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(Pages : 2)



FIRST SEMESTER B.Ed. DEGREE EXAMINATION, DECEMBER 2015

EDU 05.10—THEORETICAL BASES OF TEACHING MATHEMATICS

(2015 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

I. Answer *all* questions. Each question carries 2 marks :

- 1 What are the affective outcomes of learning Mathematics ?
- 2 Differentiate between axioms and postulates.
- 3 Define specification. Give any two specifications of knowledge level objective.
- 4 Briefly explain recommendations of NPE regarding mathematics education in schools.
- 5 What is ZPD ?
- 6 Name the Mathematician who wrote 'Siddhanta Siromani' and also write his one more contribution in the field of Mathematics.
- 7 Write two examples of correlating Mathematics with Social Science.
- 8 How will you make homework more useful for your students ?
- 9 Write down the limitations of lecture method in Mathematics class.
- 10 Write the need for revising Mathematics curriculum often.

(10 × 2 = 20 marks)

Part B

II. Answer any *ten* questions. Each question carries 4 marks :

- 11 Discuss Heuristic method of teaching Mathematics. Illustrate its application with the help of a suitable example.
- 12 Briefly explain any *four* types of curriculum.
- 13 Explain the taxonomy of objectives with respect to cognitive domain ?
- 14 Write a note on practical value of teaching Mathematics.
- 15 What is the place of drill work in the teaching of Mathematics ? How can we make it more effective ?
- 16 Explain the relevance of knowledge of History of Mathematics.
- 17 Explain the contributions of Euclid in Geometry.

Turn over

18. Explain the correlation within Mathematics.
19. What are the principles of curriculum construction and its organisation ?
20. Briefly outline Bruner's theory and its educational implications.
21. Briefly explain different steps in project method with the help of an example. Enumerate the merits and demerits of project method.
22. Distinguish between inductive and deductive methods of teaching Mathematics.

(10 × 4 = 40 marks)

Part C

III. Answer any *two* of the following. Each question carries 10 marks :—

23. Briefly explain Piaget's theory of cognitive development with suitable examples from Mathematics. What are the educational implications of Piaget's theory ?
24. What are the disciplinary and cultural values of learning Mathematics and examine whether these values are being realized as a result of the instruction being imparted in our schools ?
25. Briefly explain the development of Mathematics from vedic period to 20th century.

(2 × 10 = 20 marks)