

SEMESTER - II

CPS 2b – Part II - PEDAGOGY OF BIOLOGICAL SCIENCE

Credits: 4

Internal: 40 marks

Hours/Week: Theory-4hrs Practical- 4hrs

External: 60 marks

Total: 100 marks

Objectives

At the end of the course the student teachers will be able to:

- appreciate the importance of non scholastic activities in biological science;
- recognise the purpose of evaluation in Biological Science;
- accept the need for planning before teaching of Biological science;
- acquire an interest to enhance the teacher professionalism and teacher commitment as Biological Science teachers;
- explain the classroom climate and classroom management;
- recall the importance of organization and maintenance of the institute.

Unit I: Co- Scholastic Activities

Introduction-Formal and informal methods of teaching and learning to strengthen Science education – exhibitions ,field trips, excursion , Science fair-Celebrate science Day, Earth Day and Environmental Day-organize Science club, eco club activities.

Unit II: Evaluation in Biological Science

Introduction-Concept of evaluation- formative, summative evaluation, construction of achievement tests and its types- Diagnostic, Prognostic tests, criterion and norm referenced tests –Item Analysis- Principle of test construction -blue print - question bank- Tools of Evaluation, Written Examination, Online Examination- Grading system.

Unit III: Planning and Teaching

Introduction- Yearly planning in Biological Science, Importance of unit plan in Biological Science, Unit formulation in Biological Science, steps involved in unit planning, Merits and

Demerits of unit plan. Major differences between unit plan and lesson plan, Importance of lesson planning- writing instructional objectives and planning for specific behavioural changes Herbatian Approach in writing lesson plan.

Unit IV: Teacher Professionalization and Teacher Commitment

Introduction- Committed teachers, passionate teachers: Dimension of passion associated with teacher commitment and engagement: Teacher commitment as passion- teacher – teacher commitment as a unit of time outside the contact hours with students- teacher commitment as focus on the individual needs of students. Teacher commitment as responsibility to impart knowledge, attitudes, values and beliefs- teacher commitment as maintaining ‘ Professional knowledge’- teacher commitment as engagement with school and community- importance of teacher commitment for quality enhancement – ways and means of enhancing teacher commitment for teaching professionalization. Need and types of professional growth, role in fostering creativity, equipment maintenance, attending pre - service and in-service training by NCERT and allied agencies. Qualities and competencies of Science teachers - Academic Qualification, Professional training and special qualities required for Biology teachers

Unit V: Classroom Climate and Classroom Management

Introduction- Definition, importance of classroom climate, factors influencing classroom climate, Management of class room climate. Classroom Management: Definition, Techniques, classroom management as time management

Unit VI: School Plant

Introduction- School Building, Design of the school, maintenance of the school, Play ground, Library, Laboratories, Classrooms, Role of Headmaster- Parent- Teacher association in maintenance of school- Time Table- Co-curricular activities, Discipline, records and registers maintained in the School.

Suggested references:

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- ❖ Bhatnagar,A.D. (2004). *Teaching of Science*. Meerut: Surya Publications.
- ❖ Buffaloe, Neal., & Throneberry, J. B. (1972). *Principles of Biology teaching*. New Delhi: Prentice – Hall of India Limited.
- ❖ Frost Jenny., & Turner Tony. (2005). *Learning to teach Science in Secondary school*. New York: Routledge Palmer Publication.
- ❖ Garrett. (1979). *Statistics in Psychology and Education*. Bombay: Vakils, Feffer and Simons Ltd.
- ❖ Green, T. L. (1965). *The teaching of biology in tropical secondary schools*. London: Oxford University Press.
- ❖ Harms, N., & Yager, R. (1981). *What research says to the science teacher* (Vol. 3). Washington: National Science Teachers Association.
- ❖ Heiss. E. D., Obown, S., & Hoftman, C. W. (1961). *Modern science teaching*. New Delhi: Macmillian Company Press.
- ❖ Khana, S.D,et al. (1976). *Technology of science teaching*. New Delhi: Doaba House.
- ❖ Natrajan, C. (1997). *Activity based foundation course on science technology and society*. Mumbai: Homi Bhaba Centre for Science Education.
- ❖ Korde., & Sawant.(1980). *Science and Scientific Method*. New Delhi: Himalaya Publishing House.
- ❖ Passi, B. K. (1976). *Becoming a Better Teacher: Micro teaching approach*. Ahemedabad: Sahitya Mudranalaya.
- ❖ Prasad Janardhan. (1999). *Practical aspects in Teaching of Science*. New Delhi: Kanishka Publication.
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- ❖ வேணுகோபால்.கோ, நாகராஜன் கி. (2012). உயிரியல் கற்பித்தல். சென்னை
- ❖ இரா உமா பாஸ்கரன். (2007). உயிரியல் கற்பித்தல். சென்னை: சாரதா பதிப்பகம்கே.
- ❖ ஆர்.திருவேங்கடசாமி. (2007). உயிர் வாழ்வதும் உயிரி வேதியியலும். சென்னை: கௌரா ஏஜென்ஸிஸ்.
- ❖ கே. ராஜம்மாள் .(2005). உயிரியல் கற்பிக்கும் முறைகள். சென்னை: சாந்தா பதிப்பகம்.
- ❖ மா. மலர்விழி, மா. உமாமகேஸ்வரி. (2008).உயிரியல் கற்பித்தல். மதுரை: மாநிலா பப்ளிஸர்ஸ்.
