Mathematics   **Writing Time : 2**

                                                                    Total Marks   :   100

READ THE FOLLOWING DIRECTIONS CAREFULLY:

1. Do **not** write during the first **fifteen minutes.** This time is to be spent on reading the questions. After having read the questions you will be given **two** hours to answer all questions.

2. In this **question paper**, you will find 15 questions in Section A and 14 questions in Section B (numbered from 2 to 15). You must answer **all** the questions. Each question in Section A is worth **2 marks**.

3. All answers for Section 'A' and 'B' **must** be written in the answer sheets provided by the school.

4. Once the examination begins, you will not be allowed to ask questions, speak with others or move around.

5. If you finish before the time, close the Answer Booklet, and sit quietly.

> DO NOT forget to write your name, class/section and the name
> of your school on the answer sheet(s).

IF YOU HAVE ANY QUESTIONS, ASK THEM NOW!
TURN THE PAGE

(15 Minutes is to be allowed for reading as well as for teachers on duty to explain the instructions)

SECTION A
15 Questions [30 Marks]
Answer all Questions.

Directions: *Each question in the section is followed by three possible choices of answers. Choose the correct answer and write it in the answer sheet provided by the school.*

Question 1.   **[2 × 15 = 30 marks]**

a)   What type of fraction is $7\frac{1}{2}$?

     A   Improper Fraction

     B   Mixed Fraction

     C   Unit Fraction

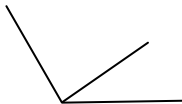b)   The difference between $\frac{4}{5}$ and $\frac{6}{15}$ is

     A $\frac{6}{15}$

     B $\frac{5}{15}$

     C $\frac{2}{15}$

c)   Which one of the following figures is an angle bisector?

     A

     B

     C
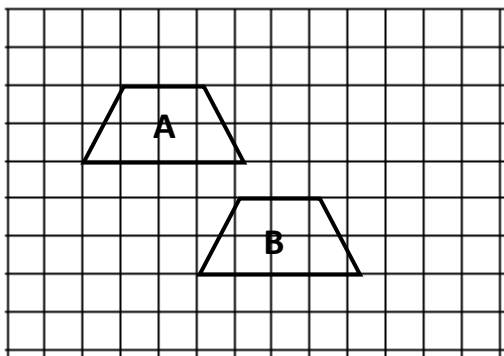
d)   The transformation of shape A to B is

A   translation.

B   rotation.

C   reflection.

e)   Which of the following is the best way to estimate $12.2 \div 8.3$?

A   increase one, decrease the other

B   increase both values

C   decrease both values.

f)   Which of the following products is correct?

A $32.5 \times 3.5 = 1137.5$

B $32.5 \times 3.5 = 113.75$

C $32.5 \times 3.5 = 11.375$

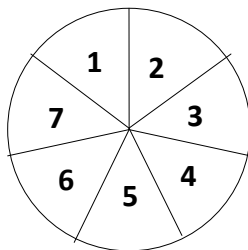
g)   If 1 tonne $= 1000$ kg, then 55 tonnes is equal to

A   550 kg.

B   5500 kg.

C   55000 kg.

h)   The area of triangle is 36 cm^2. The base is 6 cm. The height is

A   14 cm.

B   12 cm.

C   10 cm.

i)   The volume of a rectangular prism is 210 cm³. What are its dimensions?

    A   5 cm × 6 cm × 7 cm

    B   8 cm × 30 cm × 1 cm

    C   12 cm × 5 cm × 2 cm

j)   Dorji buys 8 apples for Nu 120. Find the cost of 1 apple.

    A   Nu 75

    B   Nu 50

    C   Nu 15

k)   It takes 15 men to dig a drain in 30 days. What is the ratio of men to days?

    A   1 : 3

    B   1 : 2

    C   1 : 1

l)   The common factors of 16 and 32 are

    A   {1, 2, 4, 8, 16}

    B   {1, 2, 4, 8}

    C   {1, 2, 4}

m)   Which of the following pairs of squared numbers gives the sums which are also squared numbers?

    A   4 and 9

    B   49 and 25

    C   36 and 64

n)   What is the theoretical probability of spinning a number less than 5 on the given spinner?

    A $\dfrac{4}{7}$

    B $\dfrac{5}{7}$

    C $\dfrac{6}{7}$

o)   The median of 2, 5, 7, 12, and 15 is 7 because the

    A   value of 7 occurs more often.

    B   mid value is 7.

    C   mean is 7.

