

हमारा विश्वास... हर एक विद्यार्थी है खास

**JEE  
MAIN  
Sept.  
2020**

**QUESTION PAPER WITH SOLUTION**

**PHYSICS \_ 4 Sep. \_ SHIFT - 1**



**MOTION™**

H.O. : 394, Rajeev Gandhi Nagar, Kota  
www.motion.ac.in | ✉: info@motion.ac.in

हमारा विश्वास... हर एक विद्यार्थी है खास

- Q.1** Starting from the origin at time  $t = 0$ , with initial velocity  $5\hat{j}\text{ms}^{-1}$ , a particle moves in the x-y plane with a constant acceleration of  $(10\hat{i} + 4\hat{j})\text{ms}^{-2}$ . At time  $t$ , its coordinates are  $(20\text{ m}, y_0\text{ m})$ . The values of  $t$  and  $y_0$  are, respectively:  
 (1) 5s and 25 m      (2) 2s and 18 m      (3) 2s and 24 m      (4) 4s and 52 m

**Sol. 2**

$$y = u_y t + \frac{1}{2} a_y t^2$$

$$y = 5t + \frac{1}{2} (4) t^2$$

$$y = 5t + 2t^2$$

$$\text{and } x = 0 + \frac{1}{2} (10) (t^2) = 20$$

$$t = 2\text{ s}$$

$$\Rightarrow y = 10 + 8 = 18\text{ m}$$

- Q.2** A small bar magnet placed with its axis at  $30^\circ$  with an external field of 0.06 T experiences a torque of 0.018 Nm. The minimum work required to rotate it from its stable to unstable equilibrium position is:

- (1)  $7.2 \times 10^{-2}\text{ J}$       (2)  $6.4 \times 10^{-2}\text{ J}$       (3)  $9.2 \times 10^{-3}\text{ J}$       (4)  $11.7 \times 10^{-3}\text{ J}$

**Sol. 1**

$$\tau = MB \sin 30^\circ$$

$$0.018 = MB \left(\frac{1}{2}\right)$$

$$MB = 0.036$$

$$w = \Delta U = 2MB = 0.072\text{ J}$$

- Q.3** Choose the correct option relating wave lengths of different parts of electromagnetic wave spectrum:

- (1)  $\lambda_{\text{radio waves}} > \lambda_{\text{micro waves}} > \lambda_{\text{visible}} > \lambda_{\text{x-rays}}$       (2)  $\lambda_{\text{visible}} > \lambda_{\text{x-rays}} > \lambda_{\text{radio waves}} > \lambda_{\text{micro waves}}$   
 (3)  $\lambda_{\text{visible}} < \lambda_{\text{micro waves}} < \lambda_{\text{radio waves}} < \lambda_{\text{x-rays}}$       (4)  $\lambda_{\text{x-rays}} < \lambda_{\text{micro waves}} < \lambda_{\text{radio waves}} < \lambda_{\text{visible}}$

**Sol. 1**

By property of electromagnetic wave spectrum.

- Q.4** On the x-axis and at a distance  $x$  from the origin, the gravitational field due a mass distribution is

given by  $\frac{Ax}{(x^2 + a^2)^{3/2}}$  in the x-direction. The magnitude of gravitational potential on the x-axis at a distance  $x$ , taking its value to be zero at infinity, is:

- (1)  $A(x^2 + a^2)^{3/2}$       (2)  $\frac{A}{(x^2 + a^2)^{1/2}}$       (3)  $A(x^2 + a^2)^{1/2}$       (4)  $\frac{A}{(x^2 + a^2)^{3/2}}$

**CRASH COURSE**  
**FOR JEE ADVANCED 2020**

FREE Online Lectures Available on  YouTube

Go Premium at ₹ 1100

- ◆ Doubt Support
- ◆ Advanced Level Test Access
- ◆ Live Test Paper Discussion
- ◆ Final Revision Exercises

Start Date: **07 Sept. 2020**

Sol. 2

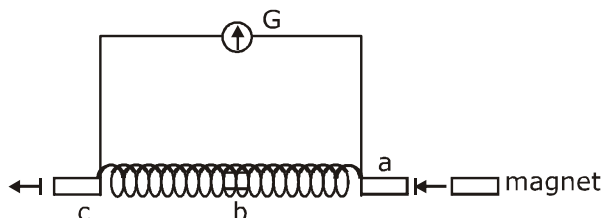
$$E_x = \frac{Ax}{(x^2 + a^2)^{3/2}}$$

$$\frac{-dv}{dx} = \frac{Ax}{(x^2 + a^2)^{3/2}}$$

$$\int_0^v dv = -\int_{\infty}^x \frac{Ax}{(x^2 + a^2)^{3/2}} dx$$

$$V = \frac{A}{(x^2 + a^2)^{1/2}}$$

**Q.5** A small bar magnet is moved through a coil at constant speed from one end to the other. Which of the following series of observations will be seen on the galvanometer G attached across the coil?



