

B-201-B: PEDAGOGY OF PHYSICAL SCIENCES

Internal Assessment: 30 marks

External Assessment: 70 marks

Note: The Question paper is divided into four sections. Section-A contains Multiple Choice Objective questions of one mark each. Section-B contains Very Short Answer questions of 2 marks each, Section-C contains Short Answer questions of four marks each and Section-D contains Long Answer questions of 15 marks each. Attempt all questions of Section-A and Section-B, any five questions out of seven from Section-C and two questions out of four from Section-D. Answer of very short answer questions (section-B) should be maximum of 25 words only. Answer of short answer questions (section-C) should not exceed 150 words.

Objectives

The pupil teacher will be able:

- To develop the pedagogic understanding of pupil-teachers in sciences in context of school and learner.
- To equip student teacher to promote understanding of sciences in learners.
- To organize pedagogic study of subjects in sciences at school level in collective way.
- To facilitate philosophical & epistemological insights of science teaching in pupil teacher.
- To enrich knowledge and teaching competency of pupil teacher.
- To equip pupil teacher with necessary skills for acting as a mediator between school and society.

Unit 1

Meaning of science & Its nature, need & importance, objectives of teaching science. Values of science. History of science teaching in India Contribution of Indian & Foreign scientists: Aryabhata, H.J.Bhabha, J.C..Bose, C.V.Raman A.P.J. Abdul Kalam, Eienstein ,Newton, Stephen Hawkins. .Aims and objectives of teaching science at Upper primary & Secondary level . Bloom's taxonomy ,Revised taxonomy of Educational objectives, RCEM approach, Writing objectives in behavioural terms.

Unit 2

Major methods, strategies & techniques of science teaching ; Classification of teaching methods: Autocratic & Democratic methods. Non formal approaches in science teaching, : science club, science fairs and excursions, science museum, science journal. Teaching aids(Audio, visual aids and improvised apparatus in physical sciences. Science teacher :Personal & professional qualities of a good science teacher . Lesson planning in physical sciences,

Unit3

Curriculum in science teaching, Critical appraisal of science curriculum, Approaches and Principles of curriculum construction. Modifying curriculum according to following: 1 Learner ,local needs and children with diverse needs. Text books and reference books in science teaching.

Unit 4

Evaluation in science teaching . Meaning of measurement and evaluation. Measuring cognitive ,affective and psychomotor out comes. Techniques of evaluation. Objective and Subjective techniques. Formative & Summative evaluation. Norm referenced and criterion-referenced tests. Achievement & diagnostic tests. CCE, CGPA grading system,.

Practicum :

Preparation of two or three assignments or Ppt. presentations on the contribution of Indian & foreign scientists and latest discoveries in science

Preparation of individual projects on audio –visual aids.Preparing two teaching aids,(once chart and one stationary or working model) Preparing science kit and improvised apparatus in science for upper primary and secondary level students.

Writing reports on the prevailing curriculum in the text books.Visit to community to search the science in local community which could be included in the curriculum & presenting the report.

Preparation of micro LP , lesson plans.

Practical exercises on Programmed instruction & CAI.

Construction & standardization of Achievement test.

Books Recommended:

Teaching of Physical Science S.P.Kulshrestha and Gaya Singh

Bhawtik Vigyan Shikshan Dr.A.B.Bhatnagar

Bhawtik Vigyan Shikshan J.K. Sood

Teaching of Science M.S.Yadav