

M. Ed. Two year Programme

IV Semester Test Papers

April 2018 -

Name MESSI: Theme Based Specialization

Subject Course-I Pedagogy of Mathematics.

Address _____

From _____ To _____

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ST. ANN'S COLLEGE OF EDUCATION, MANGALURU.
(AUTONOMOUS)
M.Ed. Two Year Programme

Fourth Semester Test – April 2018

MES551 : Theme Based Specialization Course - I
Pedagogy of Mathematics

Time : 3 Hours

Date : 21-04-2018

Max. Marks : 70

Note : There are two sections in the question paper. Both the sections are compulsory.

Section A

Note : Answer the following questions in about three pages each.

- 1 a) i) Explain the nature of Mathematics.
ii) Discuss the Psychological approach used in Mathematics Education. (5+5)
[or]
- b) i) Enumerate the aims and objectives of Teaching Mathematics at Secondary and Senior Secondary Level.
ii) Discuss the Revised Bloom's Taxonomy of Educational objectives with appropriate examples. (4+6)
- 2 a) i) Explain the use of constructivist approach in the teaching of Mathematics.
ii) Discuss the application of any two group learning methods in Mathematics. (4+6)
[or]
- b) i) Explain the procedure of development of Programmed Learning Material in Mathematics.
ii) Discuss the application of concept attainment Model in the Teaching of Mathematics. (5+5)
- 3 a) i) Explain the concept and need for Mathematics Curriculum.
ii) Discuss the Modern approaches to Mathematics Curriculum. (5+5)
[or]
- b) i) Enumerate the recommendations of NCF (2005) on Mathematics Learning.
ii) Discuss the current trends in Mathematics Curriculum. (5+5)
- 4 a) i) Explain the need of inservice training programmes in the professional development of Mathematics teachers.
ii) Discuss the role of Mathematics Teacher's Association in the professional growth of Mathematics Teacher's. (4+6)
[or]
- b) i) Explain the role of Journals and other resource materials in Mathematics Education.
ii) Discuss the role of Research in Mathematics Education. (6+4)

Section B

Note : Answer any **Six** of the following questions in about a page each. (5 x 6=30)

- 5 a) Explain the types of proofs with appropriate examples.
- b) Discuss the contributions of any two psychologists to Mathematics Learning.
- c) Explain the Aesthetic aspects and Interest in Mathematics.
- d) Explain any two strategies of Teaching Mathematics.
- e) Describe Mathematical structures, Axioms and Postulates.
- f) Explain the objectives and principles of Designing Mathematics Curriculum.
- g) Discuss any three approaches to curricular content organization in Mathematics.
- h) Explain the Mathematics Curriculum for different stages of schooling.

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**ST. ANN'S COLLEGE OF EDUCATION, MANGALURU.
(AUTONOMOUS)
M.Ed. Two Year Programme**

Fourth Semester Test - August 2021

**MES551: Theme Based Specialization Course - I
Pedagogy of Mathematics**

Time : 3 Hours

Date : 30-08-2021

Max. Marks : 70

Instructions : There are two sections in the question paper. Both the sections are compulsory.

Section A

Note : Answer the following questions in about three pages each.

- 1a) i) Discuss the concept and types of proofs with appropriate examples.
ii) Explain the Aesthetic aspects of Mathematics. (5+5)
[or]
- b) i) Enumerate the aims and objectives of Teaching Mathematics at Secondary and Senior Secondary level.
ii) Discuss the Revised Bloom's Taxonomy of Educational objectives with appropriate examples. (5+5)
- 2 a) i) Explain Polya's four step approach to problem solving.
ii) Explain the ICT tools used for Mathematics Education. (5+5)
[or]
- b) i) Explain Inquiry Training Model with an illustration from Mathematics.
ii) Discuss the application of any two active learning strategies in Mathematics. (5+5)
- 3a) i) Enumerate the principles of designing Mathematics curriculum.
ii) Discuss any three approaches in subject matter organization in Mathematics. (5+5)
[or]
- b) i) Discuss the modern approaches to Mathematics curriculum.
ii) Explain the concept and need for Mathematics curriculum. (5+5)
- 4 a) i) Explain the use of Criterion and Diagnostic Evaluation in Mathematics.
ii) Explain the role of resource materials in Mathematics Education. (5+5)
[or]
- b) i) Elucidate the need for diagnostic tests in Mathematics.
ii) Discuss any two Continuous and Comprehensive Evaluation (CCE) tools used in Mathematics. (5+5)

