

**PHYSICS [Booklet No. 1290505]**Category : I

1. The r.m.s. speed ... be  $\sqrt{3}v$  is [Ans.846°C]
2. The equation of ... a and b are respectively  
[Ans.ML<sup>8</sup>T<sup>-2</sup>&L<sup>3/2</sup>]
3. A frictionless ... process is [Ans.12 kJ]
4. A NOR gate ... respectively are [Ans.1 & 1]
5. Two soap bubbles ... will result :  
[Ans.the radius of the...will increase]
6. The velocity ... this 10s? [Ans. 95]
7. The ionization ... atom is [Ans.-6.8 eV]
8. In the electrical ... resistor is [Ans.0.5 A]
9. A current of ... respectively are  
[Ans.2 N, along positive z-axis]
10.  $S_1$  and  $S_2$  ... be max. [Ans.(4 $\lambda$ ,0):(5 $\lambda$ /4,0)]
11. Four small ... rotation is [Ans.2ma<sup>2</sup>]
12. The de Broglie ...  $6.6 \times 10^{-34}$  J s)  
[Ans.8.25 $\times 10^{-11}$ m]
13. The number ... atoms will be [Ans.Tln5/ln2]
14. A mass M ... two parts is [Ans.1:1]
15. A bullet...process will be [Ans.mMv<sup>2</sup>/2(M+m)]
16. A planet ... time is [Ans.angular momentum]
17. A particle of ... ratio T/S  
[Ans.remains constant with time t]
18. The specific...energy units is  
[Ans.(65/4) $\times 10^4$ Dm]
19. The least distance...of lens is [Ans.+(20/3)D]
20. A particle of ... will then be [Ans.Q/4 $\pi\epsilon_0$ ED]
21. At two different...magnetic field is [Ans. $\sqrt{3}:\sqrt{2}$ ]
22. An equilateral ... triangle is [Ans. Zero]
23. A particle is ...velocity is [Ans.2v sin( $\theta$ /2)]
24. A capacitor of...C is given by [Ans.C<sub>0</sub>(V<sub>0</sub>-V)/V]
25. As shown in the figure ... (given  $1/4\pi\epsilon_0 = 9 \times 10^9$  m/F)  
[Ans. Zero]
26. An electric cell of ... wire will be [Ans.v<sub>d</sub>/2]
27. A bar magnet ...of 30°, will be [Ans.30 N m]
28. An ideal mono-atomic...gas is [Ans. 3/5]
29. Two glass prisms ...of P<sub>2</sub> will be [Ans.1.72]
30. Water is flowing ... is [density of water =  $\rho$ ]  
[Ans.  $\sqrt{v^2 + \frac{\rho}{\rho}}$  ]
31. A wire of ... and second wire is [Ans.1:1]
32. Two spheres ... terminal velocities is  
[Ans.1:9]
33. An alpha ... the closest to [Ans.27.9 MeV]
34. The equivalent resistance ... the figure is  
[Ans.r]

35. An object placed ...the lens is [Ans.12 cm]  
 36. A travelling ... two points is [Ans.10 cm]  
 37. A shell...third fragment will [Ans.be at rest]  
 38. A particle moves...is zero, is [Ans.2.5 ms<sup>-1</sup>]  
 39. The fundamental...their lengths is [Ans.1:4]  
 40. An alternating ... respectively are,  
 [Ans.10√2A & 50Hz]  
 41. Four identical ... P and Q ? [Ans.2aε<sub>0</sub>/d]  
 42. A particle is ... remains constant ?  
 [Ans.rate of change of kinetic energy]  
 43. In an n-p-n transistor  
 [Ans. the emitter has...of the collector]  
 44. Two vectors...represents  $\vec{c}$ ? [Ans.  $7/3(\hat{i} + 2\hat{j} + 2\hat{k})$ ]  
 45. A car ... approaching bus is [Ans. 4 ms<sup>-1</sup>]  
Category : II  
 46. A small mass...rotation is [Ans.ω<sup>2</sup>L/ω<sub>0</sub><sup>2</sup>-ω<sup>2</sup>]  
 47. A sphere...(ε<sub>0</sub>=permittivity...) [Ans.κR<sup>2</sup>/4ε<sub>0</sub>]  
 48. A body is...(given g=10 ms<sup>-2</sup>) [Ans.5m & 6m]  
 49. A cell of ... of the cell is  
 [Ans.√R<sub>1</sub>√R<sub>2</sub>(2√R<sub>2</sub>-√R<sub>1</sub>)/(√R<sub>2</sub>-2√R<sub>1</sub>)]  
 50. A magnetic...t=0s to t = 2s is [Ans.20πr<sup>2</sup>/R]  
 51. Two simple...respectively [Ans.√3/√2 & π/12]  
 52. A cylindrical...ρ<sub>1</sub>/ρ<sub>2</sub> will be [Ans.(1-x<sub>2</sub>)/(x<sub>1</sub>-x<sub>2</sub>)]  
 53. A particle..(ε<sub>0</sub>=permittivity..) [Ans.2√ $\frac{\pi^3 M \epsilon_0 d^3}{Qq}$ ]
54. The stopping ... case is [Ans.v<sub>1</sub>+e/h(V<sub>2</sub>-V<sub>1</sub>)]  
 55. 3 moles of ... the mixture will be [Ans.11/7]  
Category : III  
 56. An electron...are correct? [Ans.The magnetic moment...of m;The angular...of electron]  
 57. A block of...(given g=10 ms<sup>-2</sup>) [Ans.The tension...is F;The tension...3N;The work...is 10J]  
 58. If **E** and **B** are ... magnitude v are  
 [Ans.E=vB; E≠0, B≠0]  
 59. A bar of...to gravity is **g**. [Ans.This is...an integer;The total distance...ω<sup>2</sup>;The total... mass]  
 60. A biconvex...will behave like [Ans.a convex lens...n<sub>1</sub> & n<sub>2</sub>; a concave lense...& n<sub>2</sub>]