

M.Ed. (C.B.C.S.S.) DEGREE EXAMINATION, NOVEMBER 2013**First Semester****Core Course****EDU 904.7—ADVANCED METHODOLOGY OF SCIENCE EDUCATION****(Regular/Supplementary)**

Time : Three Hours

Maximum Weight : 32

Part A*Answer any two questions.**Each question carries a weight of 4.*

1. Both cognitive and affective learning are crucial to "Complete" learning. Suggest steps helpful to promote and strengthen both these dimensions while learning science in our schools.
2. Describe how best you can organize "Field Trips" to make it an effective teaching - learning aid for physical / biological sciences.
3. What are the national goals of science education given in NCF-2005 ? How far have the science syllabus revisions in Kerala helped to achieve these goals ?
4. Give the important characteristics of Norm-Referenced Test and Criterion-Referenced Test. List out the situations for use of NRT and CRT.

(2 × 4 = 8)

Part B*Answer any six questions.**Each question carries a weight of 2.*

5. Outline the steps in measuring any psychomotor learning experience in science. Illustrate your answer.
6. Training in scientific method is considered as an important aim of teaching science. How would you achieve this aim ?
7. What format you would suggest for developing a source book in physical science / biological science teaching ?
8. "The modern science teacher has to face many challenges". State some of these challenges and explain how you will face them successfully.
9. How would you organize physical science / biological science instruction to help culturally disadvantaged students in your class ?

Turn over

10. Distinguish between formative evaluation and summative evaluation in science.
11. Identify some areas in physical science / biological science which need more research.
12. Point out the steps you would take as a teacher of physical science / biological science for your professional growth.

(6 × 2 = 12)

Part C

Answer any six questions.

Each question carries a weight of 1.

13. How could you apply constructivism in science classroom ?
14. Bring out the need for an interdisciplinary approach to science education in schools.
15. What are the objectives of science clubs in secondary schools ?
16. Why a teacher of science should be flexible in his/her methods of teaching ?
17. How would you integrate Life skills in science teaching ?
18. Do you think that lack of resources is a hindrance to science instruction ? Justify your answer.
19. Outline briefly a procedure for evaluation of students "process skills".
20. What are the steps involved in the preparation of a standardized achievement test in science for secondary schools ?

(6 × 1 = 6)

Part D

Answer all questions.

Each question carries a weight of ½

21. What is the significance of My Science Diary ?
22. What are the advantageous of a teacher-made achievement test in science ?
23. What is meant by Cyber-Coaching ?
24. Give some of the major extension activities a science teacher is expected to carry out.
25. What steps would you formulate for the assessment of a science project submitted by higher secondary school students ?
26. How would you organize group discussion among science students of Standard IX ?
27. Give any four expected competencies of a science teacher.
28. What are the significances of external examinations ?

- 29. A science teacher gives marks to answer books of students and then provides grades to the students on the basis of ranges of marks obtained. Do you agree this method of giving grades to students? Justify your answer.
- 30. What is meant by 'activity oriented' science curriculum?
- 31. Explain the concept of 'Scientific literacy'.
- 32. What were the major objectives of DPEP in modernising science education?

(12 x 1/2 = 6)

Part A

Each question carries a weight of 4

- 1. Both cognitive and affective learning are needed for "transformative" learning. Suggest steps that promote and strengthen both these dimensions of learning and are in your opinion.
- 2. Describe the features of "organismal" field theory compared to "cognitive" field theory.
- 3. What are the essential goals of science education, as per the DPEP 2003? How far have the science syllabus revisions in Kerala helped in achieving these goals?
- 4. Give the important characteristics of the Science in Vernacular Curriculum launched in 2003. List out the measures for its implementation.

(2 x 4 = 8)

Part B

Each question carries a weight of 2

- 5. Outline the steps of measuring any psychomotor learning experience in science. Illustrate your answer.
- 6. Training in research methods is considered as an important step of teaching science. How would you motivate this?
- 7. What would you recommend as the development strategy in physical science / biological sciences teaching?
- 8. "Our western science tradition had to face certain challenges". State some of these challenges and suggest ways to face them successfully.
- 9. How would you organize physical science / biological science and related activities to help effectively demonstrate the scientific method in practice?

Turn over