Semester End Examination
Paro College of Education
Royal University of Bhutan
Paro

Module: MAT 403, (Mathematics in Upper Primary 1)   **Programme:** B. Ed Pry   **Level:** 4

**Writing Time:** 3 hours   **Full mark:** 100

DIRECTION: *This question paper has only one section. The total weighting is 100 marks. The intended marks for the questions in this paper are given alongside every question in square brackets. You are **NOT** allowed to carry/use any electronic devices to answer the questions. Grid paper will be supplied for you to answer some of the questions.*

Total marks ($20 \times 5 = 100$ marks)

INSTRUCTION**:** *There are SIX questions in this section. Answer any **FIVE** questions. Sub-questions must be answered in order and completely for every question attempted.*
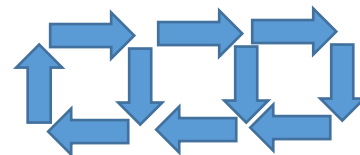
Question 1

a. Add: 37, 49 and 78 using three different methods. Explain and illustrate using diagrams wherever possible. Justify the advantage of using each method. [10]

b. Complete the table for each sequence of shapes made from arrows. Find the pattern to find the number of arrows required for each shape including the 50th shape.   [2 + 3 + 2 + 3]
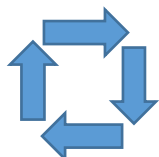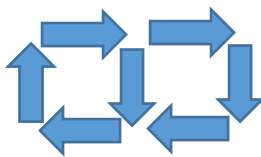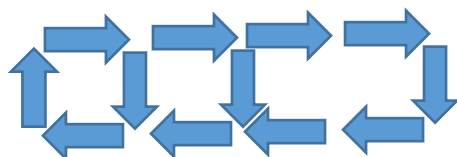

Shape 1   Shape 2   Shape 3

Shape 4

Shape	S_1	S_2	S_3	S_4	S_5	S_{50}
Number of arrows						
Rule						
Pattern						
Formula						

Question 2

(a) Subtract 89 from 123 using three different methods. Explain and illustrate using diagrams wherever possible. Justify the advantage of using each method.   [10]

(b) The following are marks scored by 36 students in mathematics.

45	67	89	65	46	98	68	79	45
34	89	25	68	65	57	65	69	76
65	68	75	45	34	23	56	90	13
45	65	70	80	75	67	59	88	49

Represent the data using:

i.   Box and whisker plot

ii. Stem and leaf plot $[6 + 4]$

Question 3

(a) Multiply 34 x 56 using three different methods. Explain and illustrate using diagrams wherever possible. Justify the advantage of using each method.

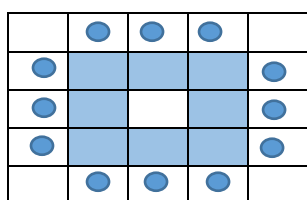   [10]

(b) Solve the following $u$sing counters:

   a) $-4 - 6$

   b) -3 x -5

   c) $\frac{15}{-5}$ $[3 + 3 + 4]$

Question 4

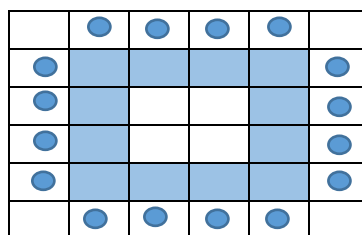(a) Add: $\frac{1}{2} + \frac{2}{3}$

   i)   Using Cuisenaire rods

   ii) Using grids

   iii) Using algorithm $[4 + 3 + 3]$

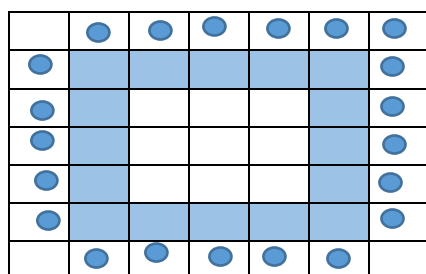(b) Rectangles are tables and oval shapes are chairs.

