

**AMT-01**

**ASSIGNMENT BOOKLET**

**Bachelor Degree Programme  
&  
Certificate Programme in Teaching of Primary School Mathematics**

**Teaching of Primary School Mathematics**  
**(Valid from 1<sup>st</sup> January, 2013 to 31<sup>st</sup> December, 2013)**



**School of Sciences  
Indira Gandhi National Open University  
Maidan Garhi,  
New Delhi-110068  
(For January 2013 cycle)**

Dear Student,

Please read the section on assignments and evaluation in the Programme Guide for Elective courses that we sent you after your enrolment. A weightage of 25 per cent, as you are aware, has been assigned for continuous evaluation of this course, **which would consist of one tutor-marked assignment**. The assignment is in this booklet.

### Instructions for Formatting Your Assignments

Before attempting the assignment please read the following instructions carefully:

- 1) On top of the first page of your answer sheet, please write the details exactly in the following format:

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ROLL NO.: .....

NAME : .....

ADDRESS : .....

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COURSE CODE : .....

COURSE TITLE : .....

ASSIGNMENT NO.: .....

STUDY CENTRE : ..... DATE : .....

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**PLEASE FOLLOW THE ABOVE FORMAT STRICTLY TO FACILITATE EVALUATION AND TO AVOID DELAY.**

- 2) Use only foolscap size writing paper (but not of very thin variety) for writing your answers.
- 3) Leave 4 cm margin on the left, top and bottom of your answer sheet.
- 4) Your answers should be precise.
- 5) While solving problems, clearly indicate which part of which question is being solved.
- 6) This assignment is **valid only upto 31<sup>st</sup> December, 2013**. If you have failed in this assignment or fail to submit it by 31<sup>st</sup> December, 2013, then you need to get the assignment for the next session and submit it as per the instructions given in the programme guide.
- 7) **You cannot fill the exam form for this course** till you have submitted this assignment. So solve it and **submit it to your study centre at the earliest**.

We strongly suggest that you retain a copy of your answer sheets.

We wish you good luck.

**ASSIGNMENT**  
(To be done after studying all 5 blocks of the course.)

Assignment Code: AMT-01/2013  
Maximum Marks: 100

**Note:**

1. In any question, whenever we ask you to suggest an activity we expect you to give one other than those covered in the units.
  2. For any question worth 5 marks the word limit is 200 words, for a 10 marks question it is 350 words, and for a 15 marks question it is 500 words.
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1. a) Give two real-life situations, with justification, in which a person would need to use the ability to **estimate** the sum or difference of two fractions. (4)
- b) Explain the differences in the following processes involved in the growth in mathematical understanding. Also provide an example of each, pertaining to 'data handling'.
  - i) known to unknown;
  - ii) particular to general. (8)
- c) Illustrate how the E – L – P – S sequence can be applied to help children understand the concept of 'angle'. (4)
- d) Is there any difference in the way you would plan a unit and a lesson? Explain your answer, with examples in its support. (4)
2. a) Explain why the three pre-number concepts need to be developed by a learner for him/her to be able to count. Your explanation needs to include specific examples. (6)
- b) i) Outline a series of three activities (each requiring a different level of learner's ability) to help a learner develop an understanding of 'place value'. (**Note** that giving a 'series' means that the links between the different activities must also be brought out.)  
ii) How would you modify these activities if you were doing them with a class of 30 learners? (9)
- c) There are broadly 5 different real-life situations which require multiplication. Give a word problem each for these situations, in the context of children playing in a field. (5)
3. a) Children have several misconceptions regarding negative numbers. List four of them. Also, for **any one** of these misconceptions, give a **detailed strategy** for helping the children correct it. (6)
- b) The diversity in any classroom has major implications for teaching mathematics. Explain this statement, with examples from teaching algebra to support your explanation. (5)

- c) Consider a classroom situation in which a teacher is introducing Class 6 children to operations on negative numbers. In this context, explain the different levels at which mathematics and language are related. (9)
4. a) Devise a game to help children improve their understanding of addition and subtraction of fractions. Also give two distinct activities you would use for assessing the efficacy of this game. (5)
- b) Explain the following statements, giving examples from the context of operations on decimal fractions (i.e., numbers like  $x y z r$ , where  $x, y, z, r$  are digits between 0 and 9):
- Mathematics permeates every aspect of your life.
  - In mathematics, truth is a matter of consistency and logic.
  - Articulating reasons and constructing arguments helps children learn mathematical processes. (10)
5. a) i) Explain the 5 levels of development in geometric understanding proposed by the Van Hiele. Illustrate your explanation in the context of learning the concept of volume. (12)
- ii) Further, do you agree that children in Class 6 usually think at Level 2? Give reasons for your answer.
- b) Can you think of a planar figure with exactly two axes of symmetry? Can this figure be a triangle? Give reasons for your answers. (4)
- c) Explain what inductive and deductive logic are, and illustrate them in the context of measuring time. (4)
- d) Give two reasons why children usually find mathematical notations confusing. Support your answer with illustrations pertaining to representing and reading time. How would you help your learners become comfortable with the notation? (5)