

TELANGANA STATE BOARD OF INTERMEDIATE EDUCATION: HYDERABAD

ANNUAL ACADEMIC PLAN 2023-24

PHYSICS

I YEAR

| Month / No. of working days/no. of periods | Topics to be covered | Periods allotted for each topic |
|---|--|--|
| June (24) | Advanced supplementary exams- 12/06/2023 to 20/6/2023 | 08 |
| | "Syllabus dictation and discussion of IPE question paper along with scheme of valuation weightage of marks to each chapter" | 02 |
| | CHAPTER -I PHYSICAL WORLD | |
| | 1.1. What is Physics ? 1.2. Scope and excitement of physics 1.3. Physics, technology and society 1.4. Fundamental forces in nature 1.5. Nature of physical laws | 04 |
| | EAMCET Class | |
| | CHAPTER –II UNITS AND MEASUREMENTS | |
| | 2.1 Introduction 2.2 The International system of units 2.3 Measurement of length 2.4 Measurement of mass 2.5 Measurement of time 2.6 Accuracy, precision of instruments and errors in measurement 2.7 Significant figures 2.8 Dimensions of physical quantities 2.9 Dimensional formulae and dimensional equations 2.10 Dimensional analysis and its applications | 09 |
| | EAMCET Class | |
| | ASSIGNMENT –I | 01 |

| | | |
|-------------------------------|--|--|
| <p>JULY (23)</p> | <p>Chapter-III: MOTION IN A STRAIGHT LINE</p> <p>3.1 Introduction 3.2 Position, path length and displacement 3.3 Average velocity and average speed 3.4 Instantaneous velocity and speed 3.5 Acceleration 3.6 Kinematic equations for uniformly accelerated motion 3.7 Relative velocity</p> <p>EAMCET Class</p> <p>Chapter –IV: MOTION IN A PLANE</p> <p>4.1 Introduction 4.2 Scalars and vectors 4.3 Multiplication of vectors by real members 4.4 Addition and subtraction of vectors graphical method 4.5 Resolution of vectors 4.6 Vector addition Analytical method 4.7 Motion in a plane 4.8 Motion in a plane with constant acceleration 4.9 Relative velocity in two dimensions 4.10 Projectile motion 4.11 Uniform circular motion</p> <p>EAMCET Class</p> <p>ASSIGMENT –2</p> <p>Unit test 1</p> <p>Practicals:</p> <p>1.Vernier callipers 2. Screw gauge</p> | <p>10</p> <p>11</p> <p>01 01</p> |
| <p>AUGUST (25)</p> | <p>CHAPTER-V: LAWS OF MOTION</p> <p>5.1 Introduction 5.2 Aristotle’s fallacy 5.3 The law of inertia 5.4 Newton’s first law of motion 5.6 Newton’s second law of motion 5.7 Newton’s third law of motion 5.8 Conservation of momentum 5.9 Equilibrium of a particle 5.10 Common forces in mechanics, friction Circular motion 5.11 Solving problems in mechanics</p> <p>EAMCET Class</p> | <p>11</p> |

| | | |
|---|---|--|
| | <p>CHAPTER – VI: WORK, ENERGY AND POWER</p> <p>6.1 Introduction</p> <p>6.2 Notions of work and kinetic energy: The work energy theorem.</p> <p>6.3 Work</p> <p>6.4 Kinetic Energy</p> <p>6.5 Work done by a variable force</p> <p>6.6 The work-energy theorem for a variable force.</p> <p>6.7 The concept of potential energy</p> <p>6.8 The conservation of mechanical energy</p> <p>6.9 The potential energy of a spring</p> <p>6.10 Various forms of energy: the law of conservation of energy.</p> <p>6.11 Power</p> <p>6.12 Collisions</p> <p>EAMCET Class</p> <p>ASSIGNMENT-3</p> <p>Unit test 2</p> <p>Practicals:</p> <p>3. Physical balance</p> <p>4. CONCURENT FORCES</p> | <p>12</p> <p>01</p> <p>01</p> |
| <p>SEPTEMBER (22)</p> | <p>CHAPTER-VII SYSTEM OF PARTICLES AND ROTATIONAL MOTION</p> <p>7.1 Introduction</p> <p>7.2 Centre of mass. Centre of gravity</p> <p>7.3 Motion of Centre of mass</p> <p>7.4 Linear momentum of a system of particles</p> <p>7.5 Vector product of two vectors</p> <p>7.6 Angular velocity and its relation with linear velocity, kinematics of rotational motion about a fixed axis.</p> <p>7.7 Torque and angular momentum</p> <p>7.8 Equilibrium of a rigid body</p> <p>7.9 Moment of inertia</p> <p>7.10 Theorems of perpendicular and parallel axis.</p> <p>7.11 Dynamics of rotational motion about a fixed axis.</p> <p>7.12 Angular momentum in case of rotations about a fixed axis.</p> <p>7.13 Rolling motion</p> <p>EAMCET Class</p> | <p>12</p> |

