Krantiguru Shyamji Krishna Verma
Kachchh University
Mundra Road
BHUJ : 370 001

SYLLABUS (NEP-2020)
B. Sc. Semester I & II

PHYSICS

Semester-I

Code: MAJPHY- 101 & MAJPHY-102-P (4 credits, Major)

MAJPHY- 103 & MAJPHY-104-P (4 credits, Major)

MINPHY- 105 & MINPHY-106-P (4 credits, Minor)

MDCPHY- 107 & MDCPHY-108-P (4 credits, Multi Disciplinary)

Semester-II

Code: MAJPHY- 201 & MAJPHY-202-P (4 credits, Major)

MAJPHY- 203 & MAJPHY-204-P (4 credits, Major)

MINPHY- 205 & MINPHY-206-P (4 credits, Minor)

MDCPHY- 207 & MDCPHY-208-P (4 credits, Multi Disciplinary)

With effect from June 2023

DEPARTMENT OF PHYSICS

PROGRAMME SPECIFIC OUTCOMES & COURSE OUTCOMES

PROGRAMME: B.Sc. PHYSICS (Hons) OR B.Sc. PHYSICS (Hons With Research)

PROGRAMME OUTCOMES

PO-1 Students are intended to develop a conceptual understanding of physics principles. They will be able to demonstrate concepts in Classical Mechanics, Electromagnetism, Thermodynamics, Spectroscopy, Solid State Physics, Nuclear Physics and Quantum mechanics.

PO-2 Graduates should be able to transfer and apply the acquired concept and principles to study different branches of physics.

PO-3 Demonstrate the ability to translate a physical description to a mathematical equation and conversely explain the physical meaning of the mathematics, represent key aspects of physics through graphs, circuits, diagrams and use geometric arguments in problem-solving.

PO-4 Demonstrate the ability to justify and explain their thinking or approach both written and oral.

PO-5 Make measurements on physical systems understanding the limitation of the measurements and the limitations of models. Complete an experimental work, and report to the faculty by tabulating the readings and present the outcome of the experimental work.

PO-6 Development of the ability to appear for the competitive exams.

PROGRAMME SPECIFIC OUTCOMES

PSO-1 Students are expected to acquire core knowledge in physics, including the major areas of classical mechanics, quantum mechanics, electromagnetism, optics, electronics, modern physics and Electronics including digital electronics.

PSO-2 Students will develop the proficiency in the acquisition of data using a variety of laboratory instruments and in the analysis and interpretation of such data.

PSO-3 Students will show that they have learned laboratory skills enabling them to take measurements in a physics laboratory and analyze the measurements to draw valid conclusion.

PSO-4 Students will be capable of oral and written scientific communication and will prove that they can think critically and work independently.

PSO-5 Students will realize and develop an understanding of the impact of physics and science on society and their day to day life.

PSO-6 Discover of physics concepts in other disciplines such as mathematics, computer science, chemistry, geology and etc.

COURSE OUTCOMES:

> ## Mathematical Physics

Students will have understanding of various techniques to solve differential equations. How to use vector calculus in various physics problems. Students will be able to use advanced mathematical methods and theories on various mathematical and physical problems. Understand matrix and partial differential equations.

> ## Classical Mechanics

Students will be able to articulate and describe relative motion. Inertial and non-inertial reference frames. Parameters defining the motion of mechanical systems Study of the interaction of forces between solids in mechanical systems. Centre of mass of mechanical systems. Laws of motion and conservation principles. Lagrangian and Hamiltonian formulation.

> ## Electricity and Magnetism

Students will be able to understand the relationship between electrical charge, electrical field, electrical potential, and magnetism. Solve numerical problems involving topics covered. Define the magnetic field and magnetic flux, solve technical problems. Calculate the magnitude and direction of the magnetic field for symmetric current distributions using the Law of Biot-Savart and Ampere's Law. Principles of Electric Fields, Gauss's Law, Electric Potential, Capacitance and Dielectrics, Current and Resistance, Direct Current Circuits, Magnetic Fields, Sources of Magnetic Fields, Faraday's Law, Inductance, Alternating Current Circuits, and Electromagnetic Waves. Solve mathematical problems involving electric and magnetic forces, fields, and various electro-magnetic devices and electric circuits.

