

**Teaching Plan**  
**Academic Year 2015 – 2016**

CLASS – B.Sc.III Year

SEMESTER –VI ,

SUBJECT –Physics,

Paper- **XIX (PHY – 306)**

PERIODS/ WEEK – 3

TOTAL WEEKS – 15

Weeks	Topics to be covered
1	Thomson atom model, Rutherford nuclear model, Drawbacks of Rutherford's model, Bohr's atomic model.
2	Bohr's theory of origin of spectral lines, Hydrogen spectra.
3	Vector atom model, Quantum numbers.
4	L – S coupling and j – j coupling, Pauli's Exclusion principle, Selection rules, Intensity rules, Interval rules.
5	Normal and anomalous Zeeman effect.
6	Stark effect and its experimental study.
7	Origin of pure rotational spectrum of a molecule .
8	Origin of vibrational rotational spectrum of a molecule, Rayleigh's law of scattering.
9	Raman effect – Discovery and experimental study,
10	Applications of Raman effect — Molecular structure, Nature of liquid.
11	Applications of Raman effect — Crystal physics, Nuclear physics and Chemical effects.
12	Induced absorption, Spontaneous emission and Stimulated emission.
13	Population Inversion, Properties of laser beam, Laser pumping.
14	Ruby laser, He – Ne laser, CO <sub>2</sub> laser.
15	Biological, Medical and Industrial applications of laser.

Teacher's Signature

H. O. D's Signature

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**Academic Year 2015 – 2016**

CLASS – B.Sc.III Year

SEMESTER –VI ,

SUBJECT –Physics,

Paper- **XX (PHY – 307)**

PERIODS/ WEEK – 3

TOTAL WEEKS – 15

Weeks	Topics to be covered
1	Biomass , Wind energy , Tidal/ Ocean energy , Geothermal energy , Solar energy.
2	Biogas hydro energy , Biogas plant fixed Dome type.
3	Introduction to Wind energy , Terms and definition : wind , wind farm , wind turbine , Vertical axis wind turbine , Horizontal axis wind turbine.
4	Propeller , Wind mill , Types of wind turbine generator units.
5	Mono blade HAWT, Twin blade HAWT , Merits and limitations of wind energy.
6	Photovoltaic systems , Solar cell fundamentals : Semiconductor , P – N junction
7	Generation of electron hole pair by photon absorption , I – V characteristics of solar cell.
8	Electrical storage : Lead acid battery , Basic battery theory.
9	Optical fibre and its importance , Classification of optical fibre , Stepped index and step index mono mode fibre.
10	Disadvantage of mono mode fibre , Plastic fibre , Latest developed types of optical fibre : HPSUV , HPSIR , Halide Tapered.
11	Fibre fabrication : Classification of fibre fabrication techniques, External chemical vapour deposition.
12	Axial vapour deposition , Internal chemical vapour deposition.
13	Fibre cables : Construction , Strength members , Cable tensile loading.
14	Minimum bend radius losses during installation of cables or during subscriber service testing of cable.

Teacher's Signature

Dr. M. I. Iqbal

H. O. D's Signature

**Teaching Plan**  
**Academic Year 2015 – 2016**

Class: **B.Sc. III year**

Semester: **VI**

Subject: **Electronics**

Paper No.: **XIX (ELE-601)**

Period per week: Theory: **3** Pract: **12** Weeks (Total):**15**

<b>Weeks</b>	<b>Topic to be Covered</b>
<b>1.</b>	Introduction to programmable controllers, industrial motor control circuits.
<b>2.</b>	Relay ladder logic circuits, building ladder diagram.
<b>3.</b>	Rack assembly, power supply, PLC programming unit.
<b>4.</b>	Input /output section, processor unit, addressing relationship of data file.
<b>5.</b>	Addresses to I/O modules summary.
<b>6.</b>	Fundamental of PLC programming PLC programme execution, ladder diagram.
<b>7.</b>	Programming language, relay logic instruction,
<b>8.</b>	Timer instructions, counter instructions.
<b>9.</b>	Data manipulation instruction, Arithmetic's operation.
<b>10.</b>	Writing a programme advance programming PLC meterfacing.
<b>11.</b>	Trouble shooting jump commands.
<b>12.</b>	Data manipulations.
<b>13.</b>	Discrete input/output modules.
<b>14.</b>	Trouble shooting I/O meterfaces.
<b>15.</b>	Revision.

Teacher's Signature  
(Dr. J.M. Pathan)

H. O. D's Signature

MAULANA AZAD COLLEGE, OF ARTS, SCIENCE AND COMMERCE,  
DEPARTMENT OF PHYSICS AND ELECTRONICS

Teaching Plan (2015 – 2016)

Academic Year 2015 – 2016

Class: B.Sc. III year

Semester: VI

Subject: Electronics

Paper No.: XX (A) (ELE-602) Period / Week: Theory: 03

Weeks (Total): 15

WEEKS	TOPICS TO BE COVERED
1.	Programming 8051 Timers, Counter Programming.
2.	Programming 8051 Timers, Counter Programming.
3.	Programming 8051 Timers, Counter Programming.
4.	Basics of Serial Communications.
5.	8051 Connection to RS232.
6.	8051 Serial Port Programming in Assembly.
7.	8051 Serial Port Programming in Assembly.
8.	8051 Interrupts.
9.	Programming Timer Interrupts.
10.	Programming External Hardware Interrupts.
11.	Interrupt Priority in the 8051 / 8052.
12.	LCD Interfacing.
13.	ADC {0808}, DAC{0808} Interfacing.
14.	Sensor Interfacing and Signal Conditioning {LM34 and LM 35}.
15.	Revision

Teacher's Signature

H. O. D.'s Signature