

OSCILLATIONS AND WAVES (234 phys)

اهتزازات وموجات

Syllabus:

Chapter	subjects	Problems
1. Free vibrations	Harmonic motion, boundary conditions, phase difference, vector diagrams, velocity and acceleration, energy, alternative mathematics for harmonic motion	1,2,3,6,7,8
2. Free vibrations in Physics	Angular vibrations, torsional vibrations, pendulum vibrations, acoustic vibrations, plasma vibrations, molecular vibrations, circuit oscillations	1, 2, 4
3. Damping	Light damping, heavy damping, very heavy damping, critical damping	1, 2, 3, 5, 7, 10
4. Damping in Physics	Resistance damping, electromagnetic damping, ballistic galvanometer, collision damping, friction damping	1, 2, 4, 5
5. Forced vibrations	Steady states, light damping: resonance, power absorption, heavy damping, complex response functions, superposition	2, 5, 9, 13, 17
6. Forced vibrations in Physics	Resonant circuit, scattering of light, dielectric susceptibility, absorption of microwaves by water	1, 2, 3, 4, 5

Reference book: Vibrations and waves in Physics, Ian G Mean

Evaluation Exam Marks

1st Midterm	20
2nd Midterm	20
Class activities (attendance – reports –quizzes)	20
Final	40
TOTAL	100

See more at: <http://fac.ksu.edu.sa/habdulrahman>