

Mathematics

Writing Time : 2 Hours

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 25 questions in Section A and 5 questions in Section B. 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!

TURN PAGE

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

SECTION A
25 Questions [50 marks]
Answer ALL questions

Direction: each question in this section is followed by four possible choices of answers. Choose the correct answer and write it down in the answer sheet provided by the school.

1. $A = \{a, b, c, d\}$, $B = \{e, f, g, h\}$. Find $n(A \cap B)$.
A ϕ .
B 0.
C 4.
D 8.

 2. The L.C.M and the H.C.F of 16, 24 and 40 are
A 212 and 24.
B 230 and 16.
C 240 and 8.
D 260 and 8.

 3. What is the value of $27 \div ^{-}3 \times ^{-}125$?
A -125
B +125
C -1125
D +1125

 4. The expanded notation of the number 670059 is
A $6 \times 10000 + 7 \times 1000 + 5 \times 10 + 9 \times 1$.
B $6 \times 100000 + 7 \times 10000 + 5 \times 10 + 9 \times 1$.
C $6 \times 1000000 + 7 \times 100000 + 5 \times 10 + 9 \times 1$.
D $6 \times 100000 + 7 \times 10000 + 5 \times 100 + 9 \times 10$

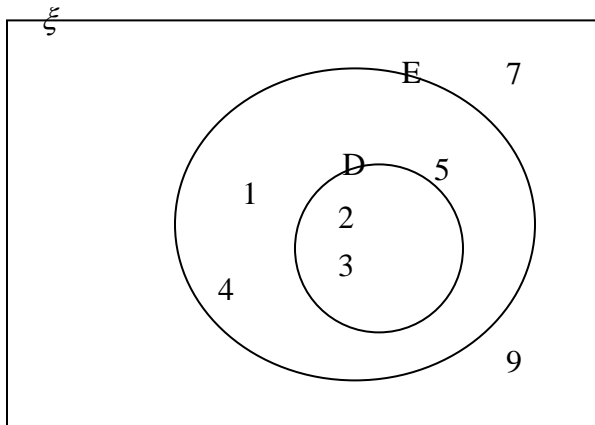
 5. What is the product of 0.35×1.27 ?
A 1.4345
B 0.4445
C 0.4345
D 0.04445

 6. A bag of sugar weighs 50 kg and a bag of cotton weighs 6,000 g. What is the ratio the weight of cotton to the weight of sugar?
A 0:5
B 1:9
C 3:25
D 25:3
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7. If $A = \{x : x \in N \text{ and } 1 < x < 4\}$ and $B = \{x : x \in N \text{ and } 2 < x < 6\}$, find $A \cap B$.
- A $\{1, 2, 3, 4, 5, 6\}$
 - B $\{1, 2, 3, 4\}$
 - C $\{3, 4\}$
 - D $\{3\}$

8. From the diagram, the elements of $E \cup D$ are

- A $\{1, 2, 3, 4, 5, 7, 9\}$.
- B $\{1, 2, 3, 4, 5\}$.
- C $\{1, 4, 5\}$.
- D $\{2, 3\}$.

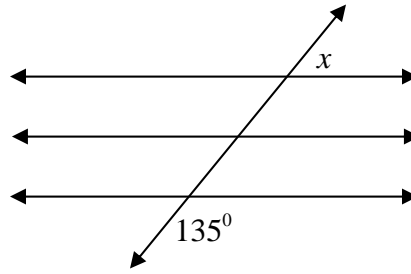


9. Which one of the following groups of numbers are in ascending order?
- A 24999, 24821, 24713, 24324
 - B 24324, 24713, 24821, 24999
 - C 24821, 24334, 24999, 24713
 - D 24999, 24713, 24821, 24324
10. Which one of the following algebraic expressions has three terms?
- A $5x + 7y + 3z$
 - B $7x + 2y + 2x$
 - C $6x + 13$
 - D $5z + 3z$
11. 45% of a class is girls. Find the percentage of boys.
- A 35%
 - B 45%
 - C 55%
 - D 76%

