

Selection test for JRF in Agriculture & Ecology (JAEK) to be held in 2017.

Junior Research Fellowship in Agricultural Chemistry and Soil Science

SYLLABUS

Standard: M.Sc. (Agriculture) in Agricultural Chemistry and Soil Science of Indian University.

1. Agrometeorology:
What is agrometeorology; weather forecasting; water balance model; available moisture index model; factors limiting growth, development and yield of crop as affected by light, temperature, humidity and precipitation. Growth and development in adverse environmental conditions like drought, flood.
2. Soil Genesis:
Classification of rocks, parent materials for soil formation, weathering, types of weathering, factors affecting weathering, soil formation, factors affecting soil formation, soil profile
3. Soil physical properties:
Soil texture, structure, particle density, bulk density, pore space, soil aeration, soil water holding capacity, soil temperature, soil moisture,
4. Soil chemical properties:
Soil clay minerals, soil colloids, cation exchange capacity, soil acidity, soil alkalinity, soil salinity, soil organic matter, soil nutrients,
5. Soil fertility and water management:
Soil fertility problems; role of organic matter, important manures and fertilizers including biofertilizers, their application and behaviour in different soils; soil testing methods and fertilizer recommendation; role of water in plant development and crop production; systems of irrigation and drainage; irrigation requirement of different field crops.

6. Field experimentation:

Objects and trends in agronomic experiments; application, layout and analysis of data of principal experimental designs viz. Randomized block, Latin squares, factorial experiments, split-plot and confounding; computation of linear and curvilinear regressions and their uses.