Autumn Semester End Examination - 2021
Paro College of Education
Royal University of Bhutan
Paro

Module: MAT 403, (Mathematics in Upper Primary 1) **Programme:** BEd (P)   **Level:** IV

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

Instructions: Use the first 15 minutes for reading the questions. You will get three hours for answering the questions. This paper contains SIX questions. Attempt any FIVE. All questions carry equal marks and the intended marks are given in brackets. You are NOT allowed to use any electronic devices. Grid papers will be provided to answer some of the questions.

Question 1

a. Frame a word problem for the operations $(418 - 214) \div 12$ and solve it using any one method other than the algorithm. [2 + 8]

b. There are 35 data. All or some data points are given in the plot. Write a set of data for the following plots. Find: i. Q_1 ii. Q_2 iii. Q_3 iv. Minimum data point   v. range vi. inter quartile range. [5 + 5]

A.

35   87

35   87

B.

35   87
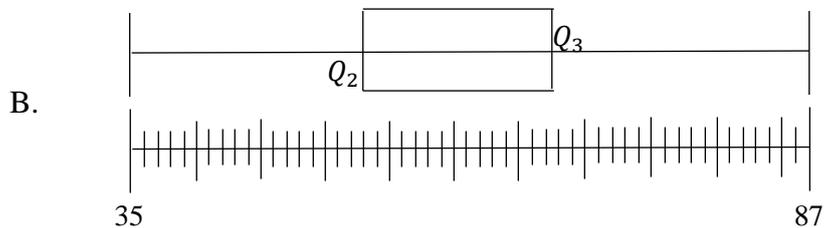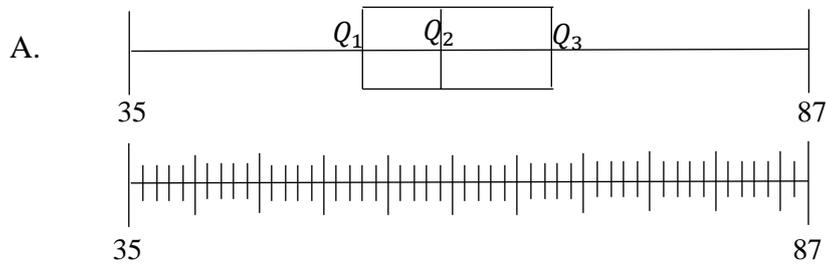
Question 2

a. Add $\dfrac{2}{3} + \dfrac{1}{2}$ using any two methods other than algorithm. Show the process with the help of appropriate illustrations. [10]

b. Explain how you are going to teach the given word problem using any one appropriate method other than algorithm. [6]

From sea level, a swimmer descends 4 feet per minute for 5 minutes and ascends 8 feet. Where is the swimmer in relation to the sea level now?

c. Find the Least Common Multiple and the Greatest Common Divisor of 30, 60, and 72 using a common method for both. [4]

Question 3

a. The following are heights in cm of 30 people. [5 + 5+5]

125	167	175	178	156	145	180	160	173	170
156	170	169	154	134	170	145	151	139	181
167	168	176	175	159	158	170	145	124	165

Represent the above data by:

i. Stem and leaf plot

ii. Box and whisker plot

iii. Bar Graph

b. A class IV student worked out a question on subtraction of fractions as shown below:

$$\frac{3}{4} - \frac{1}{2} = \frac{2}{2}$$

[1 + 1 + 3]

i. What is the mistake made by the child?

ii. What could be the possible reason for this mistake?

iii. What remedial solution would you suggest to avoid such mistake?

Question 4

a. Frame a word problem on $1.3 - 0.65$ and solve using any one method other than algorithm. [5]

b. Four friends visited a pizza shop and ordered 3 large size pizzas. If they shared equally, what fraction of pizza each person will get? Solve the question using appropriate illustrations. [5]

c. Find the possible missing values in the blank spaces by explaining each and every step.

[10]

$$7 \underline{\quad} 3 \underline{\quad} \underline{\quad} 1 \underline{\quad} 5 \underline{\quad} \text{ is divisible by } 132.$$

Question 5

a. Solve $\dfrac{3}{4} \times \dfrac{2}{3}$ using any two methods other than algorithm. [10]

b. Answer the questions by referring the bar graph given below. [5]
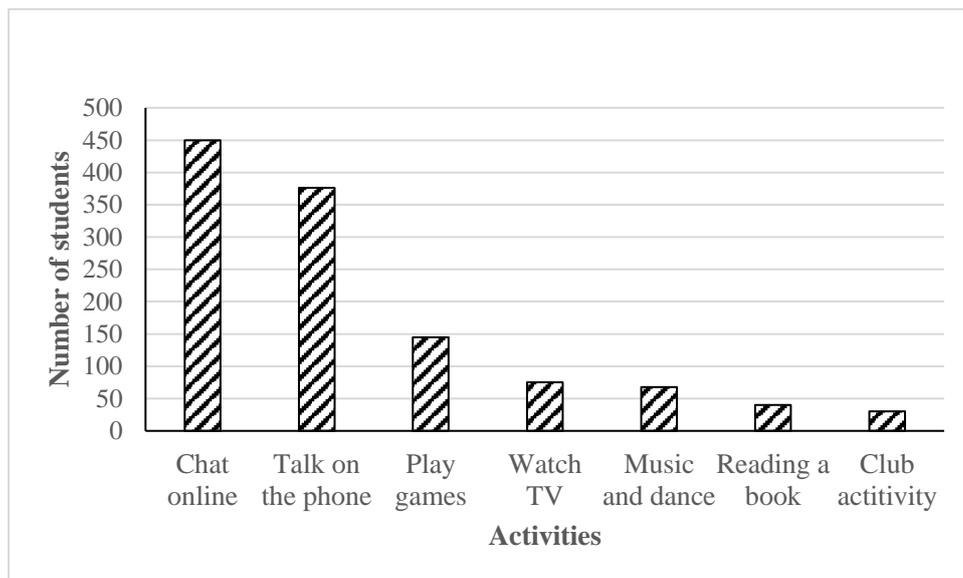
i.   Give a title to this graph.

ii.   Find the percentage of the highest activity after school activity.

iii. Make a data table for the bar graph above.

iv.   What is the ratio of the two almost equal after school activities?

v.   What is the percentage of the four least activities combined to the highest activity?

c. Solve 326×87 using any one method other than the algorithm [5]

Question 6

a. For the number sequences given below, fill in the blanks and find the nth and the 100th term. [10]

i.   8, 11, 16, 23, 32, 43, 56, 71, _____, _____, …

ii. $\dfrac{1}{81}, \dfrac{1}{27}, \dfrac{1}{9}, \dfrac{1}{3}, 1, 3, 9, 27, \underline{\quad}, \underline{\quad}, \dots$

b. Show the procedures clearly with the help of illustrations wherever possible to teach $(^-24 \div {}^-6)$ using either number line or counters. [5]

c. Pema bought 2.5 kilograms of sugar. She wanted to pack her sugar into separate packages that contain 0.5 kilograms of sugar each. How many packages of sugar can Pema make? Solve using any one method. [5]