| | | |
|---|---|-----------|
| OCTOBER (18) | Chapter VIII: OSCILLATIONS | |
| | 8.1 Introduction | |
| | 8.2 Periodic and oscillatory motions | |
| | 8.3 Simple Harmonic motions | |
| | 8.4 Simple Harmonic motion and uniform circular motion | |
| | 8.5 Velocity and acceleration in simple harmonic motion | |
| | 8.6 Velocity and acceleration in simple harmonic motion | 08 |
| | 8.7 Force law for simple harmonic motion | |
| | 8.8 Energy in simple harmonic motion | |
| | 8.9 Some systems executing simple harmonic motion | |
| | 8.10 Damped simple harmonic motion | |
| | 8.13 Forced oscillations and resonance | |
| | EAMCET Class | |
| | ASSIGNMENT –4 | 01 |
| | UNIT TEST – 3 | 01 |
| | Practicals: | |
| | 5. SIMPLE PENDULUM | |
| | 6. FORCE CONSTANT OF SPRING | |
| CHAPTER –IX: GRAVITATION | | |
| 9.1 Introduction | | |
| 9.2 Kepler’s laws | | |
| 9.3 Universal law of gravitation | | |
| 9.4 The gravitational constant | | |
| 9.5 Acceleration due to gravity of the earth | | |
| 9.6 Acceleration due to gravity below and above the surface of earth. | 09 | |
| 9.7 Gravitational potential energy | | |
| 9.8 Escape speed | | |
| 9.9 Earth satellite | | |
| 9.10 Energy of an orbiting satellite | | |
| 9.11 Geostationary and polar satellites | | |
| 9.12 weightlessness | | |
| EAMCET Class | | |
| CHAPTER –X | | |
| MECHANICAL PROPERTIES OF SOLIDS | | |
| 10.1 Introduction | | |
| 10.2 Elastic behaviour of solids | | |
| 10.3 Stress and strain | | |
| 10.4 Hook’s law | 08 | |
| 10.5 Stress – strain curve | | |
| 10.6 Elastic moduli | | |
| 10.7 Applications of elastic behaviour of materials | | |
| EAMCET Class | 01 | |
| ASSIGNMENT 5 | | |
| DUSSEHRA Holidays: 19-10-2023 TO 25-10-2023 | | |
| Date of Reopening: 26-10-2023 | | |

| | | |
|---------------------------------|---|--|
| <p>November (24)</p> | <p style="text-align: center;">CHAPTER – XI MECHANICAL PROPERTIES OF FLUIDS</p> <p>11.1 Introduction 11.2 Pressure 11.3 Streamline flow 11.4 Bernoulli's principle 11.5 Viscosity 11.6 Reynolds number 11.7 Surface tension</p> <p>EAMCET Class</p> <p style="text-align: center;">CHAPTER – XII THERMAL PROPERTIES OF MATTER</p> <p>12.1 Introduction 12.2 Temperature and Heat 12.3 Measurement of temperature 12.4 Ideal – gas equation and absolute temperature 12.5 Thermal expansion 12.6 Specific Heat capacity 12.7 Calorimetry 12.8 Change of state 12.9 Heat transfer 12.10 Newton's law of cooling.</p> <p>EAMCET Class Practicals: 7. Determination of surface tension of a liquid liquid 8. Apparent expansion of a liquid</p> <p style="text-align: center;">HALF YEARLY EXAMINATIONS: 20-11-2023 TO 25-11-2023</p> | <p style="text-align: center;">08</p> <p style="text-align: center;">10</p> <p style="text-align: center;">06</p> |
| <p>DECEMBER (23)</p> | <p>CHAPTER –XIII: THERMODYNAMICS</p> <p>13.1 Introduction 13.2 Thermal equilibrium 13.3 Zeroth law of thermodynamics 13.4 Heat, internal energy and work 13.5 First law of thermodynamics 13.6 Specific heat capacity 13.7 Thermodynamic state variables and equation of state 13.8 Thermodynamic processes 13.9 Heat engines 13.10 Refrigerators and heat pumps 13.11 Second law of thermodynamics 13.12 Reversible and irreversible processes 13.13 Carrot engine, Carnot's theorem.</p> <p>EAMCET Class</p> | <p style="text-align: center;">12</p> |

| | | |
|--------------------------------|---|---|
| | CHAPTER – XIV: KINETIC THEORY 14.1 Introduction 14.2 Molecular nature of matter 14.3 Behaviour of gases 14.4 Kinetic theory of an ideal gas 14.5 Laws of equipartition of energy 14.6 Specific heat capacity 14.7 Mean free path EAMCET Class ASSIGNMENT – 6 UNIT TEST – 4 Practicals: 9. Boyle's law 10. Specific heat of a solids | 09 01 01 |
| January (23) | Theory Revision SANKRANTRI HOLIDAYS FROM 13-01-2024 TO 16-01-2024 DATE OF REOPENING: 17-01-2024 PREFINAL EXAMINATIONS : FROM 22.01.2024 TO 29.01.2024 | 17 06 |
| February (23) | Theory Revision | 23 |
| March (22) | I.P. Examinations: Ist week of March 2024 Last working day: 31-03-2024 Summer Vacation: 01-04-2024 to 31-05-2024 Advance Supplementary Exams :last week of May 2024 Date of Reopening after summer vacation: 01-06-2024 | 22 |

Prepared by: **B.VISHNU VARDHAN**, JL in Physics,
Government Junior College, CHANCHAL GUDA, HYDERABAD District