12. Which one of the following sets of numbers are the values of y in the table for $y = 3x - 2$?
- | | | | | | | |
|----------|--------------|-----|---|---|---|---|
| A | -1,-4,-7,-10 | x | 1 | 2 | 3 | 4 |
| B | 1, 4,-7,-10 | Y | | | | |
| C | -1, 4, 7,-10 | | | | | |
| D | 1, 4,7,10 | | | | | |
13. Mr Dorji did $\frac{2}{3}$ of a journey by bus, $\frac{1}{4}$ by car and the rest by air. What fraction of his journey was by air?
- A** $\frac{1}{12}$
- B** $\frac{4}{45}$
- C** $2\frac{10}{27}$
- D** $3\frac{10}{27}$
14. The product of $(y + 2)(y - 3)$ is
- A** $y^2 - 3y - 6$.
- B** $y^2 + y + 6$.
- C** $y^2 - y - 6$.
- D** $y^2 - 5y - 6$.
15. Simplification of $\frac{4}{5}$ of $\left(\frac{4}{9} + \frac{2}{3}\right) \div 2\frac{2}{3}$ is
- A** $2\frac{10}{27}$.
- B** $1\frac{1}{3}$.
- C** $\frac{1}{3}$.
- D** $\frac{2}{7}$.
16. If $4 = \frac{x}{3} + 2$, what is the value of x ?
- A** 15
- B** 10
- C** 7
- D** 6
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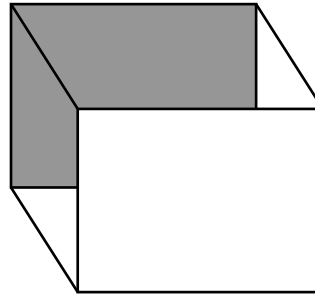
17. What is the value of $\angle x$ in the diagram given on the right?

- A 45°
- B 55°
- C 60°
- D 155°



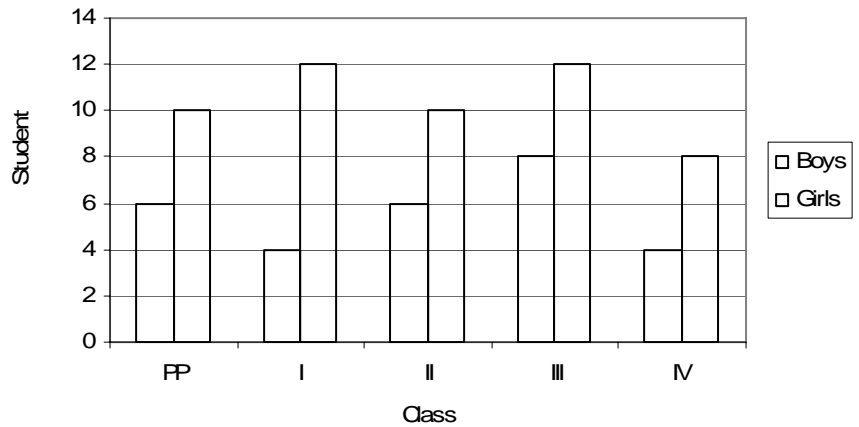
18. The total surface area of the cube on the right is 96 cm^2 . Find the area of the shaded face.

- A 4 cm^2
- B 16 cm^2
- C 32 cm^2
- D 48 cm^2



19. The column graph below represents the number of students in classes PP to IV in a school. What is the total number of girls in the school?

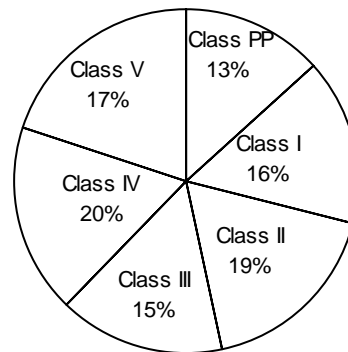
- A 52 girls
- B 45 girls
- C 28 girls
- D 16 girls



20. The sides of a triangle are $10x \text{ cm}$, $8x \text{ cm}$ and $7x \text{ cm}$. The perimeter is 100 cm . Find x in cm .