Three positions shown describe: (a) the magnet's entry (b) magnet is completely inside and (c) magnet's exit.

	(a)	(b)	(c)
(1)			
	(a)	(b)	(c)
(2)			
	(a)	(b)	(c)
(3)			
	(a)	(b)	(c)
(4)			

**CRASH COURSE**  
FOR JEE ADVANCED 2020

FREE Online Lectures Available on YouTube

Go Premium at ₹ 1100

◆ Doubt Support ◆ Advanced Level Test Access  
◆ Live Test Paper Discussion ◆ Final Revision Exercises

Start Date: **07 Sept. 2020**

हमारा विश्वास... हर एक विद्यार्थी है खास

**Sol. 1**

Let  $\boxed{N \ S}$

→ When bar magnet enter

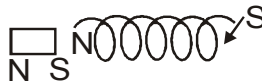


→ When completely inside



$i = 0$

→ when exit



**Q.6** A battery of 3.0V is connected to a resistor dissipating 0.5 W of power. If the terminal voltage of the battery is 2.5V, the power dissipated within the internal resistance is:

- (1) 0.072 W      (2) 0.10 W      (3) 0.125 W      (4) 0.50 W

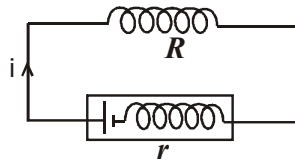
**Sol. 2**

$$P_0 = 0.5 \text{ w}$$

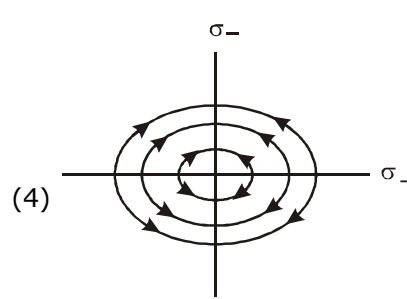
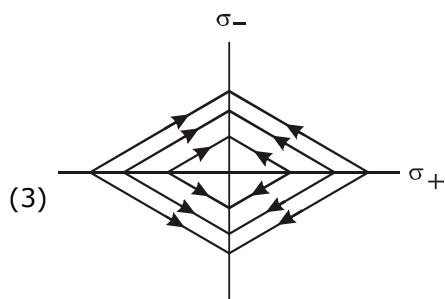
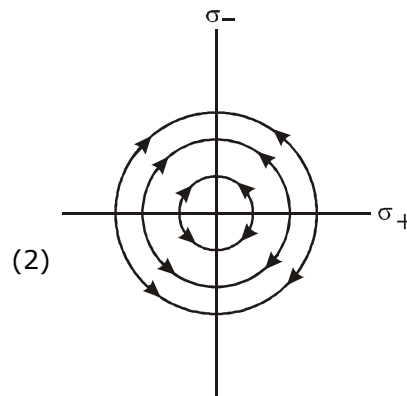
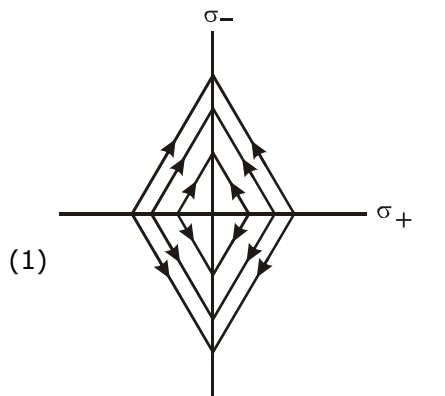
$$i \cdot (2.5) = 0.5$$

$$i = 1/5 \text{ A}$$

$$P_r = \left(\frac{1}{5}\right)(0.5) = 0.1 \text{ W}$$



**Q.7** Two charged thin infinite plane sheets of uniform surface charge density  $\sigma_+$  and  $\sigma_-$ , where  $|\sigma_+| > |\sigma_-|$ , intersect at right angle. Which of the following best represents the electric field lines for this system:



