernier calliper, when both jaws touch each other, zero of the vernier scale shifts towards left and its 4th division coincides exactly with a certain division on main scale. If 50 vernier scale divisions equal to 49 main scale divisions and zero error in the instrument is 0.04mm then how many main scale divisions are there in 1cm ?

- (A) 5 (B) 40
(C) 10 (D) 20

[Step-by-step solution ► prepwiser.in/questions/t7LX84cxOf](https://www.prepwiser.in/questions/t7LX84cxOf)

Q14 JEE Main 2024 · 6 Apr · Shift 2

In finding out refractive index of glass slab the following observations were made through travelling microscope 50 vernier scale division = 49MSD; 20 divisions on main scale in each cm

For mark on paper

$$\text{MSR} = 8.45\text{cm}, \text{VC} = 26$$

For mark on paper seen through slab

$$\text{MSR} = 7.12\text{cm}, \text{VC} = 41$$

For powder particle on the top surface of the glass slab

$$\text{MSR} = 4.05\text{cm}, \text{VC} = 1$$

(MSR = Main Scale Reading, VC = Vernier Coincidence)

Refractive index of the glass slab is :

- (A) 1.52 (B) 1.35
(C) 1.24 (D) 1.42

[Step-by-step solution ► prepwiser.in/questions/8fOTYik77L](https://www.prepwiser.in/questions/8fOTYik77L)

Q15 JEE Main 2024 · 6 Apr · Shift 1

While measuring diameter of wire using screw gauge the following readings were noted. Main scale reading is 1mm and circular scale reading is equal to 42 divisions. Pitch of screw gauge is 1mm and it has 100 divisions on circular scale. The diameter of the wire is $\frac{x}{50}$ mm. The value of x is :

- (A) 42 (B) 71
(C) 21 (D) 142

[Step-by-step solution ► prepwiser.in/questions/qYHWCIAI5](https://www.prepwiser.in/questions/qYHWCIAI5)

Q16 JEE Main 2024 · 5 Apr · Shift 2

A vernier callipers has 20 divisions on the vernier scale, which coincides with 19th division on the main scale. The least count of the instrument is 0.1mm. One main scale division is equal to _____ mm.

- (A) 5 (B) 2
(C) 1 (D) 0.5

[Step-by-step solution ► prepwiser.in/questions/8Am935SIxr](https://www.prepwiser.in/questions/8Am935SIxr)

Q17 JEE Main 2024 · 1 Feb · Shift 1

10 divisions on the main scale of a Vernier calliper coincide with 11 divisions on the Vernier scale. If each division on the main scale is of 5 units, the least count of the instrument is :

- (A) $\frac{5}{11}$ (B) $\frac{10}{11}$
(C) $\frac{50}{11}$ (D) $\frac{1}{2}$

[Step-by-step solution ► prepwisser.in/questions/K3yeDD6nE7](https://www.prepwisser.in/questions/K3yeDD6nE7)

Q18 JEE Main 2024 · 30 Jan · Shift 2

If 50 Vernier divisions are equal to 49 main scale divisions of a traveling microscope and one smallest reading of main scale is 0.5mm, the Vernier constant of traveling microscope is

- (A) 0.01 mm (B) 0.01 cm
(C) 0.1 mm (D) 0.1 cm

[Step-by-step solution ► prepwisser.in/questions/mh4NRJXrAc](https://www.prepwisser.in/questions/mh4NRJXrAc)

Q19 JEE Main 2024 · 27 Jan · Shift 1

Identify the physical quantity that cannot be measured using spherometer :

- (A) Radius of curvature of concave surface (B) Specific rotation of liquids
(C) Thickness of thin plates (D) Radius of curvature of convex surface

[Step-by-step solution ► prepwisser.in/questions/Y1GME7ongO](https://www.prepwisser.in/questions/Y1GME7ongO)

Q20 JEE Main 2024 · 27 Jan · Shift 2

Given below are two statements : one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A) : In Vernier calliper if positive zero error exists, then while taking measurements, the reading taken will be more than the actual reading.

