SANT NANDLAL SMRITI VIDYA MANDIR, GHATSILA

YEARLY SYLLABUS OF PHYSICS

SESSION – (2025-26)

STD – XII

MONTH	WORKING DAYS	TOPIC TO BE TAUGHT	ACTIVITY	LEARNING OUTCOME/ASSESSMENT	VALUES & SKILLS IMPARTED	ASSESSMENT
APRIL	21	ELECTROSTATICS ELECTRIC CHARGES- CONSERVATION OF CHARGE,COULAMB'S LAW,SUPERPOSITION PRINCIPLE OF CHARGES ELECTRIC FIELD- DUE TO POINT CHARGE,DUE TO ELECTRIC DIPOLE,ELECTRIC FIELD LINES,TORQUE ON A DIPOLE,ELECTRIC FLUX,GAUSS'S THEOREM AND IT'S APPLICATION. ELECTRIC POTENTIAL- POTENTIAL DUE TO POINT CHARGE,DUE TO DIPOLE,DUE TO SYSTEM OF CHARGES,EQUIOPOTENTIAL SURFACES,ELECTRIC POTENTIAL ENERGY OF A SYSTEM OF CHARGES IN ELECTRIC FIELD. CONDUCTOR AND INSULATOR- FREE AND BOUND CHARGES INSIDE A CONDUCTOR,DIELECTRICS AND ELECTRIC POLARISATION,CAPACITOR AND CAPACITANCE OF PARALLEL PLATE	1.DETERMINATION OF RESISTANCE/CM OF A GIVEN WIRE BY PLOTTING GRAPH OF V-I 2.DETERMINATION OF RESISTANCE OF A GIVEN WIRE USIRE METER BRIDGE 3.VERIFICATION OF LAWS OF SERIES CMBINATION OF RESISTANCE USING A METER BRIDGE	STUDENTS WILL BE ABLE TO UNDERSTAND AND LEARN ABOUT THE PHYSICAL CHARACTERISTICS OF ELECTRIC CHARGE,EFFECT OF CHARGE,IMPORTANCE AND WORKING OF CAPACITOR WITH AND WITHOUT DIELECTRIC MEDIUM. TOPICS OF ASSESSMENT- 1.PROPERTIES OF CHARGE 2.PROPERTIES OF COULOMB FORCE.	PROBLEM SOLVING SKILLS,SELF MOTIVATION,POSITIVE ATTITUDE.ADAPTIBILITY .DECISION MAKING ,	MONTHLY TEST QUESTIONS FROM NCERT AND REFERENCE BOOK ALSO. NUMERICALS FROM SAMPLE PAPER

		CAPACITOR WITH AND WITHOUT DIELECTRIC MEDIUM.				
MAY	9	CURRENT ELECTRICITY- ELECTRIC CURRENT IN METALLIC CONDUCTOR, DRIFT VELOCITY,MOBILITY AND THE RELATION EITH ELECTRIC CURRENT,OHM'S LAW,ELECTRIC RESISTANCE,V-I CHARACTERISTICS	1. TO VERIFY THE LAWS OF PARALLEL COMBINATION OF RESISTENCE USING A METERBRIDGE	STUDENTS WILL BE ABLE TO UNDERSTAND AND LEARN ABOUT THE ELECTRIC CURRENT,ELECTRIC ENERGY AND POWER,ELECTRIC POWER OF DIFFERENT DEVICES.	CREATIVITY, TEAM WORK ,TIME MANAGE MENT,DISPLAYING HONESTY,INTRIGRIT YAND PERSEVERANCE	MONTHLY TEST QUESTIONS FROM TEXT BOOK REGARDING THE TOPICS TAUGHT NUMERICALS FROM REFERENCE BOOK AND SAMPLE PAPER .
JUNE	11	CONTINUATION OF CURRENT ELECTRICITY ELECTYRIC ENERGY,POWER,RESISTIVITY,CONDUCTIVIT Y,SERIES AND PARALLEL COMBINATION OF RESISTORS,TEMPRATURE DEPENDENCEOF RESISTENCE. INTERNAL RESISTENCE OF A CELL AND RELATION WITH EMF AND POTENTIAL DIFFERENCE,COMBINATION OF CELLS . KIRCHOFF;S LAW AND ITS APPLICATION, POTENTIOMETER,PRINCIPLE AND WORKING AND APPLICATION OF POTENTIOMETER	1.TO COMPARE THE EMF OF TWO PRIMARY CELLS USING POTENTIOMETER. 2.TO DETERMINE INTERNAL RESISTANCE OF A PRIMARY CELL USING POTENTIOMETER.	STUDENTS WILL BE ABLE TO UNDERSTAND AND LEARN ABOUT CONDUCTIVITY AND RESISTIVITY PRACTICALLY AND THEOROTICALLY BOTH. <u>TOPICS OF ASSESSMENT-</u> 1.OHMS LAW AND ITS VERIFICATION. 2.KIRCHOFFS LAW AND APPLICATIONS.		CLASS TEST QUESTIONS FROM THE TOPICS TAUGHT SIMPLE NUMERICALS FROM NCERT BOOK
JULY		MAGNETIC EFFECT OF CURRENT AND MAGNETISM- BIOT –SAVERT LAW AND ITS APPLICATION,AMPERE'S LAW AND ITS APPLICATION,FORCE ON A MOVING CHARGE,FORCE ON ELECTRIC CONDUCTOR, TORQUE ON A CURRENT LOOP,PRINCIPLE	1.TO DETERMINE RESISTANCE OF A GALVANOMETER BY HALF DEFLECTION METHOD 2.TO CONVERT A GALVANOMETER INTO A VOLTMETER 3.TO CONVERT A GALVANOMETER INTO	STUDENTS WILL BE ABLE TO LEARN ABOUT THE MAGNETIC PROPERTIES OF DIFFERENT SUBSTANCES WITH MAGNETIC PROPERTIES OF EARTH. <u>TOPICS OF ASSESSMENT-</u> 1.BIO-SAVART LAW AND APPLICATIONS. 2.CONVERSION OF	RESPONSIBILITIES,P ATIENCE DEPENDIBILITY,HON ESTY AND LOYALITY.	MONTHLY TEST QUESTIONS FROM THE TOPICS TAUGHT NUMERICALS FROM SAMPLE PAPER.

