

Dr. Babasaheb Ambedkar Marathwada University

Faculty of Science

B.Sc. I year Practical Examination

March / April 2009

PHYSICS

Paper - III

Time: 3 hours

Marks: 100

Expt. No. 1

Determine acceleration due to gravity by Kater's pendulum

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max Marks	Marks Obtained
1.	Procedure	20	
2.	Proper tabulation with necessary observation	25	
3.	Calculation	20	
4.	Results & Units	10	
5.	Oral	15	
6.	Record Book	10	
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Paper - III

Time: 3 hours

Marks: 100

Expt. No. 2

Determine Young's modulus of a given beam 'Y' by bending of a beam loaded at the center

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Measurement of thickness & breadth	10	
2.	Observation with proper tabular form	25	
3.	Calculation & Graph	30	
4.	Results & Units	10	
5.	Oral	15	
6.	Record Book	10	
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Paper - III

Time: 3 hours

Marks: 100

Expt. No. 3

Determine Young's modulus 'Y' by Cantilever (Oscillation method)

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Procedure & adjustment	10	
2.	Proper tabulation with necessary Observation	30	
3.	Calculation & Graph	25	
4.	Results & Units	10	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper - III

Time: 3 hours

Marks: 100

Expt. No. 4

Determine M.I. of a given body using Bifilar Suspension

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Procedure & adjustment	10	
2.	Proper tabulation with necessary Observation	30	
3.	Calculation of M.I	25	
4.	Results & Units (Verification)	10	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper - III

Time: 3 hours

Marks: 100

Expt. No. 5 Determine the M.I. of a Fly-wheel

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Procedure, adjustment and diameter of axle	10	
2.	Proper tabulation with necessary Observation for n_2 & mass m	30	
3.	Calculation of M.I.	30	
4.	Results & Units	05	
5.	Oral	15	
6.	Record Book	10	

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Paper - III

Time: 3 hours

Marks: 100

Expt. No. 6 Determine the S.T. of a given **liquid** by using Jaeger's Method

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Procedure, adjustment and determination of diameter of bore of Capillary tube	15	
2.	Proper tabulation with necessary observation for three different depth	25	
3.	Calculation	25	
4.	Results & Units	10	
5.	Oral	15	
6.	Record Book	10	

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Paper - III

Time: 3 hours

Marks: 100

Expt. No. 7: Determine Coefficient of Viscosity ' η ' of a liquid by Poiseulle's Method.

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Procedure, adjustment and determination of diameter of bore of a capillary tube	15	
2.	Proper tabulation with necessary observation for height of the liquid collected per second	30	
3.	Calculation of ' η '	20	
4.	Results & Units	10	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper - III

Time: 3 hours

Marks: 100

Expt. No. 8 Determine thermal Conductivity 'K' of a bad conductor by Lees Disk Method

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Procedure, adjustment and determination of thickness & radius of bad conductor	10	
2.	Proper tabulation with necessary observation	35	
3.	Calculation	20	
4.	Results & Units	10	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper - III

Time: 3 hours

Marks: 100

Expt. No. 9 Determine thermal Conductivity 'K' of a rubber tube

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Procedure, adjustment and measurement of radius	10	
2.	Proper tabulation with necessary observation	35	
3.	Calculation	20	
4.	Results & Units	10	
5.	Oral	15	
6.	Record Book	10	

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PHYSICS

Paper - III

Time: 3 hours

Marks: 100

Expt. No. 10

Aim : To study temperature dependence of total radiation by plotting
Calibration curve

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Procedure, adjustment & necessary circuit diagram	25	
2.	Proper tabulation with necessary observation	20	
3.	Calculation	20	
4.	Results & graph	10	
5.	Oral	15	
6.	Record Book	10	

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PHYSICS

Paper - III

Time: 3 hours

Marks: 100

Expt. No. 11.

Aim: Measurement of thermo emf using potentiometer

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Procedure, adjustment and necessary circuit diagram	20	
2.	Proper tabulation with necessary observation for different temperatures	30	
3.	Calculation and graph	15	
4.	Results & Units	10	
5.	Oral	15	
6.	Record Book	10	

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Paper - III

Time: 3 hours

Marks: 100

Expt. No. 12 Determine temperature coefficient of thermister / resistance
by using Carry-Foster's bridge.

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Procedure, adjustment & necessary circuit diagram	25	
2.	Proper tabulation with necessary observation for balancing length at different temperatures	25	
3.	Calculation	15	
4.	Results & Units	10	
5.	Oral	15	
6.	Record Book	10	

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PHYSICS

Paper - III

Time: 3 hours

Marks: 100

Expt. No. 13

Determine rigidity modulus ' η ' by Maxwell Needle.

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Procedure and adjustment and	20	
2.	Proper tabulation with necessary observation	25	
3.	Calculation	20	
4.	Results & Units	10	
5.	Oral	15	
6.	Record Book	10	

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PHYSICS

Paper - III

Time: 3 hours

Marks: 100

Expt. No. 14 To study the experimental Statistical Probability for two option system using a coin.