> ## Waves and Optics

Students will be able to understand the role of the wave equation and appreciate the universal nature of wave motion. Understand superposition of harmonic waves. Understand interference and diffraction (Fraunhofer and Fresnel diffraction). Understand optical phenomena such as polarization. Through the lab course, understand the principles of measurement and error analysis and develop skills in experimental design.

> ## Statistical and Thermal Physics

Completion of this course will enable the students to know the basics of thermal physics. Make use of different problem solving techniques in the field. Understand the kinetic theory of gases: Maxwell –Boltzmann distribution law, Brownian motion etc. Understand the behavior of real gases. Understand how statistics of the microscopic world can be used to explain the thermal features of the macroscopic world. Use thermal and statistical principles in a wide range of applications. Learn a variety of mathematical techniques. Understand Bose-Einstein and Fermi Dirac statistics.

> ## Digital Electronics and Applications

Completion of this course will enable the students to understand the logical behavior of digital circuits. Understand the advantages and disadvantages of programmable logic devices Know how to describe digital hardware using a software-style language Understand how a basic digital circuit can be built from standard building blocks.

> ### Electromagnetic Theory

Completion of this course will enable the students to apply vector calculus to understand the behavior of static electric and magnetic fields in standard configurations. Describe and analyze electromagnetic wave propagation in free-space. Describe and analyze transmission lines, and understand the basic of fiber optics.

> ### Solid State Physics

Students will have understanding of structures in solids and their determination using XRD. Behavior of electrons in solids including the concept of energy bands and effect of the same on material properties. Magnetic and dielectric properties of solids. Practice problem solving by using selected problems in solid state physics.

> ### Quantum Mechanics

Completion of this course will enable the students to understanding of importance of quantum mechanics compared to classical mechanics at microscopic level. Understand various tools to calculate Eigen values and total angular momentum of particles. Understand Schrodinger's equation for spherical symmetric potential, complete solution of hydrogen atom.Understand atoms in external electric and magnetic field. Learn the mathematical tools needed to solve quantum mechanics problems. This will include complex functions and Hilbert spaces, and the theory of operator algebra. Solutions of ordinary and partial differential equations that arise in quantum mechanics will also be studied.

> ### Nuclear and Particle Physics

Upon completion of the course Students will have understanding of basic properties of nucleus and nuclear models to study the nuclear structure properties. Various aspects of nuclear reactions will give idea how nuclear power can be generated. Nuclear fission and fusion. Basic of elementary particles.

> ### Spectroscopy

Completion of this course will enable the students to understanding of importance of atoms and molecular structure and their behavior of rotation, vibration and their interatomic distances through spectroscopy.

> ### Electronics

Completion of this course will enable the students to understanding of importance of electronic circuits and their working phenomenon. How to get DC from AC. Behaviour of rectification circuits from diodes. Behaviour of Transistors and amplifiers and their working modes. Importance of Feedback circuits. To obtain oscillators to generate desired frequency.

> ### Modern Physics

Completion of this course will enable the students to understanding of importance of modern physics concepts. Einsteins relativity phenomena different from Newtonion Mechanics. Know about the behavior of Plasma, a fourth state of matter and their behavior in electric and magnetic fields. Medical instruments working on the concepts of physics laws. About the sun and its atmosphere.

K S K V Kachchh University
B. Sc. (Physics) NEP-2020 Syllabus
(In force from June 2023)

Semester – I
(For Major Only))(3 Credits)
MAJPHY – 101 General Physics

Unit-I
Mathematical Physics
Scalar Triple product; Reciprocal vector; Vector triple product; Rotational quantities as Vectors; Pseudo Vectors and Pseudo Scalars.

Ref. : Classical Mechanics by Takwale and Puranic
(Chapter 1, Art. 1.11 to1.14 and 1.16)

Differential of a Vector w.r.t. Scalar; Differentiation w.r.t time- Computation of Velocity and acceleration; Integration of Vectors; Partial differentiation; Gradient of a scalar point function; Divergence of a vector.

Ref. : Classical Mechanics by Takwale and Puranic
(Chapter 2, Art. 2.1 to 2.6)

Unit - II
Gravitation
Gravitational field or attraction; Attraction of a system of particles; Gravitational Potential; Potential due to a system of attracting particles; Calculation of potential – Spherical bodies; Velocity of escape; Artificial satellites – (1) Condition to put a satellite into an orbit (2) Period of a satellite revolving round the earth.