	26	OF MOVING COIL GALVANOMETER,SENSITIVITY AND CONVERSIOF GALVANOMETER INTO VOLTMETER AND AMMETER. MAGNETISM- MAGNETIC DIPOLE MOMENT,TORQUE ON A MAGNETIC DIPOLE,MAGNETIC FIELD LINES AND ITS PROPERTIES,EARTH'S MAGNETIC COMPONENTS,MAGNETIC ELEMENTS,PARA,DIA AND FERRO MAGNTIC SUBSTANCES.	AN AMMETER	AMMETER AND VOLTMETER FROM GALVANOMETER.		
AUGUST	24	E.M.I AND ALTERNATING CURRENTS, ELECTROMAGNETIC INDUCTION RELATED TO FARADAY' S AND LENZ'S LAW. ALTERNATING CURRENTS,PEAK AND RMS VALUES OF A.C VOLTAGE,LCR CIRCUIT ,POWER AND A.C CIRCUIT.A.C GENERATOR AND TRANSFORMER, ELECTROMAGNETIC WAVES,DISPLACEMENT CURREN,NEED OF THIS CURRENT WITH REASON, ELECTROMAGNETIC SPECTRUM,CLASSIFICATION AND THEIR USES,	*1.*FIND THE FREQUENCY OF A.C MAINS WITH A SONOMETER 2.FIND THE FOCAL LENGTH OF A CONCAVE MIRROR 3.FIND THE FOCAL LENGTH OF A CONVEX MIRROR USING A CONVEX LENS	STUDENTS CAN LEARN AND UNDERSTAND ABOUT THE TOPICS ALTERNATING CURRENT AND ITS MERITS AND DEMERITS <u>TOPICS OF ASSESSMENT-</u> 1.PHENOMENON OF INDUCTION. 2. TYPES OF INDUCTION.	UNDERSTANDING PERSONAL VALUES,CATAGORISING DATAS,COORDINATING ,COLLABORATION,CRITICAL THINKING AND DATA ANALYSIS .	1^{ST} PRE TERM TEST QUESTIONS FROM RELATED TOPICS TAUGHT NUMARECAL FROM OLD SAMPLE PAPER.

