

20KU05A

Candidate Code

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Date and time of exam

Name and signature of candidate

UNIVERSITY OF KERALA

FOURTH SEMESTER M.Sc. PHYSICS PRACTICAL EXAMINATION AUGUST-2020

Time: 6 Hours

PH 261 ADVANCED PHYSICS

Max. Marks 75

(Attempt the marked questions)

SECTION A (55 Marks)

1. Measure the hall voltage developed in the specimen given and calculate the Hall coefficient of the material.
2. Determine the magnetic susceptibility of the given sample using Quincke's Method.
3. Find the specific charge of electron by Thomson's method in Non-uniform magnetic field. Verify the result by repeat the experiment in Earth's magnetic field.
4. Find the band gap energy of Ge/Si by measuring the current through the diode.
5. Calculate the fermi energy of Cu experimentally by measuring resistance / resistivity at different temperatures.

SECTION B (20 Marks)

1. Determine the band gap of the given material from UV-Visible spectrum.
2. From the given data of molecular spectrum, find the rotational and vibration constants.
3. Construct Deslandress table using the given Data of band heads and hence calculate the anharmonicity factors of the ground and excited states
4. Analyze absorption spectrum of iodine vapour and determine the dissociation energy for ground and excited state.
5. Using the data of X-ray diffraction, find the lattice constant of the crystal and identify the crystal lattice.

FOR THE USE OF EXAMINERS ONLY

PART A Advanced Physics	Marks awarded	Max Marks	PART A Spectroscopic expts.	Marks awarded	Max. Marks
Brief theory and formula		10	For clear photo		20
Viva-voce conducted during the examination		5	Theory and formula		20
Observation and tabulation		10	Calculation		10
Calculation and graph		10	Result and Discussion		5
Skill in performance		5	TOTAL		55
Result and discussion		3	PART B Data analysis	Marks awarded	Max. marks
Error analysis		2	Calculation		15
Record		10	Result and discussion		5
Total		55	Total		20

REMARKS/COMMENTS:

Name and signature of Examiners:

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