Ref.: A Treatise on General Properties of Matter by Chatterjee and Sengupta
(Chapter 7, Art. 7.4 to 7.7, 7.11.1, 7.11.2, 7.24, 7.25, 7.25.1, 7.25.2)

Elasticity
Stress; Strain; Elasticity and plasticity; Elastic modulus; The force constant.

Ref. : University Physics (6th Edition) By sears, Zemansky, and Young
(Chapter 10, Art. 10.1 to 10.5)

Unit – III
Electronics
Semiconductor Diode; Crystal Diode as a rectifier; Resistance of Crystal Diode; Equivalent circuit of Crystal Diode; Crystal Diode equivalent circuit; Important terms; Crystal Diode Rectifiers; Half wave Rectifier; Output frequency of Half wave rectifier'; Efficiency of half wave rectifier; Full wave rectifier; Center-Tap Full wave rectifier; Full wave Bridge rectifier; Output frequency of Bridge rectifier; Efficiency of Full wave rectifier; Faults in Center Tap full wave rectifier; Nature of

Rectifier output; Ripple factor; Comparison of Rectifiers; Filter Circuits; Types of filter circuits;

Ref. : Principles of Electronics by V.K.Mehta and Rohit Mehta (11thEdition) (Chapter 6, Art. 6.1 to 6.21)

MAJPHY – 102 - P PRACTICALS
(For Major))(1 Credit)

1. Find out the least count for given instruments,
    (Vernier Callipers, Micrometer Screw Gauge, Spectrometer)
2. Damping co-efficient, relaxation time and quality factor of a simple Pendulum
3. Calibration of Prism
4. Analysis of error
5. Frequency of A.C. emf by Series resonance
6. P-N junction diode as Half wave rectifier (Without filter and with filter)
7. P-N junction diode characteristic

KSKV Kachchh University: BHUJ
FIRST YEAR B.Sc.: Semester: I (ONE)
SUBJECT: PHYSICS (MAJPHY-101)

Total Marks: 40, Duration: 2 hours 30 min
Passing standard: 16 Marks
PATTERN OF QUESTION PAPER
FOR SEMESTER-END EXAMS

Questions	Section	Marks
Question – 1 Unit – I	*2 questions of 10 Marks, student have to attempt any 1*	10marks
Question – 2 Unit –II	*2 questions of 10 Marks, student have to attempt any 1*	10marks
Question – 3 Unit – III	*2 questions of 10 Marks, student have to attempt any 1*	10marks
Question - 4	**12 short questions of 1 marks,4 questions from each unit and the students have to attempt any 10.**	10Marks

➢ The structure for FIRST THREE question is as under: 30 Marks (10 X 3)

Descriptive type   **10 Marks**

(1) Examiner can ask two questions of 10 Marks each out of which one must be answered, The types of questions are varied, like: Derivations, Short/Long notes, Explain, Deduce, Problems etc.10 marks can be divided into 7+3 or 6+4 marks according to the type of question.
_OR_
(2) Examiner can ask three questions of 05 Marks each out of which two must be answered.

➢ The structure for Fourth question is as under: 10 Marks

Twelve questions from all three units out of which ten questions shall be answered. Each of 01 marks makes total 10 Marks.

The types of questions are varied, like: Definitions, Reasoning, Explain, Brief, Drawing figures, Multiple choice answers, etc.

(MAJPHY-102-P) PHYSICS PRACTICAL

There will be FOUR Exercises in each Practical, as under, total of **15 Marks.**

(1) Approach (4 marks) (2) Readings and Calculations (5 marks) (3) Viva (4 marks)

(4) Practical Journal (2 marks)

Duration of the exam: 2 Hrs. Passing standard: **6 Marks out of 15 Marks.**

Semester – I
(For Major Only))(3 Credits)

MAJPHY – 103 Classical Physics, Thermodynamics, Statistical Mechanics

Unit –I
Classical Mechanics
Newton's laws of motion; Mechanics of a particle; Equation of motion of a
Particle (a) Motion under constant force (b) Motion under a force which depends on
time (d) Motion of a particle subjected to a resistive force (Example 1 & 2)

Ref. : Classical Mechanics by Takwale and Puranic
(Chapter 3, Art. 3.1 to 3.3(a,b,d with examples 1, 2))

Simple Harmonic Motion
Combination of two SHMs perpendicular to each other (Graphical and algebraic
method) with equal time periods and various phase differences; Lissajous figures,
Demo and uses.
Ref. Concept of Physics by H.C. Verma(12.11)

Unit-II
Thermodynamics
Second law of Thermodynamics; Carnot's reversible engine; Carnot's engine and
refrigerator; Carnot's theorem; Thermodynamic scale of temperature; Entropy and
second law of thermodynamics; Entropy changes of closed systems; Entropy;
Change in entropy in a reversible process; Change in entropy in irreversible Process;
Third law of thermodynamics; Temperature –Entropy diagram.

