Printing Page(s) : 1 **Paper Code :DSC-303**

Roll No. | | | | | | | | | | |

B.Sc(PCM)-19

3rd Year Examination, Calendar Batch 2015

Physics-V (Atomic and Nuclear Physics)

Time : 3 Hours] *[Max. Marks : 100*

***Note**. Attempt any **five** questions. Each questions carry equal marks.*

Q.No.1 What are magic numbers? How does the shell model explain the magic numbers and the total nuclear angular momenta.

Q.No.2 Explain G.M. counter an d explain its working.

Q.No.3 Describe the experiment of Davisson and Germer for the verification of de-Broglie equation.

Q.No.4 Discuss L-S coupling and J-J coupling in multielectron atom. Show that both couplings result into the same terms.

Q.No.5 Give Bohr's postulates and obtain the expression for the energy of hydrogen atom. Draw energy level diagram and give shortcomings of Bohr's theory.

Q.No.6 Discuss the fine structure of infra-red bands of diatomic molecules. Why are the all degraded towards red?

Q.No.7 Explain Frank and Hertz experiment to show that it provides a direct evidence for discrete energy states of an atom.

Q.No.8 What are molecular spectra? Explain different types of molecular spectra.