Section B

Note : Answer any **Six** of the following questions in about a page each.(5 x 6=30)

- 5 a) Discuss the scope of Mathematics.
- b) Describe constructivist approach in learning Mathematics.
- c) Discuss the importance of CAI in Mathematics.
- d) Discuss the role of research in Mathematics.
- e) Discuss the role of Mathematics Teacher's Association in the professional growth of Mathematics Teacher.
- f) Describe Mathematical structures, Axioms and Postulates.
- g) Discuss the need and significance of supervision of work in Mathematics.
- h) Distinguish between formative and summative evaluation.

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ST. ANN'S COLLEGE OF EDUCATION, MANGALURU.
(AUTONOMOUS)
M.Ed. Two Year Programme

Fourth Semester Test - November 2022

MES551: Theme Based Specialization Course - I
Pedagogy of Mathematics

Time : 3 Hours

Date : 19-11-2022

Max. Marks : 70

- Note : 1. Answer Part - I and Part - II questions on separate Answer Sheets.
2. There are two sections in Part I and Part II in the question paper. Both are compulsory.

PART - I

Section A

Note : Answer the following questions in about three pages each.

- 1 a) i) Explain the characteristics of Mathematics.
ii) Discuss different types of proofs. (5+5)
[or]
b) i) Elucidate the contributions of Bruner to Mathematics Education.
ii) Discuss the revised taxonomy of Educational objectives with appropriate examples. (5+5)
- 2 a) i) Discuss the use of Interactive Board and other ICT tools in Mathematics.
ii) Enumerate the uses of self study and supervised study. (5+5)
[or]
b) i) Discuss the application of Inquiry Training Model in the teaching of Mathematics.
ii) Enumerate the methods of providing for individual differences in Mathematical Ability. (5+5)

Section B

Note : Answer any **Three** of the following questions in about a page each. (5x3=15)

- 3 a) Discuss the Aesthetic aspects of Mathematics.
b) List the objectives of teaching Mathematics at secondary level.
c) Describe Polya's four step approach to problem solving.
d) Discuss the applications of Cooperative Learning Techniques in Mathematics.
e) Explain the importance of brainstorming and Review work in Mathematics.

PART - II

Section A

Note : Answer the following questions in about **three** pages each.

- 1 a) i) Enumerate the objectives of Mathematics curriculum at secondary school level.
ii) Discuss the various approaches to curriculum organization in Mathematics. (4+6)
[or]
- b) i) Explain the modern approaches to Mathematics curriculum.
ii) Give a critical review of Mathematics curriculum of various secondary school boards in India. (5+5)
- 2 a) i) Explain the use of Criterion and Diagnostic Evaluation in Mathematics Learning.
ii) Discuss various Continuous and Comprehensive Evaluation (CCE) tools and techniques used in Mathematics (4+6)
[or]
- b) i) Explain the learning difficulties in Mathematics.
ii) Discuss the types of inservice training programmes needed for the professional development of Mathematics teachers. (4+6)

Section B

Note : Answer any **Three** of the following questions in about a page each. (5x3=15)

- 3 a) Explain the general aims of teaching Mathematics at different stages of schooling.
b) Discuss the concept and need for Mathematics curriculum.
c) Explain the current trends in Mathematics curriculum.
d) Discuss different types of errors in Mathematics.
e) Explain the various areas of Research in Mathematics Education.

ST ANN'S COLLEGE OF EDUCATION, MANGALURU
(AUTONOMOUS)
M.Ed. Two Year Programme

Fourth Semester Test - December 2023

MES551: Theme Based Specialization Course - I
Pedagogy of Mathematics

Time : 3 Hours

Date : 16-12-2023

Max. Marks : 70

- Note : 1. Answer Part - I and Part - II questions on separate Answer Sheets.
2. There are two sections each in Part I and Part II of the question paper. Both are compulsory.