Ref. : Heat and Thermodynamics by- Brijlal and subrahmanyam
(Chapter 6, Art. 6.25 to 6.29, 6.42 to 6.48)

Unit-III
Statistical Mechanics
Statistical Basis; Probability; Principle of Equal A Priori Probability; Probability and
Frequency; Some Basic Rules of Probability Theory; Permutations and
Combinations; Macrostate and Microstate; Thermodynamic Probability.

Fluctuation and there dependence on n, Constraints on a system, Static and Dynamic
systems, Most Probable state.

Ref. : Heat and Themodynamics and Statistical Physics by Brijlal, Subrahmanyam, Hemme. S. Chand & Company (Reprint 2012)
   (Chapter 9, Art. 9.1 to 9.8; 9.9 to 9.12

MAJPHY – 104 - P PRACTICALS
(For Major Only))(1 Credit)

1. P-N junction diode as Full wave rectifier (Without filter and with filter)
2. Melde's Experiment
3. Deflection magnetometer
4. Refractive index of liquid using parallax method
5. Moment of inertia of a Flywheel
6. Find out the Most probable, average and rms values from the given data.
7. Value of capacitance.

KSKV Kachchh University: BHUJ

FIRST YEAR B.Sc.: Semester: I (ONE)
SUBJECT: PHYSICS (MAJPHY-103)

Total Marks: 40, Duration: 2 hours 30 min
Passing standard: 16 Marks
PATTERN OF QUESTION PAPER
FOR SEMESTER-END EXAMS

Questions	Section	Marks
Question – 1 Unit – I	*2 questions of 10 Marks, student have to attempt any 1*	10marks
Question – 2 Unit –II	*2 questions of 10 Marks, student have to attempt any 1*	10marks
Question – 3 Unit – III	*2 questions of 10 Marks, student have to attempt any 1*	10marks
Question - 4	**12 short questions of 1 marks,4 questions from each unit and the students have to attempt any 10.**	**10Marks**

➢ The structure for FIRST THREE question is as under: 30 Marks (10 X 3)

Descriptive type   **10 Marks**

(1) Examiner can ask two questions of 10 Marks each out of which one must be answered, The types of questions are varied, like: Derivations, Short/Long notes, Explain, Deduce, Problems etc.10 marks can be divided into 7+3 or 6+4 marks according to the type of question.
__OR__
(2) Examiner can ask three questions of 05 Marks each out of which two must be answered.

➢ The structure for Fourth question is as under: 10 Marks

Twelve questions from all three units out of which ten questions shall be answered. Each of 01 marks makes total 10 Marks.

The types of questions are varied, like: Definitions, Reasoning, Explain, Brief, Drawing figures, Multiple choice answers, etc.

(MAJPHY-104-P) PHYSICS PRACTICAL

There will be FOUR Exercises in each Practical, as under, total of **15 Marks.**

(1) Approach (4 marks) (2) Readings and Calculations (5 marks) (3) Viva (4 marks)

(4) Practical Journal (2 marks)

Duration of the exam: 2 Hrs. Passing standard: **6 Marks out of 15 Marks.**

Semester – I
(For Minor Only))(3 Credits)
MINPHY – 105 General Physics

Unit-I
Mathematical Physics
Scalar Triple product; Reciprocal vector; Vector triple product; Rotational quantities as Vectors; Pseudo Vectors and Pseudo Scalars.

Ref. : Classical Mechanics by Takwale and Puranic
(Chapter 1, Art. 1.11 to1.14 and 1.16)

Differential of a Vector w.r.t. Scalar; Differentiation w.r.t time- Computation of Velocity and acceleration; Integration of Vectors; Partial differentiation; Gradient of a scalar point function; Divergence of a vector.

Ref. : Classical Mechanics by Takwale and Puranic
(Chapter 2, Art. 2.1 to 2.6)

Unit - II
Gravitation
Gravitational field or attraction; Attraction of a system of particles; Gravitational Potential; Potential due to a system of attracting particles; Calculation of potential – Spherical bodies; Velocity of escape; Artificial satellites – (1) Condition to put a satellite into an orbit (2) Period of a satellite revolving round the earth.