Reason (R) : The zero error in Vernier Calliper might have happened due to manufacturing defect or due to rough handling.

In the light of the above statements, choose the correct answer from the options given below :

- (A) Both (A) and (R) are correct and (R) is the correct explanation of (A)
(B) Both (A) and (R) are correct but (R) is not the correct explanation of (A)
(C) (A) is true but (R) is false
(D) (A) is false but (R) is true

[Step-by-step solution ► prepwisser.in/questions/e5sGjKUUmE](https://www.prepwisser.in/questions/e5sGjKUUmE)

Q21 JEE Main 2023 · 10 Apr · Shift 2

In an experiment with vernier callipers of least count 0.1mm, when two jaws are joined together the zero of vernier scale lies right to the zero of the main scale and 6th division of vernier scale coincides with the main scale division. While measuring the diameter of a spherical bob, the zero of vernier scale lies in between 3.2cm and 3.3cm marks, and 4th division of vernier scale coincides with the main scale division. The diameter of bob is measured as

- (A) 3.18cm (B) 3.22cm
(C) 3.26cm (D) 3.25cm

[Step-by-step solution ► prepwisser.in/questions/4tnYdp0DWr](https://www.prepwisser.in/questions/4tnYdp0DWr)

Q22 JEE Main 2023 · 30 Jan · Shift 1

In a screw gauge, there are 100 divisions on the circular scale and the main scale moves by 0.5mm on a complete rotation of the circular scale. The zero of circular scale lies 6 divisions below the line of graduation when two studs are brought in contact with each other. When a wire is placed between the studs, 4 linear scale divisions are clearly visible while 46th division the circular scale coincide with the reference line. The diameter of the wire is _____ $\times 10^{-2}$ mm.

Numerical answer: enter the value.

[Step-by-step solution ► prepwiser.in/questions/l7KKBntjc-](https://www.prepwiser.in/questions/l7KKBntjc-)

Q23 JEE Main 2022 · 29 Jul · Shift 1

A travelling microscope has 20 divisions per cm on the main scale while its vernier scale has total 50 divisions and 25 vernier scale divisions are equal to 24 main scale divisions, what is the least count of the travelling microscope?

- (A) 0.001 cm (B) 0.002 mm
(C) 0.002 cm (D) 0.005 cm

[Step-by-step solution ► prepwiser.in/questions/ndh51WakwM](https://www.prepwiser.in/questions/ndh51WakwM)

Q24 JEE Main 2022 · 27 Jul · Shift 1

The one division of main scale of Vernier callipers reads 1mm and 10 divisions of Vernier scale is equal to the 9 divisions on main scale. When the two jaws of the instrument touch each other, the zero of the Vernier lies to the right of zero of the main scale and its fourth division coincides with a main scale division. When a spherical bob is tightly placed between the two jaws, the zero of the Vernier scale lies in between 4.1cm and 4.2cm and 6th Vernier division coincides scale division. The diameter of the bob will be _____ $\times 10^{-2}$ cm.

Numerical answer: enter the value.

[Step-by-step solution ► prepwiser.in/questions/a_RZfIPfRY](https://www.prepwiser.in/questions/a_RZfIPfRY)

Q25 JEE Main 2022 · 26 Jul · Shift 2

In a Vernier Calipers, 10 divisions of Vernier scale is equal to the 9 divisions of main scale. When both jaws of Vernier calipers touch each other, the zero of the Vernier scale is shifted to the left of zero of the main scale and 4th Vernier scale division exactly coincides with the main scale reading. One main scale division is equal to 1mm. While measuring diameter of a spherical body, the body is held between two jaws. It is now observed that zero of the Vernier scale lies between 30 and 31 divisions of main scale reading and 6th Vernier scale division exactly coincides with the main scale reading. The diameter of the spherical body will be :

