

Spring Semester Examination 2018
Paro College of Education
Royal University of Bhutan
Paro

Module: MAT 403 (Maths in Upper Primary I) **Programme:** B.Ed. (P) **Level:** IV

Writing Time: Three hours

Full Marks: 100

Instruction: Do not write during the first 15 minutes. Use this time for reading the questions. You will get full three hours for answering the questions. Write the answers to all the questions in the answer sheets provided by the college. Read the directions carefully before answering the questions. You are NOT allowed to use any electronic device. You will be supplied with Grid and graph paper.

Instruction: This paper contains six questions. Attempt any FIVE out of six questions. Each question carries 20 marks. Mark for each sub question is given in the square bracket.

Question 1

- a. Add $\frac{2}{3} + \frac{3}{4}$ using grid. Explain and draw everything. [8]
- b. Find all possible factors of 64 using base ten blocks. [7]
- c. Solve 2345×67894 using lattice method. [5]

Question 2

- a. Illustrate $-\frac{2}{3} \div -\frac{3}{4}$ using appropriate manipulative. Explain all the BIG Ideas. [15]
- b. Illustrate -3×-5 by using integer counters. [5]

Question 3

- a. 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]

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

Question 4

- a. Karma solved the following problem as: $-3 - 12 = 9$
- i. Find his possible mistakes
- ii. How will you teach this problem visually to Karma? Illustrate your answer. [5 + 5]
- b. For the following number patterns, fill in the blanks, describe the pattern and write the mathematical rule [3+3+4]

i. $\frac{1}{7} \quad \frac{1}{14} \quad \frac{1}{21} \quad \frac{1}{28} \quad - \quad - \quad - \dots$

ii. $1 \quad 1 \quad 2 \quad 3 \quad 5 \quad 8 \quad 13 \quad - \quad - \quad - \dots$

iii. $1 \quad 4 \quad 9 \quad - \quad 25 \quad - \dots$

Question 5

- a. Solve -15×-7 using counters. Explain and illustrate with the help of diagrams. [10]
- b. i. Multiply $\frac{3}{5} \times \frac{3}{4}$ using grid. [5]
- ii. Add 0.7, 0.35 and 0.47 using grid. [5]

Question 6

- a. The height of 31 students in cm are given below:

144	155	167	146	157	168	171	165	141	154	173	168
147	169	166	175	180	163	164	165	177	159	178	179
165	167	168	169	167	166	166					

- i. Find median height, lower quartile, upper quartile and range.
- ii. Draw a box and whisker plot. [5+5]

b. Complete the following patterns. Describe the patterns and state the rule for each. [5+5]

i.

			45
	35		
34		52	61

ii.

Term	t_1	t_2	t_3	t_4	t_5	t_{20}	t_n
Number	6	11	16	21	26		