

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.

B.Sc. END SEMESTER EXAMINATION APRIL/NOV - 2021

SEMESTER - V

13UPHCT5011 & UPH/CT/5011 - Nuclear Physics

Total Duration : 3 Hrs	Total Marks : 75
MCQ : 30 Mins	MCQ : 15
Descriptive : 2 Hrs.30 Mins	Descriptive : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. What is parity, odd parity and even parity?
2. How are β -rays emitted from a nucleus, when it does not contain electrons?
3. Briefly explain the working of linear accelerator.
4. Distinguish between ionisation chamber and G.M counter.
5. Explain the origin of cosmic rays.
6. Give salient features of shell model.
7. What are the properties needed to have a good scintillator?
8. Briefly write a note on elementary particle quantum numbers.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Describe Hofstadter method for measuring nuclear radius.
10. Compare and contrast briefly the properties of α , β , and γ -rays.
11. Discuss the construction and working of proton synchrotron with neat diagram.
12. Give the principle, construction and working of bubble chamber.
13. Discuss in detail about the quantum numbers in elementary particle.