परमाणु ऊर्जा शिक्षण संस्था
Atomic Energy Education Society
कार्यपत्रक / Worksheet (2025-26)

कक्षा/Class: VII **विषय/Subject: Mathematics** **माह/ Month: April** **अंक/Marks: 40**

दियागयापाठ्यक्रम/Portion covered: Chapter 01 (Larger Numbers Around Us)

विद्यार्थी का नाम/Name of the student: _____

अनुक्रमांक/Roll No._____ कक्षा/अनुभागClass /Sec.:_____दिनांक /Date: _____

SECTION- A (10×1= 10 marks)

1. 18 ton = ? kg
   (a) 180 (b) 1800 (c) 32 (d) 18000

2. A flask has 5 liters of lemonade. How many glasses, each of 200ml capacity can it fill?
   (a) 25 (b) 35 (c) 45 (d) 15

3. Sunny is a famous cricket player. He has so far scored 7,280 runs in test matches. He wishes to complete 10,000 runs. How many more runs does he need?
   (a) 2520 (b) 2500 (c) 2720 (d) 2000

4. The greatest five- digit number using the digits 3, 1 and 0:
   (a) 30001 (b) 10003 (c) 31000 (d) 13000

5. 800ml = ? L
   (a) 8 (b) 0.8 (c) 80 (d) 800

6. One crore one lakh one thousand ten can be represented in Indian system as:
   (a) 10010010 (b) 10110010 (c) 10101010 (d) 10101110

7. How many coins should be stacked to match the height of the Statue of Unity (182m). Assume each coin is 1 mm thick?
   (a) 182 (b) 1820 (c) 18200 (d) 182000

8. How many lakhs make a billion?
   (a) 10,000 (b) 1000 (c) 100 (d) 10

9. Can multiplying a 3 digit number with another 3 digit number give a 4 digit number ?
   (a) yes (b) no (c) can't say (d) None of these

10. How many number of zeroes are there in 100 lakh ?
   (a) 5 (b) 6 (c) 7 (d) 8

SECTION- B(04×02= 08 marks)

11. Write each of the number given below in words:
   i. 3,00,600
   ii. 5,40,005

12. Write the corresponding number in the Indian place value system for each of the following:
    i. Nine lakh twenty thousand four hundred and three.
    ii. Twenty lakhs two thousand thirty-five.

13. Write two different ways to get 40629 and write an expression for the same.

14. The word "zero" and "one" share letters "e" and "o" . the words "one" and "two" share a letter "o" and the words "two" and "three" also share a letter "t" how far do you have to count to find two consecutive numbers which do not share an English letter in common?

SECTION – C(03×03= 09 marks)

15. Compare and write < , > or = :
    i. 30 thousand ____ 3 lakhs
    ii. 500 lakhs ____ 5 million
    iii. 800 thousand ___ 8 million

16. The handy hundreds only has a +100 button. How many times should it be pressed to show:
    i. 97600? _____
    ii. How many hundreds are required to make one lakh?
    iii. Fifty three thousand ? _____

17. Find quick ways to calculate these products:
    i. $250 \times 160 =$ _____
    ii. _____ × _____= 8000000
    iii. $81 \times 250 =$ _____

SECTION D(01×05= 05 marks)

18. Write down the nearest neighbors of the number 27,06,28,421
    i. Nearest thousand
    ii. Nearest ten thousand
    iii. Nearest lakh
    iv. Nearest ten lakh
    v. Nearest crore

SECTION- E(02×04= 08 marks)

19. Rohan has a shop from last few years in which he was selling different items at their respective cost per kg or per one quantity.

Things	Price
Apples	₹ 40 per kg
Oranges	₹ 30 per kg
Combs	₹ 3 for one
Tooth brushes	₹ 10 for one
Pencils	₹ 1 for one
Note books	₹ 6 for one
Soap cakes	₹ 8 for one

The sales during the last year

Apples	2457 kg
Oranges	3004 kg
Combs	22760
Tooth brushes	25367
Pencils	38530
Note books	40002
Soap cakes	20005

Based on the above information, answer the following questions:

i. Find the total money Rohan got by selling oranges.
ii. Find the total money Rohan got by selling apples.
iii. Find the total money Rohan got by selling pencils and notebook together.

OR

Find the total money Rohan got by selling Tooth brushes, combs and soap cakes together.

20. Population process are typically characterized by process of birth and immigration, and of death, emigration and catastrophe, which corresponds to the basic demographic processes and broad environment effects to which a population is subject.

The population of Telangana state in 2011 was 35193978 and the estimated population of the state in 2023 is 38157311

Based on above information, answer the following questions:

i. Write the population of 2023 inIndian system of numeration.
ii. Write the place value of "1" in 35193978.
iii. Write the population of 2011 in Indian system of numeration and also in International system of numeration.

OR

Write the population of 2011 and 2023 in expanded form.

