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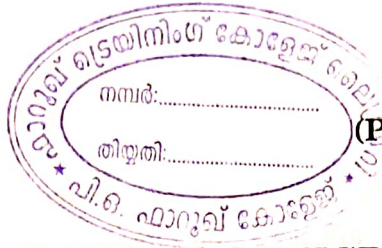Name...

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THIRD SEMESTER M.Ed. DEGREE EXAMINATION, NOVEMBER 2019

M.Ed.

MED 12.2.8.—ADVANCED METHODOLOGY OF TEACHING MATHEMATICS

(2017 Admissions)

Time : Three Hours

Maximum : 80 Marks

I. Answer *all* questions. Each question carries 2 marks :

1 As a teacher how will you nurture interest and creativity towards mathematics learning among your students.

2 Present your understanding on 'existence' type and 'uniqueness' type of theorems.

3 What is significance of Project method of teaching mathematics ?

4 Highlight the criteria based on which a good website in mathematics may be identified.

5 Mention the characteristics of topical approach in curriculum construction.

(5 × 2 = 10 marks)

II. Answer any *eight* questions out of twelve. Each question carries 5 marks :

6 Give a brief account on the nature and structure of mathematics by highlighting relevant illustrations.

7 Enunciate the curriculum reforms in mathematics based on the recommendations of National Curriculum Framework (2005).

8 Define : Heuristic method of teaching. Highlight the significance of Heuristic method of teaching in developing curiosity, originality and discovery in mathematics learning.

9 Elucidate the significant aspects involved in developing mathematical concepts through Bruner's theory.

10 Highlight the characteristics of Norm-Referenced and Criterion-Referenced testing with examples.

11 Explain Gagne's Hierarchy of Learning types leading to problem solving ability.

12 Justify the importance of teacher's pedagogical content knowledge in mathematics.

13 Assessment in mathematics must shift to a broader view entailing both procedural as well as conceptual understanding. Justify the statement.

14 What is meant by inquiry training model of teaching ? Elucidate the phases and description of inquiry training model citing examples from mathematics topics.

Turn over

15 Analyze the importance of affective domain in mathematics teaching and learning process. Discuss the ways and means of evaluating affective domain components.

16 Enumerate the basic principles to be considered while selecting and organizing various topics in mathematics curriculum.

17 Highlight the misconceptions in mathematics learning and justify how it can be improved through diagnostic teaching.

(8 × 5 = 40 marks)

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

18 Discuss in detail the need and significance of teaching mathematics at secondary school stage. Justify your answer by highlighting the aims and objectives of teaching mathematics.

19 Explain the following methods of teaching with examples :

    (i) Inductive method.

    (ii) Deductive method.

    (iii) Analytic method.

20 Describe the psychological basis of teaching and learning of mathematics based on the theoretical implications of Jean Piaget. Present illustrations.

21 Give a brief account on the following with relevant examples :

    (i) Steps in construction of an achievement test.

    (ii) Revised Bloom's Taxonomy of educational objectives.

(2 × 15 = 30 marks)