**CRASH COURSE**  
FOR JEE ADVANCED 2020

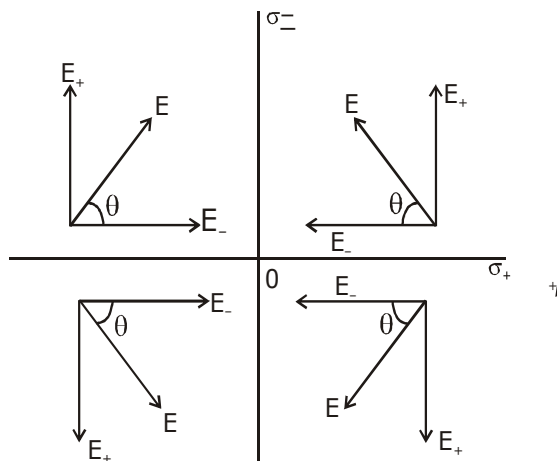
FREE Online Lectures Available on YouTube

Go Premium at ₹ 1100

- ◆ Doubt Support ◆ Advanced Level Test Access
- ◆ Live Test Paper Discussion ◆ Final Revision Exercises

Start Date: **07 Sept. 2020**

Sol. 1



$$|\vec{E}_+| > |\vec{E}_-|$$

$$\theta > 45^\circ$$

**Q.8** A air bubble of radius 1 cm in water has an upward acceleration  $9.8 \text{ cm s}^{-2}$ . The density of water is  $1 \text{ gm cm}^{-3}$  and water offers negligible drag force on the bubble. The mass of the bubble is ( $g = 980 \text{ cm/s}^2$ ).

- (1) 1.52 gm                      (2) 4.51 gm                      (3) 3.15 gm                      (4) 4.15 gm

Sol. 4



$$F_b - mg = ma \quad \Rightarrow \quad m = \frac{F_b}{g + a}$$

$$m = \frac{V \cdot \rho_w g}{g + a}$$

$$m = \frac{(4/3)\pi r^3 \cdot \rho_w \cdot g}{g + a} = 4.15 \text{ gm}$$

**CRASH COURSE**  
FOR JEE ADVANCED 2020

FREE Online Lectures Available on YouTube

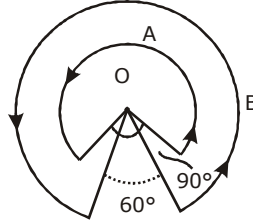
Go Premium at ₹ 1100

- ◆ Doubt Support ◆ Advanced Level Test Access
- ◆ Live Test Paper Discussion ◆ Final Revision Exercises

Start Date: **07 Sept. 2020**

हमारा विश्वास... हर एक विद्यार्थी है खास

- Q.9** A wire A, bent in the shape of an arc of a circle, carrying a current of 2A and having radius 2 cm and another wire B, also bent in the shape of arc of a circle, carrying a current of 3 A and having radius of 4 cm, are placed as shown in the figure. The ratio of the magnetic field due to the wires A and B at the common centre O is:



- Sol.** (1) 2 : 5                      (2) 6 : 5                      (3) 6 : 4                      (4) 4 : 6

$$B_A = \frac{\mu(2)\left(\frac{3\pi}{2}\right)}{2(a)(2\pi)} = \frac{3\mu}{4a}$$

$$B_B = \frac{\mu(3)\left(\frac{5\pi}{3}\right)}{2(2a)(2\pi)} = \frac{5\mu}{8a}$$

$$\frac{B_A}{B_B} = \frac{3\mu}{4a} \times \frac{8a}{5\mu} = 6 : 5$$

- Q.10** Particle A of mass  $m_A = \frac{m}{2}$  moving along the x-axis with velocity  $v_0$  collides elastically with another particle B at rest having mass  $m_B = \frac{m}{3}$ . If both particles move along the x-axis after the collision, the change  $\Delta\lambda$  in de-Broglie wavelength of particle A, in terms of its de-Broglie wavelength ( $\lambda_0$ ) before collision is:

- (1)  $\Delta\lambda = \frac{5}{2}\lambda_0$                       (2)  $\Delta\lambda = 2\lambda_0$                       (3)  $\Delta\lambda = 4\lambda_0$                       (4)  $\Delta\lambda = \frac{3}{2}\lambda_0$

**Sol. 3**

$$V_1 = \frac{m_1 - m_2}{m_1 + m_2} \cdot u_1 + \frac{2m_2}{m_1 + m_2} \cdot u_2$$

$$V_1 = \frac{\frac{m}{2} - m/3}{\frac{m}{2} + m/3} V_0 = V_0/5$$

$$\lambda' = \frac{h}{\frac{m}{2} \cdot \frac{V_0}{5}} = 5 \cdot \frac{h}{\frac{m}{2} \cdot V_0} = 5\lambda_0$$

$$\Delta\lambda = 4\lambda_0$$

**CRASH COURSE**  
FOR JEE ADVANCED 2020

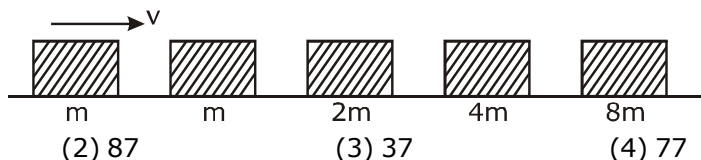
FREE Online Lectures Available on [YouTube](#)