PART - I

Section A

Note : Answer the following questions in about four to five pages each. (2x15=30)

- 1 a) i) Explain the principles of designing Mathematics Curriculum.
ii) Discuss any three approaches to curriculum organization in Mathematics. (6+9)
[or]
- b) i) Enumerate the recommendations of National Curriculum Framework -2005 on Mathematics Learning.
ii) Discuss the current trends in Mathematics Curriculum. (6+9)
- 2 a) i) Differentiate between diagnostic and prognostic tests in Mathematics.
ii) Discuss the Continuous and Comprehensive Evaluation (CCE) tools used in Mathematics. (6+9)
[or]
- b) i) Explain different types of Learning difficulties in Mathematics.
ii) Discuss the importance of In-service training programmes in the professional development of Mathematics Teacher. (8+7)

Section B

Note : Answer any **One** of the following questions in about a page each. (5x1=5)

- 3 a) Discuss the errors in Mathematics Learning and its Identification.
b) Explain the concept and need of Mathematics Curriculum.

-: 2 :-

PART - II

Section A

Note : Answer the following questions in about four to five pages each. (2x15=30)

- 1 a) i) Explain the nature and scope of Mathematics
ii) Discuss the contributions of Gardner for Mathematics Education and learning.(9+6)
[or]
- b) i) Illustrate Marzano's new taxonomy of instructional objectives in teaching Mathematics.
ii) Discuss different types of proofs with suitable examples. (6+9)
- 2 a) i) Discuss the use of interactive board and other ICT tools in the learning of Mathematics.
ii) Discuss the active learning strategies in the learning of Mathematics. (6+9)
[or]
- b) i) Illustrate Inductive and Deductive methods of Teaching Mathematics.
ii) Analyze the role of Group work and Brainstorming in the learning of Mathematics. (9+6)

Section B

Note : Answer any **One** of the following questions in about a page each. (5x3=15)

- 3 a) Discuss the processes of dealing with abstractness and generalization.
b) Explain Polya's four step approach to Problem solving.

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**ST ANN'S COLLEGE OF EDUCATION, MANGALURU
(AUTONOMOUS)
M.Ed. Two Year Programme**

Fourth Semester Test - March 2025

**MES551: Theme Based Specialization Course - I
Pedagogy of Mathematics (Elementary Education)**

Time : 3 Hours

Date : 06-03-2025

Max. Marks : 70

- Note : 1. Answer Part - I and Part - II questions on separate Answer Sheets.
2. There are two sections each in Part I and Part II of the question paper. Both are compulsory.

PART - I

Section A

Note : Answer the following questions in about four to five pages each. (2x15=30)

- 1 a) i) Explain the approaches to curriculum organization in Mathematics.
ii) Describe the general outline for curriculum planning at Elementary level. (7+8)
[or]
- b) i) Discuss the critical review of Elementary School Mathematics curriculum.
ii) Discuss the phases of curriculum development in Mathematics. (7+8)
- 2 a) i) Explain the uses of prognostic tests in Mathematics.
ii) Discuss the need for remedial measures to overcome learning difficulties in Mathematics at Elementary level with specific examples. (6+9)
[or]
- b) i) Discuss the techniques of Continuous and Comprehensive Evaluation in Mathematics at Elementary level.
ii) Explain the opportunities for professional development of Mathematics teachers at Elementary level. (8+7)

Section B

Note : Answer any One of the following questions in about a page each. (5x1=5)

- 3 a) Distinguish between Summative and Formative Evaluation.
b) Discuss the research in Mathematics Education at Elementary level.

-: 2 :-

PART - II

Section A

Note : Answer the following questions in about four to five pages each. (2x15=30)

- 1 a) i) Explain the nature of Mathematics
ii) Discuss different types of Mathematical thinking. (6+9)
[or]
- b) i) Discuss the scope of Mathematics Education beyond classroom at Elementary level.
ii) Analyse the vision for School Mathematics according to NCF 2005. (6+9)
- 2 a) i) Describe Interpretation Construction Design Model (ICON).
ii) Explain the use of gamification in Mathematics. (8+7)
[or]
- b) i) Discuss the development of creative abilities of learners in Mathematics.
ii) Illustrate Inductive and deductive methods of learning Mathematics. (7+8)

Section B

Note : Answer any One of the following questions in about a page each. (5x1=5)

- 3 a) Discuss the processes of cognitive development according to Bruner.
b) Explain the development of programmed Learning Material in Mathematics.

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