

42021

M. Sc. (Physics) 4th Semester
Examination – May, 2019
NUCLEAR & PARTICLE PHYSICS

Paper : PHY(H)-401/4247
[Maximum

Time : Three Hours]

Before answering the questions, candidates should ensure that they have been supplied the correct and complete paper. No complaint in this regard, will be entertained.

Note : All questions carry equal marks. **Compulsory** and attempt **one** question per unit.

- (i) Write a short note on Wigner, Majorana and Heisenberg Potential.
- (ii) Using Single particle shell model, find the ground state spin, parity, and magnetic moment for (a) $^{17}_8\text{O}$ and (b) $^{47}_{22}\text{Ti}$.
- (iii) What are expected types of multipole transitions between following nuclei (a) $f_{5/2}$ to $d_{3/2}$ and (b) $h_{9/2}$ to $g_{7/2}$?
- (iv) Are the following interactions allowed then write the type of interaction (a) $\pi^- + p \rightarrow A^0 + K^0$ and (b) $p + p \rightarrow p + \pi^+ + K^0 + A^0$.

22124

M. Sc. Geography 2nd Semester
Examination – May, 2019
AGRICULTURAL GEOGRAPHY

Paper : 16GEOG201DCEC

[Maximum Marks : 80

Time : Three Hours]
Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt **one** question from each Unit. Short answer type questions of Unit V is **compulsory**. All questions carry equal (16) marks.

UNIT – I

1. What are different approaches in the study of agricultural geography?
2. What are various secondary sources of data used in the studies of agricultural geography?

UNIT – II

3. Does the agricultural location theory of Von Thunen apply in present world? Elaborate your answer by giving examples from India.
4. Critically evaluate various methods used in measurement of agricultural productivity?

P. T. O.

UNIT – III

What are the characteristics of plantation agriculture? Give an account of evolution of plantation agriculture in the world.

What is difference between normative and empirical techniques of agricultural regionalization?

UNIT – IV

What are the problems faced by Indian agriculture? What are the solutions suggested to overcome agricultural crisis in India?

What is White Revolution? How did it improve income of marginal and small farmers?

UNIT – V

Write short notes on the followings :

- (i) Regional Approach in Agricultural Studies
- (ii) Lal Kitab
- (iii) Perishable Agricultural Commodities
- (iv) Bhatia's Method of Agricultural Efficiency
- (v) Commercial Grain Farming
- (vi) Crop Combination
- (vii) Waterlogged Land
- (viii) Food Surplus Areas