Go Premium at ₹ 1100

◆ Doubt Support ◆ Advanced Level Test Access  
◆ Live Test Paper Discussion ◆ Final Revision Exercises

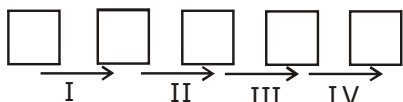
Start Date: **07 Sept. 2020**

**Q.11** Blocks of masses  $m$ ,  $2m$ ,  $4m$  and  $8m$  are arranged in a line on a frictionless floor. Another block of mass  $m$ , moving with speed  $v$  along the same line (see figure) collides with mass  $m$  in perfectly inelastic manner. All the subsequent collisions are also perfectly inelastic. By the time the last block of mass  $8m$  starts moving the total energy loss is  $p\%$  of the original energy. Value of 'p' is close to:



- (1) 94                      (2) 87                      (3) 37                      (4) 77

**Sol. 1**

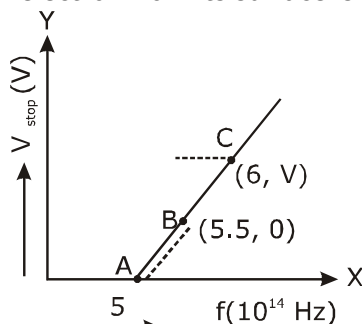


There will be total 4 collisions in each collision K.E. decreasing by 50%

$$E_f = \frac{1}{2^4} E_i = \frac{E_i}{16} = 6.25\%$$

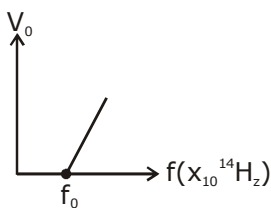
i.e. 93.75 % loss

**Q.12** Given figure shows few data points in a phot electric effect experiment for a certain metal. The minimum energy for ejection of electron from its surface is: (Plancks constant  $h = 6.62 \times 10^{-34} \text{J.s}$ )



- (1) 2.10 eV                      (2) 2.27 eV                      (3) 2.59 eV                      (4) 1.93 eV

**Sol. 2**



$$\begin{aligned} \phi &= hf_0 = 6.62 \times 10^{-34} \times 5.5 \times 10^{14} \\ &= 36.41 \times 10^{-20} \text{J} = 2.27 \text{ eV} \end{aligned}$$

हमारा विश्वास... हर एक विद्यार्थी है खास

**Q.13** The specific heat of water =  $4200 \text{ J kg}^{-1}\text{K}^{-1}$  and the latent heat of ice =  $3.4 \times 10^5 \text{ J kg}^{-1}$ . 100 grams of ice at  $0^\circ\text{C}$  is placed in 200 g of water at  $25^\circ\text{C}$ . The amount of ice that will melt as the temperature of water reaches  $0^\circ\text{C}$  is close to (in grams):

- (1) 63.8                      (2) 64.6                      (3) 61.7                      (4) 69.3

**Sol. 3**

Heat loss by water

$$Q = m_w s \Delta\theta$$

$$= \left( \frac{200}{1000} \right) \cdot (4200) (25) = 21000 \text{ J}$$

and  $\Delta m_i L = 21000$

$$\Delta m_i = \frac{21000}{3.4 \times 10^5} \times 10^3 \text{ gm} = 61.7 \text{ grams}$$

**Q.14** A beam of plane polarised light of large cross-sectional area and uniform intensity of  $3.3 \text{ Wm}^{-2}$  falls normally on a polariser (cross sectional area  $3 \times 10^{-4} \text{ m}^2$ ) which rotates about its axis with an angular speed of  $31.4 \text{ rad/s}$ . The energy of light passing through the polariser per revolution, is close to:

- (1)  $1.0 \times 10^{-4} \text{ J}$             (2)  $1.0 \times 10^{-5} \text{ J}$             (3)  $5.0 \times 10^{-4} \text{ J}$             (4)  $1.5 \times 10^{-4} \text{ J}$

**Sol. 1**

$$p = p_0 \cos^2 \omega t$$

$$E_{\text{avg}} = \langle p \rangle \cdot T = \frac{p_0}{2} T$$

$$E_{\text{avg}} = \langle P \rangle \cdot T = \frac{p_0}{2} \cdot \frac{2\pi}{\omega} = \frac{10^{-3} \times 3.14}{31.4} = 10^{-4} \text{ J}$$

