Qn.Code: MEDC34(2)

# N.V.K.S.D. COLLEGE OF EDUCATION

**(AUTONOMOUS)**

**M.Ed. Degree Third Semester Examination, December 2024**

**(For the candidates admitted during the academic year 2023-2024)**

**Specialisation based on Discipline** : **ADVANCED METHODOLOGY IN SCIENCE EDUCATION**

**Course code: MED3SD003**

**Time: 3 Hours** **Maximum Marks: 70**

**SECTION A (10 x 1 = 10 marks)**

**Answer ALL the questions by selecting the appropriate answers.**

1. The core objective of Science education today is
   a) To develop memorization skills
   b) To promote critical thinking and problem-solving skills
   c) To ignore practical applications of science
   d) To focus only on theoretical knowledge
2. The characteristic essential for scientific knowledge is
   a) Subjectivity b) Empiricism c) Faith-based conclusions d) Intuition
3. The Sustainable Development Goals (SDGs) encourage Science education to focus on
   a) Innovation without environmental concern
   b) Science education only for researchers
   c) Promoting equity, sustainability and quality education
   d) Emphasizing traditional knowledge over modern science
4. The NCF recommends integrating Science with other subjects
   a) Through compartmentalized subject teaching
   b) Through interdisciplinary and thematic learning approaches
   c) By focusing on science as an isolated discipline
   d) By reducing the number of subjects
5. The curriculum that focuses on students' life skills and problem-solving abilities is
   a) Subject-centered curriculum b) Core curriculum
   c) Learner-centered curriculum d) Activity-based curriculum
6. A potential challenge faced in curriculum evaluation is
   a) Lack of educational policies
   b) Defining clear objectives for evaluation
   c) Too many practical activities in the curriculum

d) Over-dependence on digital resources

7. The method appropriate for exploring trends over time in Science education is
   a) Case study b) Longitudinal study
   c) Cross-sectional study d) Ethnographic study
8. An unethical research practice is
   a) Obtaining informed consent from the participants
   b) Giving credit to all contributors
   c) Fabricating or falsifying research data
   d) Ensuring participants' anonymity
9. An online tool that helps students to conduct collaborative scientific research is
   a) Google Scholar b) Facebook c) WhatsApp d) You Tube
10. One of the major concerns when using the internet in Science classrooms is
    a) Lack of access to printed text books
    b) Potential distractions from non-educational websites
    c) Over-reliance on traditional classroom teaching
    d) Limited multimedia support on the internet

**SECTION B (5 x 3 = 15 marks)**

**Answer all the FIVE questions in about 100 words each.**

11. How do the STS goals help students to understand the interconnectedness between Science, Technology and Society?
12. Identify the strategies used in evaluating the effectiveness of a curriculum?
13. How does the usage of social networking sites in Science education empower teachers to improve their instructional practices?
14. In what ways does classroom research promote the development of innovative teaching practices in Science education?
15. Provide examples (any six) of scientific innovations that have a significant impact on social development?

**SECTION C (5 x 5 = 25 marks)**

**Answer any FIVE questions in about 200 words each.**

16. Discuss the influence of ICT based resources in Science education.
17. Analyze the relevance of National Curricular Framework (2005) in the present context.
18. Write the specific performance objectives of Science education.
19. Explain how the quality of text books impact student learning outcomes.

20. How can teachers ensure that their classroom research adheres to ethical guidelines?
21. How do the research practices in India differ from those in other countries?
22. Explore the relationship between Science and Philosophy.

**SECTION D (2 x 10 = 20 marks)**
**Answer BOTH the questions in about 500 words each.**

23. a) Describe process skills in science and explain how process skills contribute to fostering scientific literacy among students?

(or)

b) Compare and contrast various taxonomies of Science education with respect to their objectives.

24. a) Analyse the implications of Science education researches in promoting learning and creating an effective and engaging learning environment.

(or)

b) How will you use internet to enhance access to scientific resources and materials in the classroom?