

**VASAVI COLLEGE OF EDUCATION
MADAGDIPET PUDUCHERRY**

PONDICHERRY UNIVERSITY BED EXAM QUESTION PAPER

Course - 7(vii) Pedagogy of Mathematics – Part 1[First year]

Unit 1: Nature and Significance of Mathematics

10 mark

1. Explain the characteristics of mathematics and relationship of mathematics with life.(Dec 2019)
2. How the mathematics in day today activities in our life and illustrate with various field disciplines.(May 2019)
3. Why should mathematics be taught in schools? Illustrate how it is related to the different school subjects. (May 2018)

5mark

1. What are the meaning and characteristics of mathematics with examples.(May 2019)
2. List the logical structure, and symbolism of mathematics. (May 2019)
3. Explain the need and significance of teaching mathematics.(May 2016)

2mark

1. What are the need and significance of learning mathematics?(Dec 2019)
2. What do you think about the strategies of mathematics as science of measurement?(Dec 2019)
3. What is the scope of mathematics in day today life activities.(Dec 2019)
4. Why is 'symbolism' considered an important characteristic of mathematics?(May 2018)

Unit 2: Great mathematicians and contributions

10 mark

1. Explain in detail the contributions of five eminent mathematicians. (May 2019)
2. Explain in detail the contributions of any five eminent mathematician and their contributions to the development of mathematics.(May 2016)

5mark

1. Give a brief history of contribution of eminent mathematician 'Pythagoras'.(Dec 2019)
2. Give the contribution of Ramanujam to the development of mathematics.(May 2018)
3. Describe the contribution of Pythagoras towards mathematics.(May 2017)
4. Explain contribution of any one mathematician.(May 2017)
5. Give a brief history of Vedic mathematics.(May 2016)

2mark

1. Mention any one contribution of Rene Descartes to mathematics.(May 2018)
2. Give any two contribution of Euler to the development of mathematics.(May 2017)

Unit 3: Aims, Goals and Objectives of Learning Mathematics

10 mark

1. What do you understand by taxonomy of educational objectives. Describe with illustration, Bloom taxonomy of educational objectives in the cognitive domain. (May 2017)
2. Explain in detail the aims and objectives of learning mathematics. (May 2016)

5mark

1. How do you specify the objectives of the revised Bloom's Taxonomy of education.(Dec 2019)
2. Give the specific objectives and teaching point of content areas in mathematics of Trigonometry.(Dec 2019)
3. Explain the effective and psychomotor domains for teaching mathematics. (May 2019)
4. How will you achieve practical and cultural aims by teaching Geometry to high school students?(May 2018)
5. Write down the Instructional objectives for teaching the lesson 'Solving Quadratic Equation' to X standard students?(May 2018)
6. Explain Bloom's taxonomy in educational objectives.(May 2016)
7. Explain five specific objectives and teaching point of content areas in mathematics Algebra.(May 2016)

2mark

1. Write a specific objectives and teaching point of content areas in mathematics of Algebra. (May 2019)
2. Write down general instructional objectives for teaching the topic 'Distance between two points' in Analytical Geometry.(May 2018)

Unit 4: Lesson plan preparation

10 mark

1. How do you prepare a lesson plan and also approaches for writing lesson plan?(Dec 2019)
2. What are the components and characteristics of lesson plan preparation.(Dec 2019)
3. Describe the steps in Herbartian approach to lesson planning. (May 2017)
4. Prepare a lesson plan in mathematics on any topic of standard IX. (May 2017)

5mark

1. How do you prepare a lesson plan. (May 2019)
2. What are the characteristics of a good lesson plan in mathematics teaching.(May 2018)

2mark

1. Prepare teaching notes on a topic you are familiar within mathematics. (May 2019)
2. Write down purpose of lesson plan preparation. (May 2019)
3. What are the components of the lesson plan preparation? (May 2019)
4. List the format of typical lesson. (May 2019)
5. How do you developing good lesson plan. (May 2019)
6. What are the differences between a unit plan and a lesson plan in mathematics?(May 2018)
7. What is lesson plan? Explain briefly. (May 2016)
8. Prepare teaching notes on a topic you are familiar with in mathematics.(May 2016)

9. Differentiate Unit plan and Year plan in lesson plan preparation.(May 2016)

Unit5: Methods and Techniques of Teaching for Facilitating Learning Mathematics

10 mark

1. Explain the methods and techniques of teaching for facilitating (helping) learning mathematics and illustrate it.(May 2019)
2. How will use Inductive and deductive methods for teaching mathematics? Illustrate.(May 2018)

5mark

1. Differentiate between lecture-cum-demonstration and heuristic method.(Dec 2019)
2. Why assignments have deadlines and why it is important to meet there whenever possible?(Dec 2019), (May 2016)
3. Think about the following two mathematical ideas. Explain the techniques and the ways with which you might communicate there to others. (a) Phythagoras theorem. (b) the definition of rational number. (May 2019), (May 2016)
4. Differentiate between inductive and deductive method of teachings. (May 2019)
5. Why do you give the assignments to the class?(May 2019)
6. How will you differentiate synthetic method from analytic method?(May 2018)
7. How will you teach problem solving in mathematics to high school students?(May 2018)
8. How will you use review for teaching mathematics?(May 2018)
9. What is the comparison of Analytic and synthetic method of teaching?(May 2017)
10. Explain the method of lecture –cum – demonstration in teaching learning process.(May 2016)
11. Distinguish the analytic and synthetic method of teaching mathematics.(May 2016)