**Q.15** For a transverse wave travelling along a straight line, the distance between two peaks (crests) is 5m, while the distance between one crest and one trough is 1.5m. The possible wavelengths (in m) of the waves are:

- (1) 1, 3, 5, .....            (2) 1, 2, 3, .....            (3)  $\frac{1}{2}, \frac{1}{4}, \frac{1}{6}, \dots$             (4)  $\frac{1}{1}, \frac{1}{3}, \frac{1}{5}, \dots$

**Sol. 4**

$$1.5 = (2n_1 + 1) \lambda / 2 \quad \dots(1)$$

$$5 = n_2 \lambda \quad \dots(2)$$

$n_1$  &  $n_2$  are integer

$$n_1 = 1, n_2 = 5$$

$$n_1 = 2, n_2 \text{ is not integer}$$

$$n_1 = 3, n_2 \text{ is not integer}$$

$$n_1 = 4, n_2 = 15, \quad \lambda = 1/3$$

**CRASH COURSE**  
FOR JEE ADVANCED 2020

FREE Online Lectures Available on YouTube

Go Premium at ₹ 1100

- ◆ Doubt Support ◆ Advanced Level Test Access
- ◆ Live Test Paper Discussion ◆ Final Revision Exercises

Start Date: **07 Sept. 2020**



**Q.16** Match the  $C_p/C_v$  ratio for ideal gases with different type of molecules:

Molecule Type	$C_p/C_v$
(A) Monoatomic	(I) 7/5
(B) Diatomic rigid molecules	(II) 9/7
(C) Diatomic non-rigid molecules	(III) 4/3
(D) Triatomic rigid molecules	(IV) 5/3

(1) (A)-(III), (B)-(IV), (C)-(II), (D)-(I)  
 (2) (A)-(IV), (B)-(II), (C)-(I), (D)-(III)  
 (3) (A)-(II), (B)-(III), (C)-(I), (D)-(IV)  
 (4) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

**Sol. 4**

$$\gamma = C_p/C_v$$

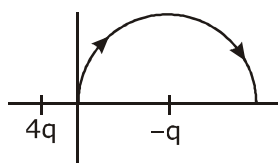
$$\gamma_A = 1 + \frac{2}{3} = 5/3$$

$$\gamma_B = 1 + \frac{2}{5} = 7/5$$

$$\gamma_C = 1 + \frac{2}{7} = 9/7$$

$$\gamma_D = 1 + \frac{2}{6} = 4/3$$

**Q.17** A two point charges  $4q$  and  $-q$  are fixed on the x-axis at  $x = -\frac{d}{2}$  and  $x = \frac{d}{2}$ , respectively. If a third point charge ' $q$ ' is taken from the origin to  $x = d$  along the semicircle as shown in the figure, the energy of the charge will:



(1) decrease by  $\frac{q^2}{4\pi \epsilon_0 d}$

(2) decrease by  $\frac{4q^2}{3\pi \epsilon_0 d}$

(3) increase by  $\frac{3q^2}{4\pi \epsilon_0 d}$

(4) increase by  $\frac{2q^2}{3\pi \epsilon_0 d}$

**CRASH COURSE**  
**FOR JEE ADVANCED 2020**

FREE Online Lectures Available on **YouTube**

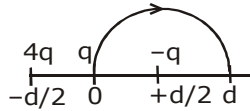
Go Premium at ₹ 1100

◆ Doubt Support ◆ Advanced Level Test Access  
 ◆ Live Test Paper Discussion ◆ Final Revision Exercises

Start Date: **07 Sept. 2020**

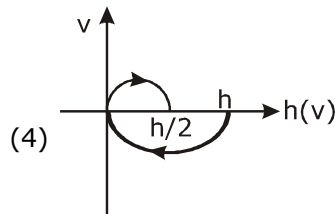
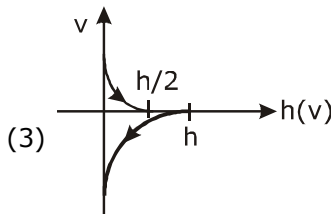
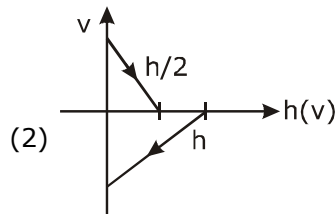
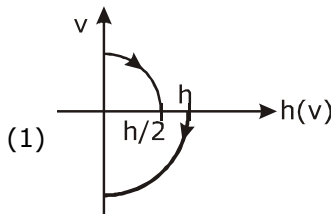
हमारा विश्वास... हर एक विद्यार्थी है खास

