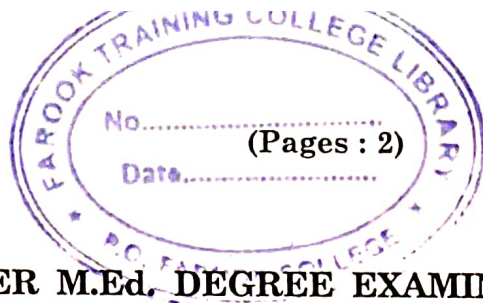


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Name.....

Reg. No.....

THIRD SEMESTER M.Ed. DEGREE EXAMINATION, DECEMBER 2020

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 Justify how the subjects science and mathematics are inter-related.
- 2 Mention a few significant mathematical contributions of Pythagoras.
- 3 What do you mean by competency based approach of teaching mathematics ?
- 4 State the principles of curriculum development in Mathematics.
- 5 Enumerate the objectives of formative and summative evaluation.

(5 × 2 = 10 marks)

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

- 6 Discuss the need and importance of mathematics as a subject discipline in school curriculum. Highlight its educational implications.
- 7 Enumerate the basic tenets involved in using a Process-oriented approach in teaching of mathematics.
- 8 Enunciate the features of Concept attainment model by explaining it with a relevant mathematics problem.
- 9 Highlight the problems that a teacher faces in the teaching of mathematics. Suggest how these problems can be overcome.
- 10 Discuss Gagne's hierarchy of learning type's citing examples for each.
- 11 Elucidate the concept of e-content development. Mention the steps involved in it and explain its characteristics.
- 12 Highlight the differences between norm-referenced testing and criterion-referenced testing.

Turn over

- 13 Enunciate the applicational perspectives of Howard Gardner's multiple intelligence theory in mathematics learning.
- 14 Give a brief overview of the revised Bloom's taxonomy of educational objectives.
- 15 Elucidate on the mathematics teachers attitudes, beliefs and concerns about the use of digital technologies.
- 16 Define the terms : 'Assessment' and 'Evaluation'. Explain the steps involved in the construction of an achievement test.
- 17 Write short notes on the following with relevant illustrations :
 - (i) Cyber-guides.
 - (ii) Graphic organizers.

(8 × 5 = 40 marks)

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

- 18 Highlight the meaning, nature and characteristics of mathematics. Describe the aims and objectives of teaching mathematics at the secondary and higher secondary level.
- 19 Analyse the characteristics, advantages and limitations of the following methods of teaching with suitable examples :—
 - (i) Project method.
 - (ii) Inductive method.
 - (iii) Analytic method.
- 20 Give a detailed account on the psychological bases of mathematics learning centered on the theories of Jean Piaget and Jerome S. Bruner with illustrations.
- 21 Explain the following concepts in the context of mathematics teaching-learning :
 - (i) Topical and Psychological approaches to curriculum development.
 - (ii) Brain-storming and Role-playing as techniques of teaching mathematics.

(2 × 15 = 30 marks)