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Procedure and adjustment	15	
2.	Proper tabulation with necessary observation	30	
3.	Calculation	20	
4.	Results & Units	10	
5.	Oral	15	
6.	Record Book	10	

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PHYSICS

Paper- IV

Time: 3 hours

Marks: 100

Expt. No.1 - Find unknown wavelength by plotting calibration curve between δ & λ
(calibration of spectrometer.)

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1)	Schuster's Method	15	
2)	Observation for angle of deviation for mercury spectra (wavelengths given)	30	
3.	Calibration curve	20	
4.	Calculation & Results	10	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper- IV

Time: 3 hours

Marks: 100

Expt. NO.2 Determine dispersive power of a prism

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Schuster's Method	15	
2	Observation for angle of deviation for different colours	25	
3.	Angle of prism	10	
4.	Calculation & Results	25	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper - IV

Time: 3 hours

Marks: 100

Expt. No.3 **Using Hartmann's dispersion formula find unknown λ wavelength**

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max Marks	Marks Obtained
1.	Schuster's Method	15	
2.	Observation for angle of deviation for mercury spectra (wavelengths given) determine angle of minimum deviation for unknown spectral lines	25	
3.	Calculation for constants A,B & λ_0	20	
4.	Calculation & Results	15	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper- IV

Time: 3 hours

Marks: 100

Expt. NO. 4

Determine Cauchy's constant using Spectrometer

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Schuster's Method	15	
2.	Observation for angle of deviation for different mercury spectra	20	
3.	Calculation of refractive index	15	
4.	Calculation, graph & Results	25	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper- IV

Time: 3 hours

Expt. No. 5

Scheme of Marking

Determine R.P. of a Telescope

Marks: 100

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Distance between two successive wires of guage using traveling microscope	15	
2.	Calculate the critical width of a slit to resolve for just appear and disappear Take observations for <u>at least two distances between guage & telescope</u>	30	
3.	Calculation of R.P.	15	
4.	Verification of Results	15	
5.	Oral	15	
6.	Record Book	<u>10</u>	
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PHYSICS

Paper- IV

Time: 3 hours

Expt. NO. 6

Scheme of Marking

Determine R.P. of a grating using spectrometer

Marks: 100

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Schuster's Method	15	
2.	Adjustment of gating for normal incidence.	10	
3.	Observation for angle of diffraction for Yellow lines also find the critical width. Take observation for 1st & 11nd order spectra	30	
4.	Calculation & Results for R.P.	20	
5.	Oral	15	
6.	Record Book	<u>10</u>	
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PHYSICS

Paper- IV

Time: 3 hours

Marks: 100

Expt. No.7

Determine the angle of divergence of Laser beam

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Adjustment of laser beam	20	
2.	Observation in proper tabular form	25	
3.	Calculation	20	
4.	Results	10	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper- IV

Time: 3 hours

Marks: 100

Expt. NO . 8

Determine the wavelength of Laser beam

Study of laser as a monochromatic source using spectrometer

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Schuster's Method	15	
2.	Observation for angle of minimum deviation for mercury spectral lines	30	
3.	Observation for angle of minimum deviation for laser wavelength	10	
4.	Calibration graph ($\lambda - \delta_m$) and result for wavelength of laser beam	20	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper- IV

Time: 3 hours

Marks: 100

Expt. No. 9 **To study I-V Characteristics of Solar cell**

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Circuit diagram	20	
2.	Connection and necessary observations	30	
3.	Graph	15	
4.	Result	10	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper- IV

Time: 3 hours

Marks: 100

Expt. NO 10

Aim: Characteristics of transistor in CE configuration & determination of ex: α and β

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Circuit diagram	15	
2.	Connection & necessary observation	30	
3.	Graph	15	
4.	Calculation for α and β	15	
5.	Oral	15	
6.	Record Book	10	
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Paper- IV

Time: 3 hours

Marks: 100

Expt. No. 11

Aim: To find all even / odd numbers between given limits

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max. Marks	Marks Obtained
1.	Flow charts	20	
2.	Program	30	
3.	Feed the program	15	
4.	Results & printout	10	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper- IV

Time: 3 hours

Marks: 100

Expt. NO 12

Aim: To find maximum minimum and range of a given set of numbers

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max Marks	Marks Obtained
1.	Flow charts	20	
2.	Program	30	
3.	Feed the program	15	
4.	Resu lts & printout	10	
5.	Oral	15	
6.	Record Book	10	
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PHYSICS

Paper- IV

Time: 3 hours

Marks: 100

Expt. No. 13

Aim: To find the roots of quadratic equation

Scheme of Marking

Sr.No	Different heads of Distribution of marks	Max Marks	Marks Obtained
1.	Flow charts	20	
2.	Program	30	
3.	Feed the program	15	
4.	Results & printout	10	
5.	Oral	15	
6.	Record Book	10	
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