**Sol. 2**



$$\begin{aligned} \Delta U &= \frac{1}{4\pi\epsilon_0} \cdot \frac{4q \cdot q}{(3d/2)} - \frac{1}{4\pi\epsilon_0} \cdot \frac{4q \cdot q}{(d/2)} \\ &= \frac{4q^2}{4\pi\epsilon_0} \left( \frac{2}{d} \right) \left( -\frac{2}{3} \right) \\ &= (-) \frac{4q^2}{3\pi\epsilon_0 \cdot d} \\ &= \text{decrease by } (-) \end{aligned}$$

**Q.18** A Tennis ball is released from a height  $h$  and after freely falling on a wooden floor it rebounds and reaches height  $\frac{h}{2}$ . The velocity versus height of the ball during its motion may be represented graphically by: (graph are drawn schematically and on not to scale)



**Sol. 1**

→  $v, h$  curve will be parabolic

→ downward velocity is negative and upward is positive

→ when ball is coming down graph will be in IV quadrant and when going up graph will be in I quadrant

**Q.19** Dimensional formula for thermal conductivity is (here  $K$  denotes the temperature):

(1)  $MLT^{-3}K^{-1}$

(2)  $MLT^{-2}K^{-2}$

(3)  $MLT^{-2}K$

(4)  $MLT^{-3}K$

**Sol. 1**

$$\frac{dQ}{dt} = \frac{Kl\Delta T}{A}$$

**CRASH COURSE**  
FOR JEE ADVANCED 2020

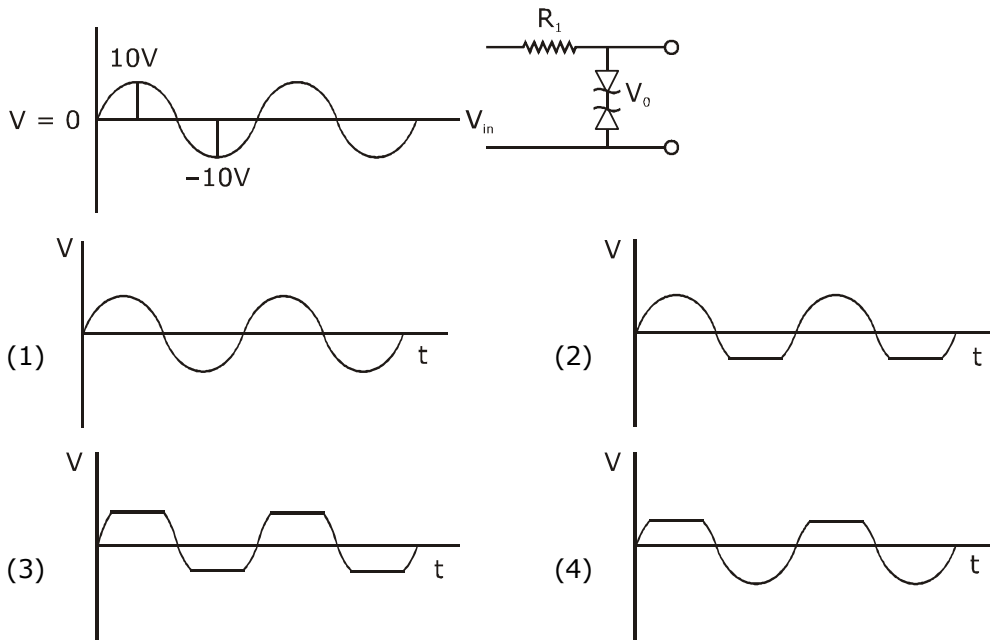
FREE Online Lectures Available on YouTube

Go Premium at ₹ 1100

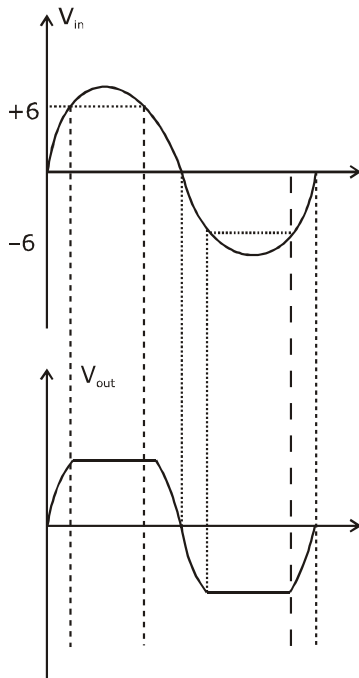
◆ Doubt Support ◆ Advanced Level Test Access  
◆ Live Test Paper Discussion ◆ Final Revision Exercises

Start Date: **07 Sept. 2020**

**Q.20** Take the breakdown voltage of the zener diode used in the given circuit as 6V. For the input voltage shown in figure below, the time variation of the output voltage is : (Graphs drawn are schematic and not to scale)