[2 + 2 + 3 + 3]

Tables and Chair
arrangement 1

Tables and Chair
arrangement 2

Tables and Chair
arrangement 3

Look carefully at the diagrams of the tables and chairs arrangement above and fill the table

Tables and Chairs arrangement	1	2	3	4	5	6	7	8	9	10
Number of tables	8	12	16							
Number of chairs	12	16	20	24	28					
Rule for number of tables										
Rule for number of chairs										

Question 5
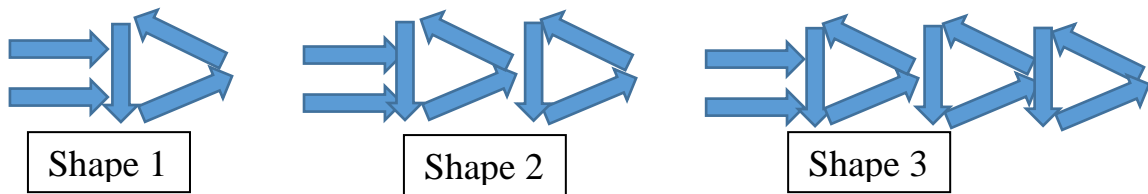
(a) Subtract $\frac{3}{4} \, from \, \frac{2}{3}$

   i) Using Cuisenaire rods

   ii) Using grids

   iii) Using algorithm

[4 + 3 + 3]

(b) Complete the table for each sequence of shapes made from arrows. Find the pattern to find   the
number of arrows required for each shape including the 50th shape.   [2 + 3 + 2 + 3]

| Shape 1 | | Shape 2 | | Shape 3 | |

Shape	S_1	S_2	S_3	S_4	S_5	S_{50}
Number of arrows						
Rule						
Pattern						
Formula						

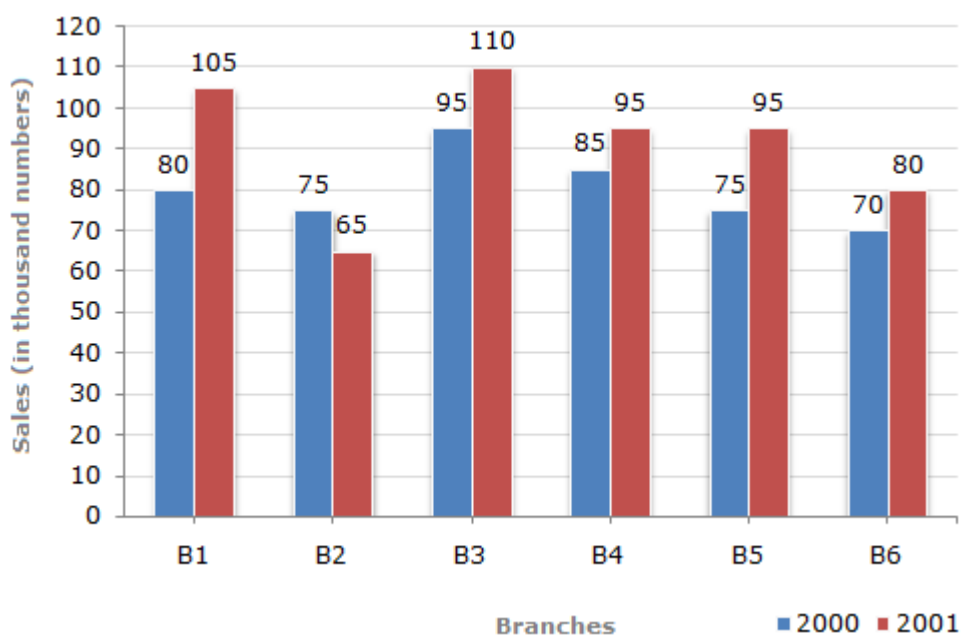**Question 6**

(a) Solve the following using decimal grid

   i) $0.7 - 0.45$ ii) $0.45 - 0.6$ iii) $0.7 + 0.45 + 1.2$ [3 + 4 + 3]

(b) The bar graph given below shows the sales of books (in thousand number) from six branches of a publishing company during two consecutive years 2000 and 2001.   [2 + 2 + 3 + 3]

Sales of Books (in thousand) from Six Branches - B1, B2, B3, B4, B5 and B6 of a publishing Company in 2000 and 2001.

i. What is the ratio of the total sales of branch B2 for both years to the total sales

of branch B4 for both years?

ii. Total sales of branch B6 for both the years is what percent of the total sales of branches B3 for both the years?

iii. Which branch sold the highest number of books in 2000?

iv. What is the average sales of all the branches (in thousand) for the year 2000?