

17. Write down two revision techniques for mathematics.
  18. What is a lesson plan? Explain briefly.
  19. Prepare teaching notes on a topic you are familiar with in mathematics.
  20. What are the three main ingredients in Mathematical communication?
  21. List several basic ways of overcoming the fear of Talking about mathematics.
  22. What is the qualification of a professional development of a mathematics teacher?
  23. Mention any two status of achievements in Mathematics at elementary and secondary schools.
  24. Differentiate Unit Plan and Year Plan in a Lesson plan preparation.
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**6020113**

**B.Ed. DEGREE EXAMINATION, MAY 2016.**

**First Year — Non-Semester**

**Education**

**Optional : PEDAGOGY OF MATHEMATICS – PART I**

**(From 2015–16 onwards)**

**Time : Three hours**

**Maximum : 80 marks**

**PART A — (2 × 10 = 20 marks)**

**Answer ALL the questions.**

1. (a) Explain in detail the contributions of any five eminent mathematicians and their contributions to the development of mathematics.

**Or**

- (b) Explain in detail the aims and objectives of learning mathematics.



2. (a) What is the Five-E-Model in teaching Mathematics. Explain each of these five models. Illustrate them with suitable examples.

Or

- (b) Define Micro teaching. Explain the stages of micro teaching cycle. Illustrate them with suitable examples.

PART B — ( $8 \times 5 = 40$  marks)

Answer any EIGHT questions.

3. Explain the need and significance of teaching Mathematics.
4. Why assignments have deadlines and why it is important to meet them whenever possible?
5. Give a brief history on Vedic Mathematics.
6. Think about the following two mathematical ideas. Explain the techniques and the ways with which you might communicate them to others:  
(a) Pythagoras' theorem. (b) The definition of a rational number.
7. What is a Mathematics Laboratory? What are its components? Explain its use.

8. Explain the method of Lecture-cum-demonstration in teaching/learning process.
9. Distinguish the analytic and Synthetic methods of teaching Mathematics.
10. What is the contribution to corporate life and society from Research in Mathematics teaching?
11. List and explain five important resources in learning Mathematics.
12. What is Bruner's Concept attaining model? Compare with Suchman's Enquiry model.
13. Explain Bloom's Taxonomy in of Educational Objectives.
14. Give five specific objectives and teaching point of content areas in Mathematics of Algebra.

PART C — ( $10 \times 2 = 20$  marks)

Answer ALL the questions.

15. Why do teachers need methods and strategies for teaching mathematics?
16. Who do you think you will need to communicate mathematics?



22. Analyse the present teacher education programme in mathematics giving atleast four merits and four limitations.
23. What points should the teacher bear in mind for effective classroom behaviour?
24. How can the teacher develop in the student's divergent thinking in mathematics?
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First Year – Non Semester

Education

Optional – PEDAGOGY OF MATHEMATICS – PART 1

(From 2015 – 2016 onwards)

Time : Three hours

Maximum : 80 marks

PART-A — (2 × 10 = 20 marks)

Answer ALL the questions.

1. (a) Describe the steps in Herbartian approach to lesson planning.
- Or
- (b) Briefly explain Piaget's stages of development with reference with to learning concepts in Mathematics.
2. (a) Prepare a lesson plan in Mathematics on any topic of Standard IX.
- Or
- (b) What do you understand by taxonomy of educational objectives. Describe with illustration, Bloom's taxonomy of Educational objectives in the cognitive domain.



PART B — ( $8 \times 5 = 40$  marks)

Answer any EIGHT questions.

3. Give a brief outline of the steps in the construction of an achievement test in Mathematics.
4. What are the criteria for evaluating teaching competence?
5. How can the 'Inquiry Training Models of Teaching' be profitably used in problem solving in Higher Secondary Mathematics? Illustrate.
6. Describe the ideas of Piaget and Burner about the formation of mathematical concepts. Illustrate.
7. Describe the current trends in curriculum changes in mathematics education in India and the developed countries.
8. How do the factors, maturation, motivation and perception influence the learning of mathematics.
9. Describe the contributions of Pythagoras towards mathematics.
10. Describe the concept attainment model of teaching

11. Brief explanation about activities of the mathematics.
12. Explain implication of research finding.
13. Explain contribution of any one mathematician.
14. What is the comparison of Analytic and Synthetic method of teaching?

PART C — ( $10 \times 2 = 20$  marks)

Answer ALL the questions.

15. Give any two contributions of Euler to the development of mathematics.
16. Mention the components of a Model of Teaching.
17. What is Aptitude Treatment Interaction (ATI)?
18. What is the role of computers in mathematics education at the higher secondary level?
19. Mention the important classroom behaviours a mathematics teacher should develop.
20. What is an experimental research?
21. Mention the categories in Flander's classroom interaction system relating to 'Teacher Indirect influence'