

# PHYSICS



## 2025 JAMB

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2020.

Examples of dielectric materials includes all EXCEPT

- A ☐ Polythene ebonite  
B ☐ Glass  
C ☐ Paraffin wax  
D ☒ Kirchhoff

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2020.

Which of these is designed to obtain different colour patterns

- A ☐ Sextant  
B ☒ Kaleidoscope  
C ☐ Periscope  
D ☐ Telescope

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2016.

A rainbow viewed through a blue sheet of glass will appear

- A ☐ Green  
B ☐ Colourless  
C ☐ Red  
D ☒ Blue

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2017.

Water is not used as a thermometric fluid because of

- A ☐ It wets glass  
B ☒ Anomalous expansion between  $0^{\circ}\text{C}$  and  $4^{\circ}\text{C}$   
C ☐ It is colourless  
D ☐ It boils below  $1000^{\circ}\text{C}$

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2021.

Which of the above is not a secondary cell

- A ☒ Leclanche cell  
B ☐ Lead acid accumulator  
C ☐ Cadmium  
D ☐ Nickel

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**2019.**

Which of the following is used in radioactive dating

- A ☐ Cobalt-90  
B ☐ Cobalt-60  
C ☐ Cobalt-10  
D ☒ Cobalt-12

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**2015.**

Which of these occurs in a transformer

- A ☐ Local action, hysteresis and energy gain  
B ☐ Distance between plates, area of the plates and temperature  
C ☒ Hysteresis, eddy current and stray load loss  
D ☐ Dissociation, hysteresis and expansion

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**2018.**

The electric iron uses the principle of

- A ☐ Self induction  
B ☒ Heating effect of current  
C ☐ Magnetic effect of current  
D ☐ Conduction of heat

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20180. A piece of chalk is broken into its smallest possible piece, the smallest possible piece is

- A ☐ Atom
- B ☐ Ion
- C ☐ Element
- D ☒ Molecule

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2020. When light travels from one medium to another which of these remains unchanged

- A ☒ Frequency
- B ☐ Wavelength
- C ☐ Velocity
- D ☐ None

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2020. Acceleration of a body moving with uniform velocity is

- A ☐ Constant
- B ☐ Maximum
- C ☒ Zero
- D ☐ Minimum

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**OFFICIAL JULIUS CEO OF EXAMKING (WhatsApp 08161581089)**

2016. State Kepler's first law

- A ☒ It States that the planets describe ellipse of the sun as one focus
- B ☐ It States that the planets describe ellipse of the moon as one focus
- C ☐ It States that the planets describe ellipse of the planets as one focus
- D ☐ It States that the planets describe ellipse of the sun as one force

**2017.** Which of the following option is not a scalar quantity

- A ☐ Dimension
- B ☐ Velocity
- C ☒ Length
- D ☐ Acceleration

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**2021.** State Newton's 3rd law

- A ☒ It states that in every action there is always an equal and opposite reaction
- B ☐ It states that in every reaction there is always an equal and opposite reaction
- C ☐ It states that in every action there is always an equal and opposite action
- D ☐ It states that in every reaction there is always an equal and opposite action

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**2019.** State Hooke's law

- A ☒ It states provided the elastic limit of an elastic material is not exceeded the extension  $e$ , is directly proportional to the applied force
- B ☐ It states provided the elastic limit of an elastic material is not exceeded the extension  $e$ , is directly proportional to the applied load
- C ☐ It states provided the elastic limit of an elastic material is not exceeded the extension  $e$ , is directly proportional to the applied agency
- D ☐ It states provided the elastic limit of an elastic material is not exceeded the extension  $e$ , is directly proportional to the applied material

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**2015.** State Newton's first law

- A ☒ It states that when a body is at rest it will remain in its state of rest or uniform motion until its acted upon by an external agency
- B ☐ It states that when a body is at rest it will remain in its state of rest or uniform motion until its acted upon by an external body
- C ☐ It states that when a body is at rest it will remain in its state of rest or uniform motion until its acted upon by an external force
- D ☐ It states that when a body is at rest it will remain in its state of rest or uniform motion until its acted upon by an external p.d

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**2018.** The mass of a solid is 5kg. If the force of attraction of the molecules on the solid is 40N. Calculate the velocity of the molecules if the radius is 2m

- A ☐ 7.5m/s
- B ☐ 8m/s
- C ☒ 4.00 m/s
- D ☐ 12.50 m/s

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**20180.** The velocity ratio of an inclined plane where angle of inclination in  $\theta$  is

- A ☐  $\sin\theta$
- B ☐  $\cos\theta$
- C ☐  $\tan\theta$
- D ☒  $\frac{1}{\sin\theta}$

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**OFFICIAL JULIUS CEO OF EXAMKING (WhatsApp 08161581089)**

**2020.** Calculate the time taken for a mango fruit that fall from the tree 20 m to the ground [ $g = 10 \text{ ms}^{-2}$ ]

- A ☐ 10s

- B ☐ 5s  
C ☐ 4s  
D ☒ 2s

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**2020.** What is the cost of running seven 40 W lamps and five 80 W lamps for 12 hours of the electrical energy cost N7.00kWh?

- A ☐ N80.00  
B ☐ N45.36  
C ☐ N65.00  
D ☒ N57.12

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**2016.** Calculate the angle of minimum deviation of a  $60^\circ$  prism of a refractive index  $[\sin^{-1}0.75 = 49^\circ]$

- A ☒  $38.00^\circ$   
B ☐  $19.47^\circ$   
C ☐  $16.25^\circ$   
D ☐  $49^\circ$

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**2017.** If silicon is doped with phosphorus, what type of semiconductor material will be formed?

