Department of Higher Education, Government of Madhya Pradesh

Under Graduate (UG) Semester-wise Syllabus as Recommended by Central Board of Studies and Approved by Governor of M.P.

(w.e.f. session 2014-2015)

उच्च शिक्षा विभाग, मध्यप्रदेश शासन

स्नातक कक्षाओं के लिए सेमेस्टर अनुसार एकल प्रश्नपत्र प्रणाली का पाठ्यक्रम केन्द्रीय अध्ययन मण्डल द्वारा अनुशंसित तथा मध्यप्रदेश के राज्यपाल द्वारा अनुमोदित

(शैक्षणिक सत्र 2014-2015 से लागू)

Class: B.Sc.

Semester : **I**
Subject : **Physics**

List of Practicals

For Regular Students

Practical	Sessional	Viva	Total
25	10	15	50

For Ex – Student

Practical	Sessional	Viva	Total
35	00	15	50

1. To verify laws of parallel and perpendicular axes for moment of inertia.
2. To determine acceleration due to gravity using compound pendulum.
3. To determine damping coefficient using a bar pendulum.
4. To determine Young's Modulus by bending of beam method.
5. To determine Young's Modulus using Cantilever method.
6. To determine coefficient of rigidity by static method.
7. To determine coefficient of rigidity by dynamic method.
8. To determine Surface Tension by Jaegar's method.
9. To determine Surface Tension of a liquid by capillary rise method.
10. To determine Viscosity of fluid using Poisellie's method.
11. To plot displacement/velocity/acceleration as a function of time using M.S. Excel or C++.
12. To plot gravitational energy as a function of distance between two particles with different masses using M.S. Excel or C++.

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उच्च शिक्षा विभाग, मध्यप्रदेश शासन

स्नातक कक्षाओं के लिए सेमेस्टर अनुसार एकल प्रश्नपत्र प्रणाली का पाठ्यक्रम केन्द्रीय अध्ययन मण्डल द्वारा अनुशंसित तथा मध्यप्रदेश के राज्यपाल द्वारा अनुमोदित

(शैक्षणिक सत्र 2014-2015 से लागू)

Class: B.Sc.

Semester : **II**
Subject : **Physics**

List of Practicals

For Regular Students

Practical	Sessional	Viva	Total
25	10	15	50

For Ex–Student

Practical	Sessional	Viva	Total
35	00	15	50

1. To study conversion of mechanical energy into heat using Calender & Barne's method.
2. To determine heating efficiency of electrical Kettle with various voltages.
3. To determine heating temperature coefficient of resistance using platinum resistance thermometer.
4. To determine thermo electromotive force by a thermocouple method.
5. To determine heating efficiency of electrical Kettle with various voltages.
6. To determine heat conductivity of bad conductors of different geometry by Lee's method.
7. To verify Newton's Laws of cooling.
8. To determine specific heat of Coefficient of thermal conductivity by Searl's method.
9. To determine specific heat of a liquid.
10. To compare Maxwell-Boltzmann, Bose Einstein and Fermi-Dirac Distribution function vs temperature using M.S. Excel / C++.
11. To plot equation of state and Vander-wall equation with temperature using M.S. Excel / C++.

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(w.e.f. session 2015-2016)

उच्च शिक्षा विभाग, मध्यप्रदेश शासन

स्नातक कक्षाओं के लिए सेमेस्टर अनुसार एकल प्रश्नपत्र प्रणाली का पाठ्यक्रम केन्द्रीय अध्ययन मण्डल द्वारा अनुशंसित तथा मध्यप्रदेश के राज्यपाल द्वारा अनुमोदित

(शैक्षणिक सत्र 2015-2016 से लागू)

Class: B.Sc.

Semester : **III**
Subject : **Physics**

For Regular Students

Practical	Sessional	Viva	Total
25	10	15	50

For Ex–Student

Practical	Sessional	Viva	Total
35	00	15	50

List of Experiments:

1. Study of interference using biprism.
2. Study of diffraction at straight edge.
3. Use of plane diffraction grating to determine D_1, D_2 lines of Sodium lamp.
4. Resolving power of telescope.
5. Polarization by reflection and verification of Brewster's Law.
6. Study of optical rotation in Sugar solution.
7. Refractive index and dispersive power of prism using spectrometer.
8. Absorption spectrum of material using constant deviation spectrograph.
9. Beam divergence of He-Ne Laser.
10. Determination of wavelength of Laser by diffraction.
11. Determination of radius of curvature of plano-convex lense by Newton's rings.