SECTION B
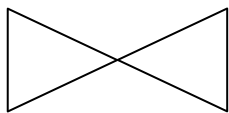(Answer all the questions in this section)

Question 2.

a) Use an example to show why the following equation is true.   **[2]**

Halves - Fourths = Fourths

b) Draw fraction strips to add $\dfrac{1}{3} + \dfrac{3}{6}$ and solve it symbolically.   **[3]**

Question 3.

a) Draw fraction strips to show that $\dfrac{2}{3} < \dfrac{3}{4}$.   **[2]**

b) Order the given fractions from the least to the greatest.   **[3]**

$$\frac{3}{4}, \frac{1}{6}, \frac{2}{3}$$

Question 4.

a) Write $5\dfrac{2}{3}$ as an improper fraction.   **[1]**

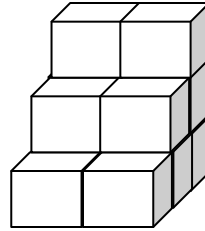b) What is the order of turn symmetry in the following shape? How do you know?   **[2]**

c) Rotate the given shape $\dfrac{1}{4}$ turn CW around the turn centre and re-draw the figure   **[2]**
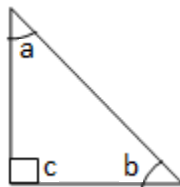
Question 5.

a) Look at the given cube structure and draw the following orthographic shapes. **[3]**

   i.   Right view

   ii.   Left view

   iii. Front view

Front

b) What are angles of a, b, c in the following triangle? Calculate their sum. **[2]**

Question 6.

a) How are the diagonals of rhombus and square alike? **[2]**

b) Write the distance covered for each time and speed given below. **[3]**

Time (hr)	Speed (km/hr)	Distance (km)
1.5	32.5	?
2.2	28.5	?
1.8	31.6	?

Question 7.

a)   Calculate.

   i) 550×0.01 **[1]**

   ii) $4284 \div 1000$ **[1]**

b)   Calculate: $8 \times (2.9 + 5.1) - 4.1 \times 2$ **[3]**

Question 8.

a)   Dorji divided a number in the following manner,

$$\begin{array}{r} 3.2 \\ 0.3\overline{)1.0} \end{array}$$

   Do you agree with what he did? Explain.   **[2]**

b)   i.   Pema drops a metal box into 560 ml of water. The water level rises

         to 890 ml. What is the volume (in cm^3) of the metal box? $[1\frac{1}{2}]$

      ii.   What would be the volume, if the water level had risen to 2*L*? $[1\frac{1}{2}]$

Question 9.
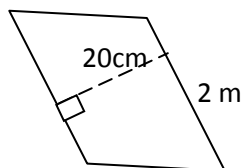
a)   i)   Write 10:35 pm in 24 hour time format.   **[1]**

      ii) Write 21:33 hour in 12 hour time format.   **[1]**

b)   Find the area of the given parallelogram. Write the answer in cm^2.   **[3]**

Question 10.

a)   Order these capacities from the greatest to the least.   **[1]**

      450 ml , 2.3 L , 2500 ml , 0.55 L

b)   Dawa mixed different ratios of red and white paint to make four different

      shades of red.

Shade of red paint	Cans of red	Cans of white
A	4	1
B	4	2
C	4	3
D	4	4

      i)   Which shade of paint is the lightest? How do you know?   **[2]**

      ii) Which shade of paint is the darkest?   **[1]**

c)   Sketch a picture that shows the ratio 3: 5.

Question 11.

a)   What are the unit rates of the following?   **[2]**

i)   210 km / 3 hr

ii)   5 kg of maize cost Nu. 450

b)   Write 0.58 as a fraction and as a percent.   **[2]**

c)   Complete: 4,300,000 = _____ million.   **[1]**

Question 12.

a)   4 is not a common factor of 15 and 18. List any three other numbers that

are not the common factors for the above pair.   **[3]**

b)   Write each in a standard form.   **[2]**

i)   Six Billion Fifty Four Million Hundred and One.

ii)   145 ten thousand.

Question 13.

a)   What integer can you use to describe each of the situations below?   **[2]**

i)   The temperature has fallen 4 degrees from 0°.

ii)   It is five minutes after breakfast.

b)   Find the mean, median and mode for the following set of numbers.   **[3]**

3 , 6 , 8 , 9 , 9 , 12 , 16

Question 14.

The weights of a group of students' in (kg) are given as

40 , 34 , 28 , 24 , 36 , 26 , 41 , 42 , 37 , 32

a)   What is the least weight?   **[1]**

b)   Draw stem and leaf plot.   **[3]**

c)   Find the difference between the least and the greatest weight.   **[1]**

Question 15.

a)   Plot these points on a co-ordinate grid.   **[3]**

(-2, +2)   (2, -5)   (-5, -3)

Connect them in order and describe the shape that you have created.

b)   Draw a line graph for the data given below.   **[2]**

Days	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Temperature (^{0}C)	25	40	24	20	31	35