Ref.: A Treatise on General Properties of Matter by Chatterjee and Sengupta
(Chapter 7, Art. 7.4 to 7.7, 7.11.1, 7.11.2, 7.24, 7.25, 7.25.1, 7.25.2)

Elasticity
Stress; Strain; Elasticity and plasticity; Elastic modulus; The force constant.

Ref. : University Physics (6th Edition) By sears, Zemansky, and Young
(Chapter 10, Art. 10.1 to 10.5)

Unit – III
Electronics
Semiconductor Diode; Crystal Diode as a rectifier; Resistance of Crystal Diode; Equivalent circuit of Crystal Diode; Crystal Diode equivalent circuit; Important terms; Crystal Diode Rectifiers; Half wave Rectifier; Output frequency of Half wave rectifier'; Efficiency of half wave rectifier; Full wave rectifier; Center-Tap Full wave rectifier; Full wave Bridge rectifier; Output frequency of Bridge rectifier; Efficiency of Full wave rectifier; Faults in Center Tap full wave rectifier; Nature of

Rectifier output; Ripple factor; Comparison of Rectifiers; Filter Circuits; Types of filter circuits;

Ref. : Principles of Electronics by V.K.Mehta and Rohit Mehta (11thEdition) (Chapter 6, Art. 6.1 to 6.21)

<u>MINPHY – 106 - P PRACTICALS</u>
<u>(For Minor))(1 Credit)</u>

1. Find out the least count for given instruments,
   (Vernier Callipers, Micrometer Screw Gauge, Spectrometer)
2. Damping co-efficient, relaxation time and quality factor of a simple Pendulum
3. Calibration of Prism
4. Analysis of error
5. Frequency of A.C. emf by Series resonance
6. P-N junction diode as Half wave rectifier (Without filter and with filter)
7. P-N junction diode characteristic

KSKV Kachchh University: BHUJ

FIRST YEAR B.Sc.: Semester: I (ONE)
SUBJECT: PHYSICS (MINPHY-105)

Total Marks: 40, Duration: 2 hours 30 min
Passing standard: 16 Marks
PATTERN OF QUESTION PAPER
FOR SEMESTER-END EXAMS

Questions	Section	Marks
Question – 1 Unit – I	*2 questions of 10 Marks, student have to attempt any 1*	10marks
Question – 2 Unit –II	*2 questions of 10 Marks, student have to attempt any 1*	10marks
Question – 3 Unit – III	*2 questions of 10 Marks, student have to attempt any 1*	10marks
Question - 4	12 short questions of 1 marks,4 questions from each unit and the students have to attempt any 10.	10Marks

> The structure for FIRST THREE question is as under: 30 Marks (10 X 3)

Descriptive type   **10 Marks**

(1) Examiner can ask two questions of 10 Marks each out of which one must be answered, The types of questions are varied, like: Derivations, Short/Long notes, Explain, Deduce, Problems etc.10 marks can be divided into 7+3 or 6+4 marks according to the type of question.
<u>OR</u>
(2) Examiner can ask three questions of 05 Marks each out of which two must be answered.

> The structure for Fourth question is as under: 10 Marks

Twelve questions from all three units out of which ten questions shall be answered. Each of 01 marks makes total 10 Marks.

The types of questions are varied, like: Definitions, Reasoning, Explain, Brief, Drawing figures, Multiple choice answers, etc.

(MINPHY-106-P) PHYSICS PRACTICAL

There will be FOUR Exercises in each Practical, as under, total of **15 Marks.**

(1) Approach (4 marks) (2) Readings and Calculations (5 marks) (3) Viva (4 marks)

(4) Practical Journal (2 marks)

Duration of the exam: 2 Hrs. Passing standard: **6 Marks out of 15 Marks.**

Semester – I
(For Multi Disciplinary Only))(3 Credits)
MDCPHY – 107 General Physics

Unit-I
Mathematical Physics
Scalar Triple product; Reciprocal vector; Vector triple product; Rotational quantities as Vectors; Pseudo Vectors and Pseudo Scalars.