**Sol. 3**



**CRASH COURSE**  
FOR JEE ADVANCED 2020

FREE Online Lectures Available on **YouTube**

Go Premium at ₹ 1100

◆ Doubt Support ◆ Advanced Level Test Access  
◆ Live Test Paper Discussion ◆ Final Revision Exercises

Start Date: **07 Sept. 2020**

हमारा विश्वास... हर एक विद्यार्थी है खास

**Q.21** In the line spectra of hydrogen atoms, difference between the largest and the shortest wavelengths of the Lyman series is  $304\text{\AA}$ . The corresponding difference for the Paschen series in  $\text{\AA}$  is :

**Sol.** **10553**

$$\frac{1}{R} = 912 \text{\AA}$$

in Paschen series

$$\frac{1}{\lambda_s} = R \left( \frac{1}{3^2} \right) = \frac{R}{9}$$

$$\frac{1}{\lambda_l} = R \left( \frac{1}{3^2} - \frac{1}{4^2} \right) = \frac{7R}{144}$$

$$(\lambda_l - \lambda_s) = \left( \frac{144}{7} - 9 \right) R = 10553 \text{\AA}$$

**Q.22** A closed vessel contains 0.1 mole of a monoatomic ideal gas at 200 K. If 0.05 mole of the same gas at 400 K is added to it, the final equilibrium temperature (in K) of the gas in the vessel will be close to \_\_\_\_\_.

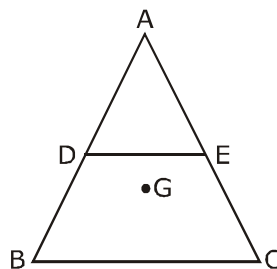
**Sol.** **266**

$$(0.1) \left( \frac{3}{2} R \right) (T - 200) = (0.05) \left( \frac{3}{2} R \right) (400 - T)$$

$$T = 266.6 \text{ K}$$

**Q.23** ABC is a plane lamina of the shape of an equilateral triangle. D, E are mid points of AB, AC and G is the centroid of the lamina. Moment of inertia of the lamina about an axis passing through G and perpendicular to the plane ABC is  $I_0$ . If part ADE is removed, the moment of inertia of the remaining

part about the same axis is  $\frac{NI_0}{16}$  where N is an integer. Value of N is \_\_\_\_\_.



**CRASH COURSE**  
FOR JEE ADVANCED 2020

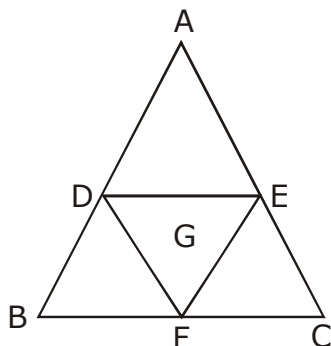
FREE Online Lectures Available on YouTube

Go Premium at ₹ 1100

◆ Doubt Support ◆ Advanced Level Test Access  
◆ Live Test Paper Discussion ◆ Final Revision Exercises

Start Date: **07 Sept. 2020**

Sol. 11



Let  $I_0 = kmc^2$

$$I_{DEF} = K \left( \frac{m}{\ell} \right) \left( \frac{\ell}{2} \right)^2 = \left( \frac{I_0}{16} \right)$$

and  $I_{ADE} = I_{BDE} = I_{EFC} = I$

$$3I = I_0 - \frac{I_0}{16} = \frac{15I_0}{16}$$

$$\Rightarrow I = \frac{5I_0}{16}$$

$$I_{\text{remaining}} = 2I + \frac{I_0}{16} = \frac{11I_0}{16}$$

**Q.24** In a compound microscope, the magnified virtual image is formed at a distance of 25 cm from the eye-piece. The focal length of its objective lens is 1 cm. If the magnification is 100 and the tube length of the microscope is 20 cm, then the focal length of the eye-piece lens (in cm) is \_\_\_\_\_.

Sol. **6.25**

$L = 20, f_o = 1\text{cm}, M = 100$

$$M = \frac{v_o}{u_o} \left( 1 + \frac{D}{f_e} \right)$$

$$M = \frac{L}{f_o} \left( 1 + \frac{D}{f_e} \right) \quad [v_o \approx L, u_o \approx f_o]$$

on solving we get  
 $f_e = 6.25 \text{ cm}$

**CRASH COURSE**  
**FOR JEE ADVANCED 2020**

FREE Online Lectures Available on YouTube

Go Premium at ₹ 1100

◆ Doubt Support ◆ Advanced Level Test Access  
 ◆ Live Test Paper Discussion ◆ Final Revision Exercises

Start Date: **07 Sept. 2020**

हमारा विश्वास... हर एक विद्यार्थी है खास

- Q.25** A circular disc of mass  $M$  and radius  $R$  is rotating about its axis with angular speed  $\omega_1$ . If another stationary disc having radius  $\frac{R}{2}$  and same mass  $M$  is dropped co-axially on to the rotating disc. Gradually both discs attain constant angular speed  $\omega_2$  the energy lost in the process is  $p\%$  of the initial energy. Value of  $p$  is \_\_\_\_\_.