- (A) 3.02 cm (B) 3.06 cm
(C) 3.10 cm (D) 3.20 cm

[Step-by-step solution ► prepwiser.in/questions/gDjHEAptjx](https://www.prepwiser.in/questions/gDjHEAptjx)

Q26 JEE Main 2022 · 26 Jul · Shift 1

A screw gauge of pitch 0.5 mm is used to measure the diameter of uniform wire of length 6.8 cm , the main scale reading is 1.5 mm and circular scale reading is 7 . The calculated curved surface area of wire to appropriate significant figures is :

[Screw gauge has 50 divisions on its circular scale]

- (A) 6.8 cm^2
- (B) 3.4 cm^2
- (C) 3.9 cm^2
- (D) 2.4 cm^2

[Step-by-step solution ► prepwisser.in/questions/Y0xf2XVcgK](https://www.prepwisser.in/questions/Y0xf2XVcgK)

Q27 JEE Main 2022 · 30 Jun · Shift 1

If n main scale divisions coincide with $(n + 1)$ vernier scale divisions. The least count of vernier callipers, when each centimetre on the main scale is divided into five equal parts, will be :

- (A) $\frac{2}{n+1}\text{ mm}$
- (B) $\frac{5}{n+1}\text{ mm}$
- (C) $\frac{1}{2n}\text{ mm}$
- (D) $\frac{1}{5n}\text{ mm}$

[Step-by-step solution ► prepwisser.in/questions/qY4j4GdeKo](https://www.prepwisser.in/questions/qY4j4GdeKo)

Q28 JEE Main 2022 · 29 Jun · Shift 2

The Vernier constant of Vernier callipers is 0.1 mm and it has zero error of $(-0.05)\text{ cm}$. While measuring diameter of a sphere, the main scale reading is 1.7 cm and coinciding vernier division is 5 . The corrected diameter will be _____ $\times 10^{-2}\text{ cm}$.

Numerical answer: enter the value.

[Step-by-step solution ► prepwisser.in/questions/1k_Tn601q3](https://www.prepwisser.in/questions/1k_Tn601q3)

Q29 JEE Main 2022 · 26 Jun · Shift 2

A travelling microscope is used to determine the refractive index of a glass slab. If 40 divisions are there in 1 cm on main scale and 50 Vernier scale divisions are equal to 49 main scale divisions, then least count of the travelling microscope is _____ $\times 10^{-6}\text{ m}$.

Numerical answer: enter the value.

[Step-by-step solution ► prepwisser.in/questions/MjNSBDblHB](https://www.prepwisser.in/questions/MjNSBDblHB)

Q30 JEE Main 2022 · 26 Jun · Shift 1

In a vernier callipers, each cm on the main scale is divided into 20 equal parts. If tenth vernier scale division coincides with ninth main scale division. Then the value of vernier constant will be _____ $\times 10^{-2}\text{ mm}$.

Numerical answer: enter the value.

[Step-by-step solution ► prepwisser.in/questions/iKbM1bDqRP](https://www.prepwisser.in/questions/iKbM1bDqRP)

Q31 JEE Main 2021 · 31 Aug · Shift 2

The diameter of a spherical bob is measured using a vernier callipers. 9 divisions of the main scale, in the vernier callipers, are equal to 10 divisions of vernier scale. One main scale division is 1 mm. The main scale reading is 10 mm and 8th division of vernier scale was found to coincide exactly with one of the main scale division. If the given vernier callipers has positive zero error of 0.04 cm, then the radius of the bob is _____ $\times 10^{-2}$ cm.

Numerical answer: enter the value.

[Step-by-step solution ► prepwiser.in/questions/FkuQlyF3LV](https://www.prepwiser.in/questions/FkuQlyF3LV)

Q32 JEE Main 2021 · 26 Aug · Shift 1

In a Screw Gauge, fifth division of the circular scale coincides with the reference line when the ratchet is closed. There are 50 divisions on the circular scale, and the main scale moves by 0.5 mm on a complete rotation. For a particular observation the reading on the main scale is 5 mm and the 20th division of the circular scale coincides with reference line. Calculate the true reading.