Ref. : Classical Mechanics by Takwale and Puranic
(Chapter 1, Art. 1.11 to1.14 and 1.16)

Differential of a Vector w.r.t. Scalar; Differentiation w.r.t time- Computation of Velocity and acceleration; Integration of Vectors; Partial differentiation; Gradient of a scalar point function; Divergence of a vector.

Ref. : Classical Mechanics by Takwale and Puranic
(Chapter 2, Art. 2.1 to 2.6)

Unit - II
Gravitation
Gravitational field or attraction; Attraction of a system of particles; Gravitational Potential; Potential due to a system of attracting particles; Calculation of potential – Spherical bodies; Velocity of escape; Artificial satellites – (1) Condition to put a satellite into an orbit (2) Period of a satellite revolving round the earth.

Ref.: A Treatise on General Properties of Matter by Chatterjee and Sengupta
(Chapter 7, Art. 7.4 to 7.7, 7.11.1, 7.11.2, 7.24, 7.25, 7.25.1, 7.25.2)

Elasticity
Stress; Strain; Elasticity and plasticity; Elastic modulus; The force constant.

Ref. : University Physics (6th Edition) By sears, Zemansky, and Young
(Chapter 10, Art. 10.1 to 10.5)

Unit – III
Electronics
Semiconductor Diode; Crystal Diode as a rectifier; Resistance of Crystal Diode; Equivalent circuit of Crystal Diode; Crystal Diode equivalent circuit; Important terms; Crystal Diode Rectifiers; Half wave Rectifier; Output frequency of Half wave rectifier'; Efficiency of half wave rectifier; Full wave rectifier; Center-Tap Full wave rectifier; Full wave Bridge rectifier; Output frequency of Bridge rectifier; Efficiency of Full wave rectifier; Faults in Center Tap full wave rectifier; Nature of

Rectifier output; Ripple factor; Comparison of Rectifiers; Filter Circuits; Types of filter circuits;

Ref. : Principles of Electronics by V.K.Mehta and Rohit Mehta (11thEdition) (Chapter 6, Art. 6.1 to 6.21)

<u>MDCPHY – 108 - P PRACTICALS</u>
<u>(For Multi Disciplinary) (1 Credit)</u>

1. Find out the least count for given instruments,
   (Vernier Callipers, Micrometer Screw Gauge, Spectrometer)
2. Damping co-efficient, relaxation time and quality factor of a simple Pendulum
3. Calibration of Prism
4. Analysis of error
5. Frequency of A.C. emf by Series resonance
6. P-N junction diode as Half wave rectifier (Without filter and with filter)
7. P-N junction diode characteristic

KSKV Kachchh University: BHUJ

FIRST YEAR B.Sc.: Semester: I (ONE)
SUBJECT: PHYSICS (M DCPHY-107)

Total Marks: 40, Duration: 2 hours 30 min
Passing standard: 16 Marks
PATTERN OF QUESTION PAPER

FOR SEMESTER-END EXAMS

Questions	Section	Marks
Question – 1 Unit – I	*2 questions of 10 Marks, student have to attempt any 1*	10marks
Question – 2 Unit –II	*2 questions of 10 Marks, student have to attempt any 1*	10marks
Question – 3 Unit – III	*2 questions of 10 Marks, student have to attempt any 1*	10marks
Question - 4	**12 short questions of 1 marks,4 questions from each unit and the students have to attempt any 10.**	**10Marks**

➢ The structure for FIRST THREE question is as under: 30 Marks (10 X 3)

Descriptive type   **10 Marks**

(1) Examiner can ask two questions of 10 Marks each out of which one must be answered, The types of questions are varied, like: Derivations, Short/Long notes, Explain, Deduce, Problems etc.10 marks can be divided into 7+3 or 6+4 marks according to the type of question.
OR
(2) Examiner can ask three questions of 05 Marks each out of which two must be answered.

➢ The structure for Fourth question is as under: 10 Marks
Twelve questions from all three units out of which ten questions shall be answered. Each of 01 marks makes total 10 Marks.

The types of questions are varied, like: Definitions, Reasoning, Explain, Brief, Drawing figures, Multiple choice answers, etc.

(MDCPHY-108-P) PHYSICS PRACTICAL

There will be FOUR Exercises in each Practical, as under, total of **15 Marks.**

(1) Approach (4 marks) (2) Readings and Calculations (5 marks) (3) Viva (4 marks)

(4) Practical Journal (2 marks)

Duration of the exam: 2 Hrs. Passing standard: **6 Marks out of 15 Marks.**