

GOVERNMENT POLYTECHNIC JAJPUR
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LESSON PLAN

1ST SEMESTER

No. of classes available per week-4

Total period available-60

Class duration-55 minutes

Teaching Method: Offline, Lecture note,
Learning Method- Daily Assignment, Unit test, quiz.

DEPARTMENT OF MATH & SCIENCE

LESSON PLAN

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| Discipline: Math & | Semester: 1st | Name of the Teaching faculty: Dr BISWAMBHAR MOHANTY Name of the Teaching faculty: SUNITA SAHOO |
| Subject: Engg. Physics | No of Days/Week class allotted: 4 | Semester from Date: 25/10/2021 To Date: 19/02/2022 No of weeks: 15 |
| Week | Class Day | Topics |
| 1st | 1st | i) introduction to Units ii) System of units |
| | 2nd | Dimensions and Dimensional formula |
| | 3rd | Application to dimensional Analysis |
| | 4th | i) Identification of Scalar and vector quantities |
| 2nd | 1st | i) Types of vectors ii) Vector addition |
| | 2nd | i) Multiplication of Two vectors(Dot product) |
| | 3rd | i) Cross Product |
| | 4th | i) concept of rest and moving body ii) Equation of motion under gravity |
| 3rd | 1st | i) Solving Numericals |
| | 2nd | i) Circular motion |
| | 3rd | i) Solving numericals |
| | 4th | i) Projectile motion. ii) Facts about Projectile. |
| | 1st | i) Projectile fired horizontally by making an angle |

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| 4th | 2nd | i) Work |
| | 3rd | i) Friction |
| | | ii) Types of Friction |
| 4th | i) Laws of limiting Friction | |
| 5th | 1st | i) coefficient of friction |
| | | ii) Methods of reducing Friction |
| | 2nd | i) Numericals |
| | | ii) Class test 1 conducted |
| 3rd | i) Gravitation | |
| | ii) Newtons laws of Gravitation | |
| 4th | i) Relation between g and G | |
| | ii) Universal gravitational constant | |
| 6th | 1st | i) Variation of g with altitude and depth |
| | 2nd | i) Keplers laws of Planetary motion |
| | 3rd | i) Numericals |
| | 4th | i) Oscillations(Simple Harmonic Motion) |
| 7th | 1st | i) Characteristics of SHM |
| | 2nd | i) Numericals |
| | 3rd | i) Waves |
| | | ii) Types of wave motion |
| 4th | i) Properties of wave motion | |
| 8th | 1st | i) Ultrasonics |
| | 2nd | i) Heat |
| | | ii) Specific heat |
| | 3rd | i) Latent heat |
| ii) Numericals on heat | | |
| 4th | i) Thermal expansion(Examples) | |
| | ii) Expansion coefficients | |
| 9th | 1st | i) Derivation of expansion coefficients |
| | 2nd | i) Relation between expansion coefficients |
| | 3rd | i) Work and heat |
| | | ii) First law of Thermodynamics. |
| 4th | i) Numericals | |
| | 1st | i) Optics |
| | | ii) Reflection & Refraction |

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| 10t h | 2nd | i) Refractive index |
| | | ii) Numericals |
| | 3rd | i) Critical angle & Total Internal Reflection |
| | 4th | i) Refraction through Prism |
| ii) Fiber optics | | |
| 11t h | 1st | i) Electrostatics |
| | | ii) Coulombs laws |
| | 2nd | i) Electric potential |
| | | ii) Electric field |
| | | iii) Electric capacitance |
| | 3rd | i) Grouping of capacitors |
| | | ii) Numericals |
| | 4th | i) Magnetostatics |
| ii) Coulombs laws | | |
| 12t h | 1st | i) Magnetic field |
| | | ii) Magnetic field intensity |
| | 2nd | i) Magnetic lines of force |
| | 3rd | i) Magnetic flux |
| 4th | CLASS Test 2 conducted | |
| 13t h | 1st | i) Concept of electric current |
| | | ii) Ohm's law and its application |
| | 2nd | i) Grouping of resistors |
| | | ii) Numericals on series and parallel combination of resistors |
| | 3rd | Kirchhoff's law |
| 4th | i) Numericals | |
| 14t h | 1st | i) Application of Kirchhoff's law |
| | | ii) Balanced condition of wheatstone bridge |
| | 2nd | i) Electromagnetism |
| | | ii) Force on a conductor in a uniform magnetic field |
| | 3rd | i) Fleming's left hand rule |
| | | ii) Electro magnetic Induction |
| | | iii) Comparison between Electromagnetism and Electromagnetic Induction |
| | 4th | i) Faraday's laws of Electromagnetic Induction |
| | | i) Fleming's right hand rule |

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| 15th | 1st | ii) Lenz's law, simple numerical |
| | | iii) Comparison between Fleming's left hand and right hand rule |
| | 2nd | i) LASER (Spontaneous and stimulated emission) |
| | 3rd | i) principle, properties and application of LASER |
| | 4th | i) Wireless Transmission |

Dr. Biswanath Mohanty

Signature of Faculty