- A 1 cm
- B 2 cm
- C 3 cm
- D 4 cm

21. The area of a right angled triangle is 120 cm^2 . If its base is 12 cm long, what is its height?
A 20 cm
B 30 cm
C 35 cm
D 40 cm
22. The total surface area of a cube is 216 cm^2 . Find the side of the cube?
A 4 cm
B 6 cm
C 10 cm
D 36 cm
23. How many square tiles each of 5 m long are required to cover the floor of a room of area 2500 m^2 ?
A 25 tiles
B 50 tiles
C 100 tiles
D 500 tiles
24. 6 is subtracted from the product of x and 2. The result is 20. Find x .
A 4
B 7
C 12
D 13
25. The pie chart on the right shows the number of students in classes PP to V in a school. There are 800 students in the school. Find the number of students in class V.



- A** 152 students
B 136 students
C 128 students
D 120 students

SECTION B
5 questions [50 marks]
Answer ALL questions

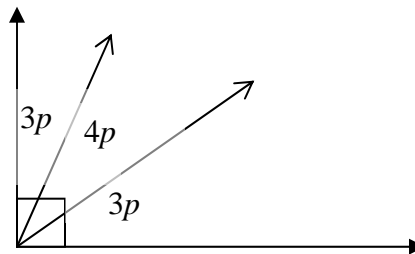
Directions: answer the questions given below as directed. All answers should be written in the answer booklet provided by the school. The intended marks for each question is given in the brackets [].

Question 1

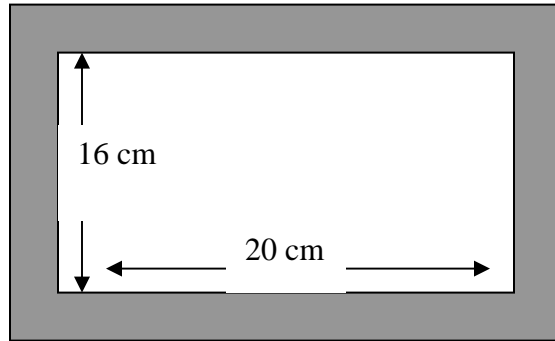
- (a) Out of 64 girls, 48 read comic books, 30 read magazines and 14 read both.
 (i) How many students read only comic book? [1]
 (ii) How many students read only one type of book? [1]
- (b) Solve $1\frac{1}{3} \div 1\frac{1}{4} - \frac{4}{5} \times \frac{1}{3} + \frac{2}{3}$. [2]
- (c) A class contains 50 students, out of which 20 are girls. Find the percentage of boys. [2]
- (d) Simplify $(3-5) \div (6-7) + ^{-}6 \div ^{+}3$. [2]
- (e) $U = \{\text{Natural numbers less than 10}\}$ and $A = \{\text{Multiples of 2 less than 9}\}$.
 List the elements of A complement. [2]

Question 2

- (a) Subtract $5x^2 - 3y^2 + 2z^2$ from $x^2 - 4y^2 - 3z^2$. [2]
- (b) One angle of a triangle is $(2x)^\circ$, another is $(3x)^\circ$ and the third angle is $(4x)^\circ$. Find the value of x . [2]
- (c) Find the value of p . [2]



- (d) The shaded region is 5 cm all around. Find the area of the shaded portion.



- (e) The table below shows the time spent on physical exercises in a physical education class by 23 students.

Students	1	4	5	6	7
Time in seconds	150	120	30	90	60

Represent the information by bar graph.

[2]

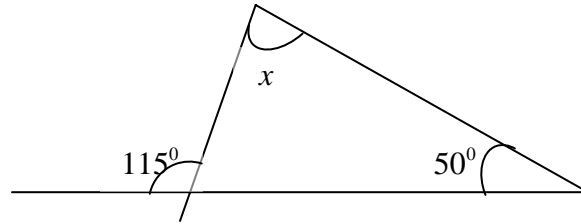
Question 3

- (a) An article which costs Nu. 150 is sold for Nu.180. What is the profit percent? [2]
- (b) If $x = 2$, $y = -4$ and $z = -5$, find the value of $(x + y + z)^2$. [2]
- (c) Dorji bought a number of kites for Nu.84. Tashi bought some of the same kites for Nu. 14. What is the greatest cost of a kite? [3]
- (d) Find the L.C.M of 10, 20 and 25 using division method. [1]
- (e) Put $>$, $<$ or $=$ in the box.
 25% of 80 50% of 40. [2]

