B.Sc. DEGREE EXAMINATION,APRIL 2020
II Year IV Semester
Atomic Physics

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. Give the unit of electrical conductivity.
2. What nature of electron is used in electron microscope?
3. What are positive rays?
4. What is a velocity selector?
5. State intensity rule.
6. What is interval rule.
7. What do we infer by measuring stopping potential?
8. Define threshold frequency.
9. How are X-rays produced?
10. State Bragg's law.
11. What is an optical spectrum?
12. Mention one application of photo-emissive cell.

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Describe Millikan's oil drop method.
14. Mention the properties of positive rays.
15. Discuss about the D lines in sodium spectrum.
16. Explain the working of photoconductive cell with diagram.
17. Give the construction of Bragg's X-ray spectrometer.
18. Derive the relation between electrical and thermal conductivities.
19. How are Laue spots obtained and what are their significance?

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Explain the working of electron microscope with a diagram.
21. Describe the working of Bain bridge mass spectrometer with a Neat diagram.
22. Discuss about the normal Zeeman effect with the neat diagram.
23. Discuss the experimental verification of Einstein's photoelectric equation by Millikan's experiment.
24. Explain the method of producing X-rays using Coolidge tube.

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