## Mathematics

## Writing Time : 2 Hours <br> Total Marks : 100

READ THE FOLLOWING DIRECTIONS CAREFULLY:

1. Do not write for the first fifteen minutes. This time is to be spent 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 is over, 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 <br> TURN 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
Direction: Each question in this section is followed by three possible choices of answers. Choose the correct answer and write it down in the answer sheet provided by the school.

## Question 1.

a) What kind of fraction is $\frac{3}{2}$ ?

A Unit fraction
B Improper fraction
C Proper fraction
b) The sum of $\frac{1}{2}$ and $\frac{1}{3}$ is

A $\frac{1}{6}$
B $\frac{2}{6}$
C $\frac{5}{6}$
c) Identify the shape that will tessellate.

A


B


C

d) Identify the transformation used in transforming shape A to B

A Translation
B Rotation
C Tessellation

e) Which one of the following estimates the best for $32 \div 1.2$ ?

A $\quad 30 \div 1.0$

B $\quad 30 \div 1.5$
C $\quad 40 \div 2.0$
f) The product of $3.9 \times 12.2$ is

A $\quad 475.8$
B 4.758
C $\quad 47.58$
g) If the area of a parallelogram is $80 \mathrm{~cm}^{2}$ and its height is 8 cm , then the base is

A $\quad 88 \mathrm{~cm}$
B $\quad 72 \mathrm{~cm}$
C $\quad 10 \mathrm{~cm}$
h) How many kilograms would be equal to 25 tonnes?

A $25,000 \mathrm{kgs}$
B $\quad 2500 \mathrm{kgs}$
C $\quad 250 \mathrm{kgs}$
i) What is the simplest ratio of leaves to flowers?


A $\quad 1: 2$
B $\quad 2: 1$
C $2: 4$
j) What percentage of the grid is shaded?

A $40 \%$
B $48 \%$
C $52 \%$

k) How many whole numbers are in between 484 million and 84 million?

A $\quad 40$ million
B $\quad 400$ million
C 400 thousands

1) Which of the following pair of squared numbers gives the sum which is also a squaro number?

A $\quad 49$ and 25
B $\quad 4$ and 9
C 9 and 16
m) The mean of $6,10,10$ and 14 is 10 because:

A The value of 10 is occurring most often
B $\quad$ The value 10 lies between 8 and 14
C The total is 40 when divided by 4 gives 10
n) What is the coordinate of point A?

A $(+6,+3)$
B $\quad(-6,+3)$
C $(+6,-3)$

o) Which statement best describes the trend in the graph below?

A The temperature increases
B The temperature decreases
C The temperature increases and decreases


## SECTION B

## (Answer all the questions in this section)

## Question 2.

a) What fraction comparison do the following pictures show?

b) Draw diagrams of fraction strips to subtract $\frac{1}{3}$ from $\frac{3}{6}$ and also solve it symbolically.

## Question 3.

a) Write $\frac{25}{4}$ as a mixed number.
b) Which decimal is greater, 2.3 or 2.03 ? How do you know?
c) Arrange the given fractions from the least to the greatest.

$$
\frac{3}{4}, \frac{4}{9}, \frac{2}{3}, \frac{12}{15}
$$

## Question 4.

a) Describe how you can transform shape A to shape B using combination of two transformations.

b) Measure the angles of the given triangle.


## Question 5.

a) Name the following quadrilaterals.
i)

ii)

b) Use the given cube structure to draw the following orthographic shapes.
i) Front view
ii) Left view
iii) Back view


Front
[2]

## Question 8.

a) Find the volume of the given cuboid.

b) Sketch and level two different rectangular prisms both of which have a volume of $40 \mathrm{~cm}^{3}$.

## Question 9.

a) Rewrite the given time in 24-hour clock time.
i) $\quad 1: 23 \mathrm{pm}$
ii) 12 noon
iii) 5:30 am
b) Calculate the area of the given shape.


## Question 10.

a) Rename $45 \%$ as a fraction and as a decimal.
b) $60 \%$ of 45 students are girls. Find the number of boys and girls.

## Question 11.

a) Deki can write 32 words in 1 minute and Pema can write 450 words in 15 minutes. How many words can Deki write in 15 minutes? Who can write more words?
b) What percent of numbers from 1 to 100 are multiples of 11 in the 100 chart given below? How do you know?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

## Question 12.

a) What place is to the right of the one thousandth's places in the place value chart given below? How many hundredths are there in the number 234.2345? How many tens are there in the same number?

| Thousand | Hundreds | tens | Ones |  | Tenth | Hundredth | Thousandth | ? |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
|  |  |  |  |  |  |  |  |  |

b) Find the common factors of 36 and 42 .

## Question 13.

a) What number on the number line is twice as far from ${ }^{-1}$ as it is from +1 .
[2]

b) i) Choose and write down all the prime numbers from the box below.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |  |
|  | 15 | 16 | 17 | 18 | 19 | 20 |  |

ii) Why are they prime numbers?

## Question 14.

a) The ages of a group of people at a party are listed below.
$9,12,35,35,58,56,45,21,8$
i) What is the median age?
ii) What is the mode age?
b) Create a double bar graph to show the number of boys and girls of different classes Use the given data.

| Class | No. of boys | No. of girls |
| :---: | :---: | :---: |
| III | 20 | 30 |
| IV | 18 | 26 |
| V | 22 | 18 |
| VI | 20 | 22 |

## Question 15.

a) The following Stem and Leaf plot displays the ages of a group of people. Use it to answer the given questions.

i) How many persons are 12 years old?
ii) How many people are there in the group?
iii) What is the age difference between the oldest person and the youngest person?
b) (i) What is the probability of getting the number 5 when you roll a six sided die?
(ii) What is the probability of getting an even number when you roll a six sided die?