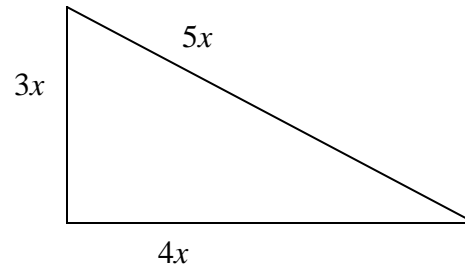
Question 4

- (a) Sonam Dema has Nu. 1,200 in her purse. She spends Nu.800 and gives Nu.400 to her brother. Calculate the fraction of money she spends. [1]
- (b) Find the value of p in the equation $3p - 7p = 4p - 16$. [2]
-

- (c) Study the figure and calculate the value of x .



- (d) Calculate the perimeter of the figure given below. [2]



- (e) The table below shows the frequency distribution of goals scored by a class in the interclass tournament.

Teams	Tally	Frequency
A		5
B		3
C		4
D		5
E		3

- Calculate the percentage of goals scored by team C. [2]

Question 5

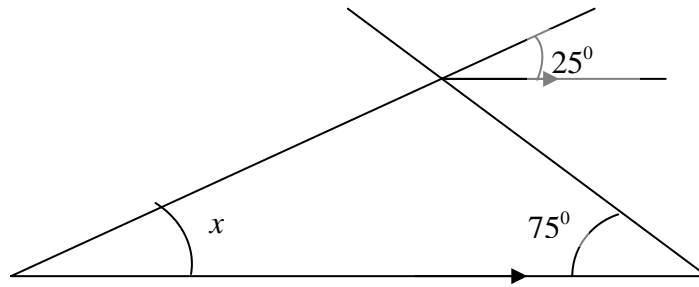
- (a)
- (i) Simplify $1\frac{1}{4} - \frac{2}{3} \div \frac{5}{6}$. [1]
- (ii) Rewrite 0.00025 as fraction. [1]
- (b) There are 72 eggs in a basket. $\frac{2}{3}$ of the eggs are taken out. Find the number of eggs left in the basket? [2]
- (c) Find the product of 34000 and 0.001. [2]

(d)

(i) Find the value of $-2(7 - ^{-}3 + ^{-}2 - ^{+}4)$.

(ii) Study the figure given below and find the value of x .

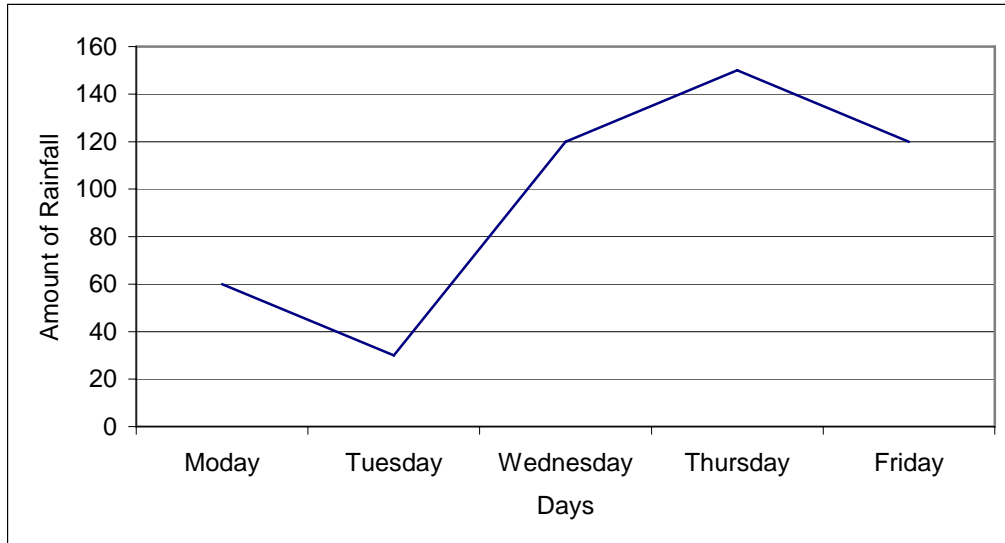
[1]



(e)

The graph below shows the amount of rainfall in cm^3 from Monday to Friday. What is the average amount of rainfall from Monday to Friday?

[2]



Graph to be inserted