SEPTEMBER	21	OPTICS- REFLECTION OF LIGHT THROUGH SPHERICAL MIRRORS, REFRACTION OF LIGHT,TOTAL INTERNAL REFLECTION AND ITS APPLICATION, REFLECTION AT SPHERICAL SURFACE,LENS FORMULA,LENS MAKER'S FPRMULA,COMBINATION OF LENSES,POWER OF LENSES,REFACTION AND DISPERSION OF LIGHT THROUGH A PRISM, OPTICAL INSTRUMENT- COMPOUND MICROSCOPE AND TELESCOPE,REFLECTIN AND REFRACTING TYPE WITH THEIR MAGNIFYING POWER **Revision** **HALF YEARLY EXAM**	1.FIND THE FOCAL LENGTH OF CONVEX LENS BY PLOTTING GRAPH BETWEEN U-V, 2. FIND THE FOCAL LENGTH OF CONCAVE LENS USING A CONVEX LENS 3. DETERMINATION OF ANGLE OF MINIMUM DEVIATION FOR A GIVEN PRISM BY PLOTTING GRAPH BETWEEN ANGLE OF INCIDENCE AND DEVIATION **HALF YEARLY EXAM**	STUDENTS CAN LEARN ABOUT NATURAL PHENOMENA RELATED TO OPTICS LIKE FORMATION OF REAL AND VIRTUAL IMAGE,MIRAGE,LOOMING . <u>TOPICS OF ASSESSMENT-</u> 1. REFLECTION THROUGH SPHERICAL MIRRORS. 2.REFRACTION THROGH DIFFERENT TYPES OF LENS. **HALF YEARLY EXAM**	CRITICAL THINKING AND PROBLEM SOLVING, COLLABORATION SKILLS ,TECHNICAL KNOWLEDGE DEVELOPMENT AND CODING ABILITY. **HALF YEARLY EXAM**	HALF YEARLY EXAM MONTHLY TEST **HALF YEARLY EXAM**
OCTOBER	18	WAVE OPTICS- WAVE FRONT ANF HUYGEN'S PRINCIPLE,REFLECTION AND REFRACTION OF PLANE WAVE FRONT, INTERFERRENCE OF LIGHT,EXPRESSION FOR FRINGE WIDTH,COHERRENT AND NONCOHERRENT SOURCES OF LIGHT. DIFFRACTION OF LIGHT DUE TO A SINGLE SLIT,WIDTH OF CENTRAL MAXIMUM,RESOLVING POWER OF MICROSCOPE AND TELESCOPE,BERSTED'S LAW AND POLARISATION OF LIGHT WITH	1.DETERMINE THE REFRACTIVE INDEX OF A GLASS SLAB USING TRAVELLING MICROSCOPE 2.FIND THE REFRACTIVE INDEX OF LIQUID BY USING CONVEX LENS AND PLANE MIRROR	STUDENTS CAN LEARN THE WAVE NATURE OF LIGHT AND CAN RELATE WITH THE PARTICLE NATURE OF LIGHT. <u>TOPICS OF ASSESSMENT-</u> 1.HUYGENS PRINCIPLE AND APPLICATIONS. 2.YOUNGS DOUBLE SLIT EXPERIMENT.		MONTHLY TEST QUESTIONS FROM OLD SAMPLE PAPER WITH NUMARICALS

		POLAROIDS,				
NOVEMBER	23	DUAL NATURE OF MATTER AND RADIATION- PHOTOELECTRIC EFFECT.EINSTEIN'S PHOTOELECTRIC EQUATION,MATTER WAVES,NATURE OF PARTICLES,DEBROGLEY'S WAVELENGTH	1.DRAW THE I-V CHARACTERISTICS CURVE A P-N JUNCTION DIODE	STUDENTS CAN LEARN ABOUT EINSTEIN PHOTOELECTRIC,RAMAN EFFECT,COMPTON EFFECT TOPICS OF ASSESSMENT- 1.PHOTO ELECTRIC EFFECT AND ITS APPLICATION. 2.DUAL NATURE OF RADIATION.	DEVELOPING OF CAPABILITIES IN EXPERIMENTAL KNOWLEDGE ,HONESTY AND PUNCTUALITY.	MONTHLY TEST SOLVING OF OLD SAMPLE PAPER QUESTIONS FROM TEXT BOOK.
DECEMBER	19	ATOMS AND NUCLEI- RUTHERFORD'S MODEL OF ATOMS,BOHR'S MODEL,ENERGY LEVEL OF ELECTRONS AND HYDROGEN SPECTRUM. COMPOSITION AND SIZE OF NUCLEUS,MASS –ENERGY RELATION IN NUCLEAR FISSION AND FUSION,BINDING ENERGY PER NUCLEON.	1.DRAW THE CHARACTERISTIC CURVE OF A ZENER DIODE AND DETERMINE BREAKDOWN VOLTAGE	STUDENTS CAN LEARN ABOUT ATOMIC STRUCTURE,CONVERSION OF MASS-ENERGY,POWER OF NUCLEAR FISSION AND FUSION TOPICS OF ASSESSMENT- 1.FORMATION OF HYDROGEN SPECTRUM 2.APPLICATION OF BOHRS THEORY.	EXPERIMENTAL VALUES,PROBLEM SOLVING SKILLS ,POSITIVE ATTITUDE LOYALITY	MONTHLY TEST QUESTIONS FROM OLD SAMPLE PAPER. QUESTIONS FROM NCERT ALSO.
JANUARY	22	ELECTRONIC DEVICES- ENERGY BANDS IN SOLIDS,INTRINSIC AND EXTRINSIC SEMICONDUCTORS,P-N JUNCTION DIODE IN FORWARD AND REVERSE BIAS,USE OF P-N DIODE,LOGIC GATEAND USES OF THEM		STUDENTS CAN LEARN ABOUT NONOHMIC CONDUCTOR LIKE JUNCTION AND VACUUM DIODE,SOLAR CELL,LED. TOPICS OF ASSESSMENT- 1. FORMATION OF P/N TYPE SEMICONDUCTOR. 2. WORKING OF PN DIODE.	KNOWLEDGE SHARING ,ADAPTIBILITY ,FLEXIBILITY PATIENCE MAKING SKILL .	MONTHLY TEST QUESTIONS FROM SAMPLE PAPER {NEW}
FEBRUARY	22	**REVISION**	REVISION	REVISION		REVISION

Subject Teacher : 1. T .MAHATA **Principal**

2. S .JANA