2mark

1. What are the place of drill, review and assignment in mathematics?(Dec 2019)
2. What are the types of assignment and explain briefly.(Dec 2019)
3. Why do you think about the deduction method of teaching?(Dec 2019)
4. Which are the methods suitable for classroom teaching of mathematics?(May 2019)
5. How will you establish Factor theorem inductively?(May 2018)
6. Why do teachers need methods and strategies for teaching mathematics?(May 2016)
7. Write down revision techniques for mathematics.(May 2016)

Unit 6: Models of Teaching Mathematics

10 mark

1. Explain in detail the models of teaching mathematics.(May 2019)
2. How can the 'Concept Attainment Model' be suitably used for teaching mathematics in higher secondary schools?(May 2018)
3. Briefly explain Piaget's stages of development with reference with to learning concepts in mathematics.(May 2017)
4. What is Five-E-model in teaching mathematics? Explain each of these five models. Illustrate them with suitable examples.(May 2016)

5mark

1. Explain Five –E-model with illustration.(Dec 2019)
2. Explain suchman's inquiry model. (May 2019)
3. How can 'inquiry training models of teaching' be profitably used in problem solving in higher secondary mathematics? Illustrate.(May 2017)
4. Describe the ideas of Piaget and Bruner about the formation of mathematical concepts. Illustrate.(May 2017)
5. Describe the concept attainment model of teaching.(May 2017)
6. What is Bruner's concept attaining model? Compare with Suchman's inquiry model.(May 2016)

2mark

1. What are the types of E-model? (Dec 2019)
2. Mention the components of a model of teaching.(May 2017)

Unit 7: Learning Resources and diverse classroom

5mark

1. Explain the uses of Mass media (community resource) in teaching mathematics.(Dec 2019)
2. What are the guidelines for effective uses of mathematics text book?(May 2019)
3. How do you organize the mathematics club?(May 2019)
4. What are the uses of work book in teaching mathematics?(May 2018)
5. How will you use community resources for teaching mathematics in high schools?(May 2018)
6. What are the pre-requisites of a good mathematics text book?(May 2018)
7. What is mathematics laboratory? What are its components? Explain its use. (May 2016)
8. List and explain five important resources in learning mathematics.(May 2016)

2mark

1. List the learning resources of the mathematics in the class room.(Dec 2019)
2. What are the mathematics exhibition and fair attended in your colleges. (May 2019)
3. What are the functions of the mathematics club?(May 2019)
4. Describe a mathematical exhibit you will plan to have for mathematics exhibition in a school.(May 2018)

Unit 8: Professional development of Mathematics teacher

10 mark

1. Explain the contribution to corporate life and to society, journals and the resources materials in mathematics education.(Dec 2019)

5mark

1. Write a note on uses of ICT for teacher Professional development.(Dec 2019)
2. How do you participation in conferences, seminars for the qualities of a mathematics teachers. (Dec 2019)
3. How could we ensure professional growth among mathematics teachers?(May 2018)
4. What are the criteria for evaluating teaching competence?(May 2017)
5. Brief explanation about activities of the mathematics.(May 2017)

2mark

1. Give the two professional training with illustration.(May 2019)
2. How would you teach mathematics based on the individual abilities of the students?(May 2018)
3. What are the skills required for a mathematics teacher to write articles in Journals?(May 2018)
4. Mention the categories in Flander's class room interaction system relating to 'teacher indirect influence'(May 2017)
5. What is Aptitude Treatment Interaction (ATI)? (May 2017)
6. What is the role of computer in mathematics education at the higher secondary level?(May 2017)
7. Mention the important classroom behaviors a mathematics teacher should develop.(May 2017)
8. Analyse the present teacher education programme in mathematics giving atleast four merits and four limitations.(May 2017)
9. What points should the teacher bear in mind for effective classroom behavior?(May 2017)
10. How can the teacher develop in the student's divergent thinking in mathematics?(May 2017)
11. What is qualification of a professional development of a mathematics teacher?(May 2016)

Unit 9: Teaching skills

10 mark

1. What is teaching skills and explain the teaching skill in teaching of mathematics.(Dec 2019)
2. What is micro-teaching? Explain how it helps in developing various teaching skills.(May 2018)
3. Define micro teaching. Explain the stages of micro teaching cycle. Illustrate them with suitable examples.(May 2016)

5mark

1. Explain the types of teaching skills.(Dec 2019)
2. Explain the types of questioning. (May 2019)
3. What do you thing about stimulus variation and explain it?(May 2019)

2mark

1. What are the types of questioning?(Dec 2019)
2. What is called reinforcement and its types?(May 2019)
3. Illustrate a micro-teaching cycle.(May 2018)

Unit 10: Research in Mathematics teaching

5mark

1. How do you prepare mathematics curriculum.(Dec 2019)
2. Explain any two psychological factors that influence the learning of mathematics at the higher secondary level.(May 2018)
3. Give a brief outline of the steps in the construction of an achievement test in mathematics.(May 2017)
4. Explain implication of research finding. (May 2017)
5. Describe the current trends in curriculum changes in mathematics education in india and the developed countries. (May 2017)

6. How do the factors maturation, motivation and perception influence the learning of mathematics.(May 2017)
7. What is the contribution to corporate life and society from research in mathematics teaching?(May 2016)

2mark

1. How will you improve the status of achievement in mathematics of the students at elementary level?(May 2018)
2. What is experimental research?(May 2017)
3. What are the three main ingredients in mathematical communication?(May 2016)
4. Who do you think you will need to communicate mathematics?(May 2016)
5. List several basic ways of overcoming the fear of talking about mathematics teacher?(May 2016)
6. Mention any two statuses of achievements in mathematics at elementary and secondary schools.(May 2016)