- (A) 5.00 mm (B) 5.25 mm
(C) 5.15 mm (D) 5.20 mm

[Step-by-step solution ► prepwiser.in/questions/vqCSE_vEKt](https://www.prepwiser.in/questions/vqCSE_vEKt)

Q33 JEE Main 2021 · 27 Jul · Shift 1

Assertion A : If in five complete rotations of the circular scale, the distance travelled on main scale of the screw gauge is 5 mm and there are 50 total divisions on circular scale, then least count is 0.001 cm.

Reason R :

$$\text{Least Count} = \frac{\text{Pitch}}{\text{Total divisions on circular scale}}$$

In the light of the above statements, choose the most appropriate answer from the options given below :

- (A) A is not correct but R is correct.
(B) Both A and R are correct and R is the correct explanation of A.
(C) A is correct but R is not correct.
(D) Both A and R are correct and R is NOT the correct explanation of A.

[Step-by-step solution ► prepwiser.in/questions/CXF_GIAm_q](https://www.prepwiser.in/questions/CXF_GIAm_q)

Q34 JEE Main 2021 · 17 Mar · Shift 1

The vernier scale used for measurement has a positive zero error of 0.2 mm. If while taking a measurement it was noted that '0' on the vernier scale lies between 8.5 cm and 8.6 cm, vernier coincidence is 6, then the correct value of measurement is _____ cm. (least count = 0.01 cm)

- (A) 8.58 cm (B) 8.54 cm
(C) 8.56 cm (D) 8.36 cm

[Step-by-step solution ► prepwiser.in/questions/Zm23Sj_JBY](https://www.prepwiser.in/questions/Zm23Sj_JBY)

Q35 JEE Main 2021 · 16 Mar · Shift 1

One main scale division of a vernier callipers is 'a' cm and n^{th} division of the vernier scale coincide with $(n - 1)^{\text{th}}$ division of the main scale. The least count of the callipers in mm is :

- (A) $\frac{10a}{n}$ (B) $\frac{10na}{(n-1)}$
(C) $\left(\frac{n-1}{10n}\right)a$ (D) $\frac{10a}{(n-1)}$

[Step-by-step solution ► prepwisser.in/questions/CyKrSfP2tZ](https://www.prepwisser.in/questions/CyKrSfP2tZ)

Q36 JEE Main 2021 · 25 Feb · Shift 1

The pitch of the screw gauge is 1 mm and there are 100 divisions on the circular scale. When nothing is put in between the jaws, the zero of the circular scale lies 8 divisions below the reference line. When a wire is placed between the jaws, the first linear scale division is clearly visible while 72^{nd} division on circular scale coincides with the reference line. The radius of the wire is :

- (A) 1.80 mm (B) 0.90 mm
(C) 0.82 mm (D) 1.64 mm

[Step-by-step solution ► prepwisser.in/questions/14z6jjhQNd](https://www.prepwisser.in/questions/14z6jjhQNd)

Q37 JEE Main 2020 · 6 Sep · Shift 2

A student measuring the diameter of a pencil of circular cross-section with the help of a vernier scale records the following four readings 5.50 mm, 5.55 mm, 5.45 mm, 5.65 mm. The average of these four readings is 5.5375 mm and the standard deviation of the data is 0.07395 mm. The average diameter of the pencil should therefore be recorded as :

- (A) (5.54 ± 0.07) mm (B) (5.5375 ± 0.0740) mm
(C) (5.5375 ± 0.0739) mm (D) (5.538 ± 0.074) mm

[Step-by-step solution ► prepwisser.in/questions/7WaEGv6n1f](https://www.prepwisser.in/questions/7WaEGv6n1f)

Q38 JEE Main 2020 · 6 Sep · Shift 1

A screw gauge has 50 divisions on its circular scale. The circular scale is 4 units ahead of the pitch scale marking, prior to use. Upon one complete rotation of the circular scale, a displacement of 0.5mm is noticed on the pitch scale. The nature of zero error involved and the least count of the screw gauge, are respectively :

