

D 52638

(Pages : 2)

Name.....

Reg. No.....

THIRD SEMESTER M.Ed. DEGREE EXAMINATION, DECEMBER 2018

Education

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 Define : Mathematics. Mention the characteristics of mathematics from the teaching context.
- 2 Highlight few significant mathematical contributions of Srinivasa Ramanujan.
- 3 Mention the steps involved with problem-solving in mathematics.
- 4 What is meant by a 'diagnostic test'? Mention the purposes of conducting a diagnostic test in mathematics.
- 5 What do you mean by 'Proof by contradiction'? Give an example.

(5 × 2 = 10 marks)

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

- 6 Discuss the aims and objectives of teaching mathematics at the secondary level.
- 7 Write a note on the empirical, intuitive and logical nature of mathematics by citing examples for each.
- 8 Distinguish between inductive and deductive methods of teaching mathematics with relevant illustrations.
- 9 Present your understanding on the behaviouristic approach of teaching mathematics with examples.
- 10 Formulate objectives and identify learning experiences to teach 'Trigonometric ratios' to the secondary students:
- 11 Explain 'Brainstorming' and 'Simulation' as the techniques of teaching mathematics citing relevant examples.
- 12 Elucidate 'Concept Attainment Model' as a mathematics teaching strategy that encourages critical thinking.

Turn over

- 13 Present a detailed overview on Robert M.Gagne's theory of teaching mathematics. Enumerate the educational implications of Gagne's theory.
- 14 Write a note on the informal assessment strategies in mathematics in the classroom context highlighting suitable illustrations.
- 15 Highlight the significant features of Bloom's Revised Taxonomy of educational objectives. Explain its importance in planning objectives for teaching of mathematics.
- 16 Discuss the role of evaluation in improving the teaching - learning process in mathematics.
- 17 Give a brief account on the following technology integration strategies in mathematics education.
 - (i) Multimedia presentation
 - (ii) E-content development

(8 × 5 = 40 marks)

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

- 18 Describe the principles to be kept in view while formulating mathematics curriculum and discuss the factors affecting change in mathematics curriculum :
- 19 Explain the following with relevant illustrations.
 - (i) Process oriented approach of teaching mathematics.
 - (ii) Inquiry - training model of teaching mathematics.
 - (iii) Project method.
- 20 Elucidate the complications involved in teaching and learning of mathematics. Highlight the importance of teacher's pedagogical content knowledge in mathematics. Mention few qualities expected of a good mathematics teacher.
- 21 What is meant by 'evaluation' ? Highlight the various steps involved in the construction of an achievement test in mathematics.

(2 × 15 = 30 marks)