

Exam Notes

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1 Formulas

1. $F_g = \frac{mMG}{r^2}$
2. $\omega = \frac{2\pi}{T}$
3. $v = \omega \times radius$
4. $a = \frac{v^2}{r}$
5. $E = \frac{V}{d}$
6. $PE = Vq$
7. $T^2MG = 4\pi^2r^3$ (Kepler's Law)
8. $PE = \frac{-mMG}{r}$
9. $PE = -2KE$
10. $E = KE + PE$
11. $F_e = \frac{k_e q_1 q_2}{r^2}$
12. $\frac{1}{4\pi E_0}$
13. $EA = \frac{Q_{enc.}}{E_0}$
14. $\lambda = \frac{Q}{L}$
15. $F_e = qE$
16. $PE = QV$
17. $\Delta x = \frac{1}{2}at^2$
18. $P = IV$
19. $V = IR$
20. $I = \frac{Q}{\Delta t}$

- 21. $B = \frac{\mu I}{2\pi r}$
- 22. $P = \frac{V^2}{R}$
- 23. $F_B = qvB\sin\theta$ (Particles)
- 24. $F_B = ILB\sin\theta$ (Wires)
- 25. $T = rF\sin\theta$ (Torque)
- 26. $\omega = \frac{v}{r}$
- 27. $KE = \frac{I\omega^2}{2}$
- 28. $I = \Sigma mr^2$
- 29. $Q = \frac{3}{2}K_bT$ (Monatomic Particles)
- 30. $Q = \frac{5}{2}K_bT$ (Diatomic Particles)
- 31. $Q = mC\Delta T$
- 32. $Q = mL$
- 33. $\Delta U = Q - W$
- 34. $U = \frac{3}{2}PV$