上海市高考用物理公式回忆

1. $V_t = V_0 + at$

2. $S = V_0 t + \dfrac{1}{2} at^2 = V_t t - \dfrac{1}{2} at^2$

3. $V_t^2 = V_0^2 + 2as$

4. $\overline{v} = \dfrac{s}{t} = \dfrac{v_0 + v_t}{2} = \dfrac{v_t}{2} = v_0 + \dfrac{at}{2} = v_t - \dfrac{at}{2}$

5. $a = \dfrac{\Delta S}{T^2}$,

6. $S_1 : S_2 : S_3 = 1 : 3 : 5$ 8. $S_{\mathrm{I}} : S_{\mathrm{II}} : S_{\mathrm{III}} = 1 : 4 : 9$

7. $V_t = gt$, $h = \dfrac{1}{2} gt^2$, $v^2 = 2gh$

8. $t = \sqrt{\dfrac{2h}{g}}$, $v = \sqrt{2gh}$.

9. $V_t = V_0 - gt$，$h = V_0 t - \dfrac{1}{2} gt^2$

10. $a = \omega^2 r = \dfrac{v^2}{r} = \dfrac{4\pi^2}{T^2} r$

11. $V = \omega r$,   12. $T = \dfrac{2\pi r}{v} = \dfrac{2\pi}{\omega}$

13. $\omega = 2\pi n$，$v = 2\pi n r$

14. $f = \dfrac{1}{T}$ （一切周期运动）

15. ①F 的水平分力：$F\cos\alpha$ 、竖直分力：

$F\sin\alpha$ 、对水平面压力：$G - F\sin\alpha$ 、②重力

的下滑分力：$G\sin\theta$ 、垂直于斜面的分力：

$G\cos\theta$ 、③$OA = G/\cos\theta$ ；$T_{OB} = G\,tg\theta$

16. $G = mg$, $F = G\dfrac{m_1 m_2}{R^2}$

$mg \approx G\dfrac{Mm}{R^2}$, $g_{引} = \dfrac{GM}{R^2}$

17. $f = \mu N$,   18. $f = -kx$

19. $F = k\dfrac{qQ}{r^2}$ $E = \dfrac{F}{q}$ $E = \dfrac{U}{d}$,

$E = k\dfrac{Q}{r^2}$ $w = qEs\cos\theta$

（q、Q 的 "-" 号均可不代入）

20. $\varepsilon_A = qU_A$ $U_{AB} = U_A - U_B$

$W_{AB} = q\,U_{AB}$

$W_{AB} = \varepsilon_A - \varepsilon_B = -\Delta\varepsilon$

（所有正负号代入）

21. $F = BIL$（$L \parallel B$ 时，$F = 0$）

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22. $E_k = \dfrac{1}{2} mv^2$,   23. $E_p = mgh$

24. $F_{合} = ma$, $\sum F_x = ma_x$, $\sum F_y = ma_y$

25. $G\dfrac{Mm}{R^2} = m\omega^2 R = m\dfrac{v^2}{R} = m\dfrac{4\pi^2}{T^2} R$

26. $W = FS\cos\theta$

27. $P = \dfrac{w}{t}$, $P = FV$, $a = \dfrac{\dfrac{p}{v} - f}{m}$

$v_m = \dfrac{p}{f}$, $v_m = \dfrac{p}{f + ma}$

28. $W_G = -\Delta E_{PG}$, $W_E = -\Delta\varepsilon$,

$W_{总} = \Delta E_k$, $W_{\overline{G}} = \Delta E$, $W_A = E_{电} \to E_{机}$

$|W_{-A}| = E_{机} \to E_{电}$,   ,

29. $mgh_1 + \dfrac{1}{2} mv_1^2 = mgh_2 + \dfrac{1}{2} mv_2^2$

30. $F_{回} = -kx$ （简谐振动条件）

31. $T = 2\pi\sqrt{\dfrac{L}{g}}$

32. $\lambda = vT$, $v = \lambda f$（一切波）

33. $I_1 = I_2$, $U = U_1 + U_2$, $R = R_1 + R_2$

34. $U_1 = U_2$, $I = I_1 + I_2$, $R = \dfrac{R_1 R_2}{R_1 + R_2}$

35. $I = \dfrac{\varepsilon}{(R+r)}$, $I = \dfrac{u}{R}$, $*I = \dfrac{q}{t}$

36. $U_{内} = Ir$, $U = \varepsilon - Ir = IR$

37. $W = UIt = qU$,   43. $Q = I^2 Rt$

特例：$UIt = I^2 Rt = \dfrac{u^2}{R} t = qu$

38. $P_{总} = I\varepsilon = I^2(R+r) = \dfrac{\varepsilon^2}{R+r}$

$P_{外} = I^2 R = UI = \dfrac{u^2}{R}$, $P_{内} = I^2 r = IU_{内} = \dfrac{u^2}{r}$

$P_{总} = P_{外} + P_{内}$, $\eta = \dfrac{有用量}{总量} \times 100/100$

39. 当 $R = r$ 时，$P_{OM} = \dfrac{\varepsilon^2}{4r}$ 。

40. $\Phi = BS\sin\theta$

41. $\varepsilon = BLV$, $\varepsilon = n\dfrac{\Delta\Phi}{t}$

$F = \dfrac{B^2 L^2 v}{r + R}$, $q = \dfrac{\Delta\phi}{R+r}$.

42. $\dfrac{p_1 v_1}{T_1} = \dfrac{p_2 v_2}{T_2}$ （派生 3 个基本公式）

43. $T = t + 273$, $\Delta T = \Delta t$

44. $p = p_0 \left(1 + \dfrac{t}{273}\right)$, $v = v_0 \left(1 + \dfrac{t}{273}\right)$

45. $E = h\upsilon$, 46. $m = m_0 2^{-t/\tau}$