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उच्च शिक्षा विभाग, मध्यप्रदेश शासन

स्नातक कक्षाओं के लिए सेमेस्टर अनुसार एकल प्रश्नपत्र प्रणाली का पाठ्यक्रम केन्द्रीय अध्ययन मण्डल द्वारा अनुशंसित तथा मध्यप्रदेश के राज्यपाल द्वारा अनुमोदित

(शैक्षणिक सत्र 2015-2016 से लागू)

Class: B.Sc.

Semester : **IV**

Subject : **Physics**

For Regular Students

Practical	Sessional	Viva	Total
25	10	15	50

For Ex–Student

Practical	Sessional	Viva	Total
35	00	15	50

List of Experiments:

1. Characteristics of a Ballistic galvanometer.
2. Setting up and using an electroscope or electrometer.
3. Measurement of low resistance by Carey-Foster bridge or otherwise.
4. Measurement of inductance using impedance at different frequencies.
5. Measurement of capacitance using, impedance at different frequencies.
6. Response curve for LCR circuits and response frequencies.
7. Sensitivity of a cathode- ray oscilloscope.
8. Use of a vibration magnetometer to study a field.
9. Study of Magnetic field due to current using Tangent Galvanometer.
10. Study of decay of currents in LR and RC circuits.
11. Study of Lissajous figures using CRO.

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Under Graduate (UG) Semester-wise Syllabus as Recommended by Central Board of Studies and Approved by Governor of M.P.

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उच्च शिक्षा विभाग, मध्यप्रदेश शासन

स्नातक कक्षाओं के लिए सेमेस्टर अनुसार एकल प्रश्नपत्र प्रणाली का पाठ्यक्रम केन्द्रीय अध्ययन मण्डल द्वारा अनुशंसित तथा मध्यप्रदेश के राज्यपाल द्वारा अनुमोदित

(शैक्षणिक सत्र 2016-2017 से लागू)

Class: B.Sc.

Semester : **V**
Subject : **Physics**

For Regular Students

Practical	Sessional	Viva	Total
25	10	15	50

For Ex–Student

Practical	Sessional	Viva	Total
35	00	15	50

List of Experiments:

1. Determination of Planck's constant.
2. Determination of **e**/m using Thomson's method.
3. Determination of **e** by Millikan's method.
4. Study of spectra of hydrogen and deuterium (Rydberg constant and ratio of masses of electron to proton).
5. Absorption spectrum of iodine vapour.
6. Study of alkali or alkaline earth spectra using concave grating.
7. Study of Zeeman effect for determination of Lande g-factor.
8. Study of Raman spectrum using laser as an excitation source.
9. Calculation of energy states of Hydrogen and Deuterium.
10. To draw B-H curve of ferro-magnetic material with the help of CRO.
11. Study of half wave and full wave rectification.

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(w.e.f. session 2016-2017)

उच्च शिक्षा विभाग, मध्यप्रदेश शासन

स्नातक कक्षाओं के लिए सेमेस्टर अनुसार एकल प्रश्नपत्र प्रणाली का पाठ्यक्रम केन्द्रीय अध्ययन मण्डल द्वारा अनुशंसित तथा मध्यप्रदेश के राज्यपाल द्वारा अनुमोदित

(शैक्षणिक सत्र 2016-2017 से लागू)

Class: B.Sc.

Semester : **VI**

Subject : **Physics**

For Regular Students

Practical	Sessional	Viva	Total
25	10	15	50

For Ex–Student

Practical	Sessional	Viva	Total
35	00	15	50

List of Experiments:

1. Characteristic of a transistor.
2. Characteristic of a tunnel diode.
3. Hysteresis curve a transformer core.
4. Hall probe method for measurement of resistivity.
5. Specific resistance and energy gap of a semiconductor.
6. Study of regulated power supply.
7. Study of RC coupled amplifiers
8. Analysis of a given band spectrum.
9. Study of crystal faces.
10. Characteristics of Zener diode.
11. Charging and discharging of capacitor.