- (A) Positive, 0.1 mm (B) Positive, $0.1 \mu\text{m}$
(C) Positive, $10 \mu\text{m}$ (D) Negative, $2 \mu\text{m}$

[Step-by-step solution ► prepwisser.in/questions/wOzGTT_FDp](https://www.prepwisser.in/questions/wOzGTT_FDp)

Q39 JEE Main 2020 · 3 Sep · Shift 1

Using screw gauge of pitch 0.1 cm and 50 divisions on its circular scale, the thickness of an object is measured. It should correctly be recorded as

- (A) 2.123 cm (B) 2.124 cm
(C) 2.125 cm (D) 2.121 cm

[Step-by-step solution ► prepwisser.in/questions/C7MagbGijn](https://www.prepwisser.in/questions/C7MagbGijn)

Q40 JEE Main 2020 · 2 Sep · Shift 1

The least count of the main scale of a vernier callipers is 1 mm. Its vernier scale is divided into 10 divisions and coincide with 9 divisions of the main scale. When jaws are touching each other, the 7th division of vernier scale coincides with a division of main scale and the zero of vernier scale is lying right side of the zero of main scale. When this vernier is used to measure length of a cylinder the zero of the vernier scale between 3.1 cm and 3.2 cm and 4th VSD coincides with a main scale division. The length of the cylinder is : (VSD is vernier scale division)

- (A) 3.21 cm (B) 2.99 cm
(C) 3.07 cm (D) 3.2 cm

[Step-by-step solution ► prepwiser.in/questions/Vtnwf1XZRm](https://www.prepwiser.in/questions/Vtnwf1XZRm)

Q41 JEE Main 2020 · 9 Jan · Shift 1

If the screw on a screw-gauge is given six rotations, it moves by 3 mm on the main scale. If there are 50 divisions on the circular scale the least count of the screw gauge is :

- (A) 0.001 mm (B) 0.01 cm
(C) 0.02 mm (D) 0.001 cm

[Step-by-step solution ► prepwiser.in/questions/M3h9Y9V-yP](https://www.prepwiser.in/questions/M3h9Y9V-yP)

p-n Junction Characteristics · 1 PYQs

Q42 JEE Main 2020 · 3 Sep · Shift 2

Which of the following will NOT be observed when a multimeter (operating in resistance measuring mode) probes connected across a component, are just reversed?

- (A) Multimeter shows NO deflection in both cases i.e. before and after reversing the probes if the chosen component is metal wire.
(B) Multimeter shows a deflection, accompanied by a splash of light out of connected component in one direction and NO deflection on reversing the probes if the chosen component is LED.
(C) Multimeter shows an equal deflection in both cases i.e. before and after reversing the probes if the chosen component is resistor.
(D) Multimeter shows NO deflection in both cases i.e. before and after reversing the probes if the chosen component is capacitor.

[Step-by-step solution ► prepwiser.in/questions/wykEcbVQCq](https://www.prepwiser.in/questions/wykEcbVQCq)

Answer key: Experimental Skills

Answers follow NTA's final answer keys. Typing errors are possible, so check doubtful answers against the official key. Spotted a mistake? [prepwisar.in/feedback](https://www.prepwisar.in/feedback) · Terms: [prepwisar.in/terms](https://www.prepwisar.in/terms)

Numbers match the question numbers above. For full working, open the solution link under each question.

1	C	2	A	3	32	4	41	5	A	6	A	7	35	8	B
9	B	10	C	11	D	12	B	13	D	14	D	15	B	16	B
17	A	18	A	19	B	20	B	21	A	22	220	23	C	24	412
25	C	26	B	27	A	28	180	29	5	30	5	31	52	32	C
33	A	34	B	35	A	36	C	37	A	38	C	39	B	40	C
41	D	42	D												

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