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Name.....

Reg. No.....

THIRD SEMESTER M.Ed. DEGREE EXAMINATION, DECEMBER 2021

M.Ed.

MED 12.2.9—ADVANCED METHODOLOGY OF TEACHING PHYSICAL SCIENCE

(2017 Scheme)

Time : Three Hours

Maximum : 80 Marks

I. Short Answer Type/Annotation Questions. Answer *all* questions. Each question carries two marks :

- 1 Define hypothesis. State one as an example.
- 2 Describe how a concept map would support effective learning of science.
- 3 Jot down a few concerns you observed while evaluating a science textbook.
- 4 Outline problem-based learning. Suggest an approach that works in tune with PBL.
- 5 What importance do you find in organising professional development programmes for science teachers ?

(5 × 2 = 10 marks)

II. Short Essay Type Questions/Problems. Answer any *eight* questions out of twelve. Each question carries five marks :

- 6 Detail any one criteria for evaluating a science textbook.
- 7 Elaborate on the need and importance of 'innovations and creativity in science.
- 8 Using suitable illustrations, explain the hypothetico-deductive method in science.
- 9 Explain the importance of portfolio assessments in the teaching and learning of science.
- 10 Expand on your understanding of professional ethics. Clarify how vital it is for teachers.
- 11 Elucidate the relevance of the theory of Lev Vygotsky in the teaching and learning of physical science.
- 12 Write a short note on the impact factor of a journal. Make clear its implications in the current educational scenario.
- 13 Elucidate the concept of the vocabulary of science. With suitable examples, differentiate 'terms' and 'concepts'.

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- 14 Discuss the recommendations of the National Curriculum Framework 2005 about physical science education.
- 15 Prepare a short note on critical pedagogy. Explain how you apply it in classrooms for teaching science to secondary school children.
- 16 Choose suitable topics from the science textbooks of your choice and illustrate the integration of co-curricular activities with science education.
- 17 Demonstrate your understanding of the various forms of instructional materials. Explain the relevance of instructional materials in teaching science at the secondary level.

(8 × 5 = 40 marks)

III. Long Essay Type Questions. Answer any *two* questions out of four. Each question carries 15 marks :

- 18 Discuss the relevance of research in science education. Suggest certain grey areas in physical science education that needs to be researched.
- 19 Deliberate on the changing roles and responsibilities of science teachers. Discuss the relevance of teacher appraisal and accountability in the current educational scenario.
- 20 Narrate the evolution of science as a discipline. Present your views on the modern trends in physical science education at national and international levels.
- 21 Critically comment on the statement 'the pandemic situation has helped in strengthening the ICT integrated pedagogy for physical science education'. Also, discuss the relevance of planning and organising laboratory works in teaching and learning physical science.

(2 × 15 = 30 marks)

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