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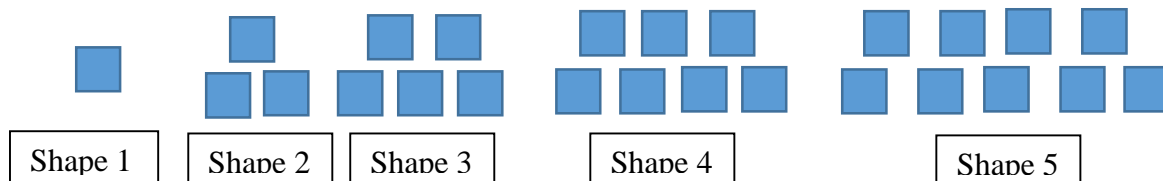
Writing Time: 3 hours   **Full mark:** 100

DIRECTION: *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. Answer any **FIVE** questions from six questions.*

Question 1

a. Add: 35, 27 and 12 using two different methods. Explain and illustrate using diagrams wherever possible. [10]

b. Complete the table for each sequence of shapes. Identify the pattern to find the number of squares required for each shape including the 50th shape. Find the nth term. [2 + 3 + 2 + 3]

Shape 1   Shape 2   Shape 3   Shape 4   Shape 5

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

Question 2

   a. The following are heights of 33 people in cm.   [10]

145	167	189	165	146	198	168	179	145
134	180	125	168	165	157	165	169	176
165	168	175	145	134	123	156	190	113
145	165	170	180	175	167			

Draw the following graphs:

     i. box and whisker plot

     ii. bar graph

   b. Find lower quartile, upper quartile, median and mode of the data given in the table above.
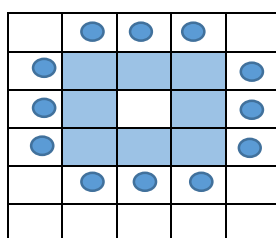
                                                 [5 + 3+ 2]

Question 3

   a. Multiply 26 x 45 using: [3 + 4 + 3]

     i. base ten blocks

     ii. line method

     iii. lattice method

   b. Solve the following by *u*sing integer counters: [3 + 7]

     i. $^{+}13 + {}^{-}18$

     ii. $^{-}15 \div {}^{-}3$

Question 4
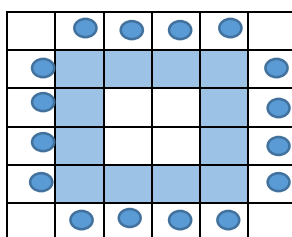
   a. Add $\frac{1}{3}$ and $\frac{1}{4}$ using: [6 + 4]

     i. grids

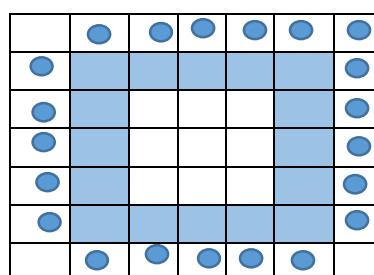   ii. algorithm

b. Shaded 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							
Rule/pattern for number of tables										
Rule/pattern for number of chairs										

Question 5

a. Subtract $\frac{2}{3}$ from $\frac{3}{4}$ using: [7 + 3]

    i. cuisenaire rods

    ii. algorithm

b. For the following number patterns, fill in the blanks and derive the nth term.   [4+6]

    i. 2   6   10   14 __ __ __ …

    ii. 100   98   96   94   __ __ __ …

Question 6

a. Solve the following using decimal grid   [3 + 4 + 3]
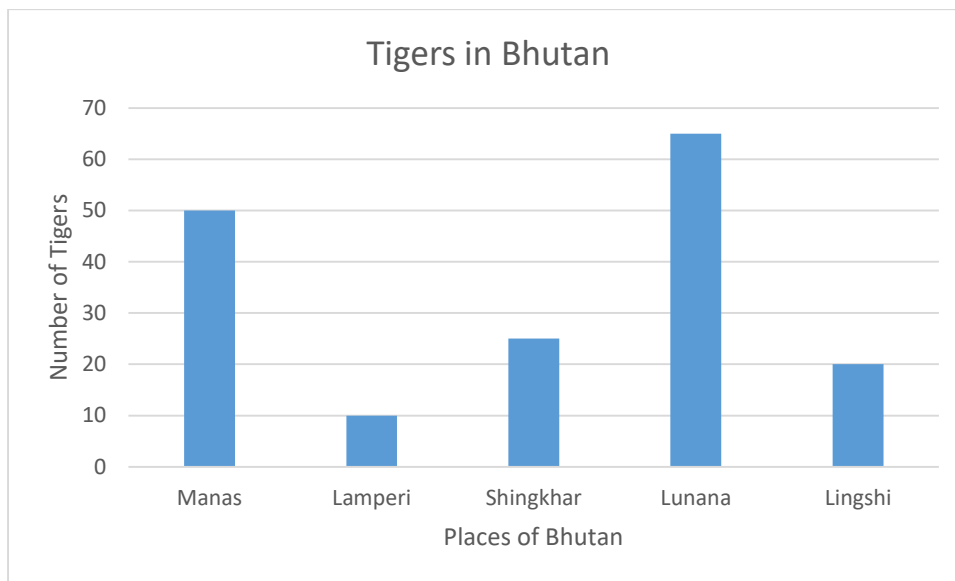
    i. $0.6 - 0.37$

    ii. $0.45 - 0.6 + 0.3$

    iii. $0.7 + 0.45 + 0.2$

b. Dorji counted the number of tigers in different parts of Bhutan.   [1 + 2 + 1+2 + 3+1]

Tigers in Bhutan

i.   Which part of Bhutan has the most number of tigers in Bhutan?

ii. What percent of tigers are in Lamperi?

iii. How many more tigers are in Lunana compared to Manas?

iv. What fraction of tigers are in Lingshi?

v. How many tigers are less in Lamperi compared to Manas in terms of percentage?

vi. Which part of Bhutan has the second lowest number of tigers?