



INTERMEDIATE

Simple Harmonic Motion [S.H.M]

Hand Notes For JEE Mains, Advance, NEET UG, Class 11 & 12 etc...

Hand Notes

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SIMPLE HARMONIC MOTION [S.H.M.]

11) → Aperiodic motion → A particle not repeat path in a same time interval.
 * also called non-periodic motion.
 Eg → * A BUS or ~~vehicle~~ ^{vehicle} move in st. line
 * Motion of gas molecule.

12) → Periodic motion → If particle repeat its path in a same time interval.

- EX → * Motion of pendulum
 * Motion around the nucleus
 * Motion of planet around the sun.
 * Motion of Earth w.r.t self axis.
 * Motion of swift.
 * Motion of lig in 'U' tube.
 * Motion of wooden plank at surface of liq.

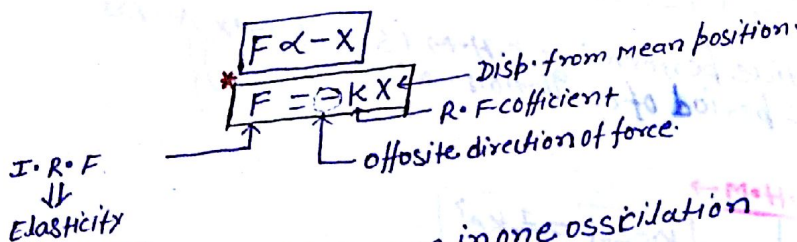
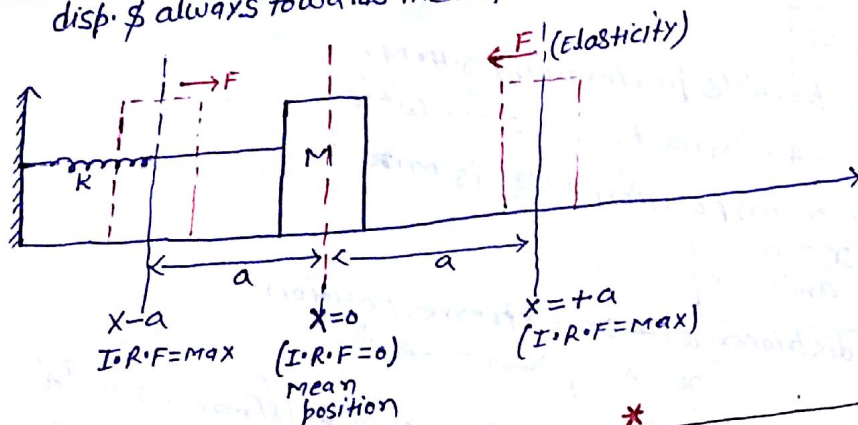
13) → Oscillatory/vibrational motion → If particle repeat its path w.r.t same point & complete throw & flow motion in same time interval.

- Eg → * Motion of pendulum
 * Motion of swimmer
 * Motion of lig in 'U' tube.
 * Motion of medium particle when wave propagate in a medium.

AIIMS

NOTE → All oscillating motion is periodic but all periodic motion is not oscillatory.

14) → Simple harmonic motion → If a oscillatory motion is directly proportional to the disp. & always towards mean position.



Exam
 * Displacement and distance in one oscillation
 Resp. zero & $4a$.

Amplitude → Max disp. of medium particle from mean position.

NOTE → * Elasticity Inertia is necessary for oscillatory motion.
 * S.H.M. occur in stable eqn.
 * One vibrational vibration of polyatomic gas molecule about its eqm. position → S.H.M.