**Sol. 20**

$$I_f \omega_f = I_i \omega_i$$

$$I_i = \frac{MR^2}{2}$$

$$I_f = \frac{MR^2}{2} + \frac{M(R/2)^2}{2}$$

$$= \frac{5}{4} \cdot \frac{MR^2}{2}$$

$$\left[ \frac{MR^2}{2} + \frac{M}{2} \left( \frac{R}{2} \right)^2 \right] \omega' = \left( \frac{MR^2}{2} \right) \omega$$

$$\left[ \frac{MR^2}{2} \cdot \left( \frac{5}{4} \right) \right] \omega' = \frac{MR^2}{2} \omega$$

$$\omega' = \frac{4}{5} \omega$$

$$\text{loss of K.E.} = \frac{\text{Loss}}{K_i} \times 100 = \frac{\omega^2 - \omega'^2 (5/4)}{\omega^2} \times 100$$

$$\frac{\omega^2 - \frac{16}{25} \omega^2 \left( \frac{5}{4} \right)}{\omega^2} = \left( 1 - \frac{80}{100} \right) \times 100$$

$$= 20\%$$

**CRASH COURSE**  
FOR JEE ADVANCED 2020

FREE Online Lectures Available on  YouTube

Go Premium at ₹ 1100

◆ Doubt Support ◆ Advanced Level Test Access  
◆ Live Test Paper Discussion ◆ Final Revision Exercises

Start Date: **07 Sept. 2020**

जब इन्होंने पूरा किया अपना सपना  
तो आप भी पा सकते है लक्ष्य अपना

Admission  
**OPEN**

## JEE MAIN RESULT 2019



**Nitin Gupta**

Marks  
**335**  
13th (2019)

Marks  
**149**  
12th (2018)



**Shiv Modi**

Marks  
**318**  
13th (2019)

Marks  
**153**  
12th (2018)



**Ritik Bansal**

Marks  
**308**  
13th (2019)

Marks  
**218**  
12th (2018)



**Shubham Kumar**

Marks  
**300**  
13th (2019)

Marks  
**153**  
12th (2018)

### KOTA'S PIONEER IN DIGITAL EDUCATION

**1,95,00,000+** viewers | **72,67,900+** viewing hours | **2,11,000+** Subscribers

SERVICES	SILVER	GOLD	PLATINUM
Classroom Lectures (VOD)			
Live interaction	NA		
Doubt Support	NA		
Academic & Technical Support	NA		
Complete access to all content	NA		
Classroom Study Material	NA		
Exercise Sheets	NA		
Recorded Video Solutions	NA		
Online Test Series	NA		
Revision Material	NA		
<b>Upgrade to Regular Classroom program</b>	<b>Chargeable</b>	<b>Chargeable</b>	<b>Free</b>
Physical Classroom	NA	NA	
Computer Based Test	NA	NA	
Student Performance Report	NA	NA	
Workshop & Camp	NA	NA	
Motion Solution Lab- Supervised learning and instant doubt clearance	NA	NA	
Personalised guidance and mentoring	NA	NA	

### FEE STRUCTURE

CLASS	SILVER	GOLD	PLATINUM
7th/8th	FREE	₹ 12,000	₹ 35,000
9th/10th	FREE	₹ 15,000	₹ 40,000
11th	FREE	₹ 29,999	₹ 49,999
12th	FREE	₹ 39,999	₹ 54,999
12th Pass	FREE	₹ 39,999	₹ 59,999

+ Student Kit will be provided at extra cost to Platinum Student.

- \* **SILVER (Trial)** Only valid 7 DAYS or First 10 Hour's Lectures.
- \*\* **GOLD (Online)** can be converted to regular classroom (Any MOTION Center) by paying difference amount after lockdown.
- \*\*\* **PLATINUM (Online + Regular)** can be converted to regular classroom (Any MOTION Center) without any cost after lockdown.

New Batch Starting from :  
**16 & 23 September 2020**

**Zero Cost EMI Available**

**MOTION™**

H.O. : 394, Rajeev Gandhi Nagar, Kota  
www.motion.ac.in | ✉ : info@motion.ac.in