- A ☐ Zener material  
B ☐ P-n junction  
C ☒ n-type  
D ☐ p-type

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**2021.** When two mirrors are placed at an angle of  $90^\circ$  to each other, how many images will be formed when an object is placed in front of the mirrors

- A ☐ 5
- B ☐ 4
- C ☒ 3
- D ☐ 2

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**2019.** The action of blotting paper on ink is due to

- A ☐ diffusion
- B ☐ osmosis
- C ☒ capillarity
- D ☐ surface tension

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**2015.** What is the speed of a body vibrating at 50 cyclic per second

- A ☒  $100\pi \text{ rad s}^{-1}$
- B ☐  $200\pi \text{ rad s}^{-1}$
- C ☐  $50\pi \text{ rad s}^{-1}$
- D ☐  $400\pi \text{ rad s}^{-1}$

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**OFFICIAL JULIUS CEO OF EXAMKING (WhatsApp 08161581089)**

**2018.** The instrument to measure the relative density of liquid is

- A ☐ thermometer
- B ☒ hydrometer
- C ☐ spring balance
- D ☐ beaker



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20180. It is known that a neutron exists in a light atomic nucleus  
Which of the following also exists in the nucleus?

- A ☐ An electron
- B ☐ A  $\beta$  - particle
- C ☐  $\beta$  - particle
- D ☒ proton

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2020. Which of the following is a semiconductor

- A ☐ copper
- B ☒ silicon
- C ☐ plastic
- D ☐ Iron

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2020. Which of the following is correct about an electric cell?

- A ☐ Primary cell produces a large current for a long time
- B ☐ Secondary cell has a very high internal resistance
- C ☐ Primary cell has a very low internal resistance
- D ☒ Secondary cell has a very low internal resistance

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2016. I. Refraction II. Interference III. Diffraction Which of the above  
properties are common to all waves?

- A ☐ II and III only
- B ☒ I, II and III
- C ☐ I and II only
- D ☐ I and III only

C ☐ I and II only  
D ☐ I and III only

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**2017.** I. Refraction II. Interference III. Diffraction Which of the above properties are common to all waves?

- A ☐ II and III only  
B ☒ I, II and III  
C ☐ I and II only  
D ☐ I and III only

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**2021.** How can energy loss be minimized through Eddy-current?

- A ☒ By using high resistance wire  
B ☐ By using insulated soft iron wires  
C ☐ By using low resistance wires  
D ☐ Bu using turns of wires

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**2019.** A string of length 5cm is extended by 0.04m when a load of 0.8kg is suspended at the end. How far will it extend if a force of 16N is applied? [ $g = 10\text{ms}^{-2}$ ]

- A ☐ 0.04m  
B ☐ 0.12m  
C ☐ 0.01m  
D ☒ 0.08m

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**OFFICIAL JULIUS CEO OF EXAMKING (WhatsApp 08161581089)**

**2015.** Determine the focal length of a thin converging lens if the power is 5.0 dioptres

- A ☐ 0.1 m
- B ☒ 0.2 m
- C ☐ 2.0 m
- D ☐ 2.5 m

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**2018.** Which of the following is a scalar quantity?

- A ☐ Tension
- B ☐ Weight
- C ☐ Impulse
- D ☒ Mass

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**20180.** A radio station broadcast at a frequency of 600KHZ. If the speed of light in air is  $3 \times 10^8 \text{ ms}^{-1}$ . Calculate the wavelength of the radio wave

- A ☐  $2.20 \times 10^3 \text{ m}$
- B ☒  $5.0 \times 10^2 \text{ m}$
- C ☐  $5.0 \times 10^5 \text{ m}$
- D ☐  $11.8 \times 10^{11} \text{ m}$

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**2020.** The instrument used to measure the pressure of a gas is

- A ☐ barometer
- B ☐ thermometer
- C ☐ hygrometer
- D ☒ manometer

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2020.

Which of the following operations can be used to convert an alternative current dynamo into a direct current dynamo

- A ☐ number of turns in the coil is increased
- B ☐ strength of the field magnet is increased
- C ☒ slip rings are replaced with split ring commutator
- D ☐ coil is wound on a soft iron armature

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2016.

When the r.m.s value of a source of electricity supply is given as 240v, it means that the peak value of the supply is

- A ☐ 240v
- B ☒ 340v
- C ☐ 480v
- D ☐ 57600v

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2017.

When two objects P and Q are supplied with the same quantity of heat, the temperature change in P is observed to be twice that of Q. The mass of P is half that of Q. The ratio of the specific heat capacity of P to Q is

- A ☐ 1:4
- B ☐ 4:1
- C ☒ 1:1
- D ☐ 2:1

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2021.

Calculate the light of the image formed by a pinhole camera of length 12cm used to photograph an object 60cm away from the hole and

70cm high

- A ☐ 10 cm
- B ☐ 16 cm
- C ☐ 5 cm
- D ☒ 14 cm

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2019.

A block and tackle pulley arrangement has 6 pulleys in which an effort of 50N supports a load of 200N, calculate the efficiency of the machine

- A ☐ 80.0%
- B ☐ 76.6%
- C ☒ 66.7%
- D ☐ 60.7%

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2015.

The S.I unit of moment of a force is

- A ☐ kgm
- B ☒  $\mu\text{m}$
- C ☐ Jm
- D ☐  $\mu\text{m}^{-1}$

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2018.

The thermal expansion of a solid is an advantage in

- A ☐ Balance wheel of a watch
- B ☐ Construction of steel rail lines
- C ☐ Construction of large steel bridges
- D ☒ Fitting of tyres on wheels

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20180. An element and its isotope only differ in the number of

- A ☐ protons
- B ☐ electrons
- C ☐ ions
- D ☒ neutrons

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