B.Sc. DEGREE EXAMINATION,APRIL 2019
II Year IV Semester
Atomic Physics

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

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

Answer any **TEN** questions

1. State electrical conductivity.
2. Give the uses of electron microscope.
3. What are positive rays?
4. Mention the uses of mass spectrograph.
5. Write the selection rules.
6. What is optical spectra?
7. Mention any two applications of photoelectric cells.
8. State photoelectric effect.
9. Write the properties of X-rays.
10. State Braggs law.
11. How does a photoconductive cell work?
12. Give the expression for thermal conductivity.

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

Answer any **FIVE** questions

13. Discuss about the free electron theory of metals.
14. Explain the Thomson parabola method.
15. Write a note on the fine structure of sodium D lines.
16. State and explain the laws of photo electric emission.
17. Write notes on powder crystal method.
18. Discuss about the production of X-rays.
19. Explain the working of photo voltaic cell.

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

Answer any **THREE** questions

20. Discuss in detail Millikans oil drop method for the determination of electric charge.
21. Explain in detail the construction and working of Bain bridge mass spectrograph.
22. Define Zeeman Effect and explain the experimental arrangement for normal Zeeman Effect.
23. Describe Millikans experiment to verify Einsteins photoelectric equation.
24. Discuss in detail about Braggs X-ray spectrophotometer.

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