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कक्षा/Class: VII **विषय/Subject: Mathematics** **माह/ Month: June** **अंक/Marks: 40**

दियागयापाठ्यक्रम/Portion covered: Chapter 02(Arithmetic Expressions)

विद्यार्थीकानाम/Name of the student: _____

अनुक्रमांक/Roll No._____ कक्षा/अनुभागClass /Sec.:_____दिनांक /Date: _____

SECTION- A (10×1= 10 marks)

1. What is the value of the expression: 5 + 3 × 2?

A) 11 B) 16 C) 13 D) 8

2. Which operation is performed first in the expression: 4 + 6 ÷ 3 × 2 - 1?

A) Addition B) Subtraction C) Multiplication D) Division

3. What is the value of (8 + 4) × 3 - 6?

A) 42 B) 18 C) 30 D) 36

4. Simplify: 15 - 3 × 2 + 4

A) 19 B) 13 C) 9 D) 10

5. Which expression is equivalent to: 6 × (4 + 2)?

A) 6 × 4 + 2 B) 6 + 4 × 2 C) 6 × 6 D) 6 + 4 + 2

6. What is the correct order of operations in arithmetic expressions?

A) Addition, Subtraction, Multiplication, Division B) Division, Multiplication, Addition, Subtraction
C) BODMAS D) BAMOD

7. Evaluate: 24 ÷ (4 × 2) + 1

A) 3 B) 2 C) 4 D) 1

8. Simplify: (12 ÷ 4) + (3 × 2)

A) 9 B) 6 C) 8 D) 12

9. If x = 3, what is the value of the expression: 2x + 5?

A) 11 B) 10 C) 9 D) 8

10. Which of the following is an arithmetic expression?

A) $4x + y = 10$ B) $3 + 7 \times 2$ C) $x > 5$ D) (a, b)

SECTION- B(04×02= 08 marks)

11. Simplify the expression:
8 + 6 × (5 - 3)

12. Write and simplify an expression for:
The sum of twice a number and 7, if the number is 6.

13. Compare using <, > or = without complicated calculations :
102 - 48 and 100 - 45

14. Use brackets to make the following expression correct: 14 - 5 + 3 = 6

SECTION – C(03×03= 09 marks)

15. A store sells 15 boxes of cookies. Each box contains 6 chocolate chip cookies and 4 peanut butter cookies. How many cookies are there in total?

16. Fill in the blanks to make the equations true:

1. 10× 2 = 5 × _____
2. 80 - _____ = 25
3. _____ + 9 = 100÷ 2
4. 5× _____ = 15 + 15

17. Shreya bought 12 cupcakes from a bakery. The cost of each cupcake is₹ 20. The baker gave her a discount of ₹ 18 on the total cost. Find the total amount that she has to pay to the baker.

SECTION D(02×04= 08 marks)

18. Read the following text carefully and answer the questions that follow:
Irfan went shopping with ₹ 100. He bought a packet of biscuits for ₹ 15 and a packet of toor dal for ₹ 56. To find out how much money he would get back, Irfan wrote the expression 100 – 15 + 56. When he calculated it, he got ₹ 141, which didn't make sense because it was more than what he had. Then he realized his mistake - both ₹ 15 and ₹ 56 were expenses, so they needed to be added first and subtracted from ₹ 100. He corrected the expression to 100 – (15 + 56). Using this, he calculated the total cost to be ₹ 71 and found that he would get back ₹ 29. This situation helped him understand the importance of brackets and order of operations in evaluating complex expressions correctly. Brackets ensure that related quantities (like expenses) are grouped together and calculated before other operations.
Questions:

1.What was the incorrect expression Irfan wrote first? **(1)**

2.Why was the result₹ 141 incorrect in Irfan's first calculation? **(1)**

3.Rewrite the correct expression using brackets and explain why it's correct. Evaluate it. **(2)**

OR

If Irfan also bought a chocolate for ₹ 10, write the updated expression using brackets and find how much money he would get back. **(2)**

19. Read the following text carefully and answer the questions that follow:

Mallesh brought 30 marbles to the playground. Arun brought 5 bags, each containing 4 marbles, giving him a total of 5 × 4 = 20 marbles. To find the total number of marbles, Mallesh wrote the expression: 30 + 5 × 4 Purna, without understanding the context or the rule of order of operations, calculated it as: (30 + 5) × 4 = 35 × 4 = 140 Mallesh, however, followed the correct order of operations (BODMAS/BIDMAS), where multiplication is performed before addition. So, he correctly calculated: 5 × 4 = 20, then 30 + 20 = 50

This case highlights the importance of understanding the correct sequence of operations in arithmetic expressions. It also demonstrates that the placement of operations affects the outcome, and following standard mathematical rules is essential to arrive at the correct answer.

Questions:

1. How many marbles did Arun bring in total? **(1)**

2.What is the correct value of the expression 30 + 5× 4 using the BODMAS rule? **(1)**

3.Explain why Purna's answer of 140 is incorrect when evaluating the expression 30 + 5× 4. **(2)**

OR

Write a new arithmetic expression involving both addition and multiplication where applying BODMAS gives a different result than solving it from left to right. Solve it using the correct order. **(2)**

SECTION- E(01×05= 05 marks)

20. A car parking ticket at the amusement park costs₹ 150 on Saturdays and Sundays and ₹ 100 on weekdays. The total parking ticket sale was worth ₹ 250,000. Write an equation to represent the situation algebraically.

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कक्षा/Class: VII विषय/Subject: Mathematics अंक/Marks: 40

दिया गया पाठ्यक्रम/Portion covered: Chapter 03 (A Peek Beyond the Point)

विद्यार्थी का नाम/Name of the student: _____

अनुक्रमांक/Roll No._____ कक्षा/अनुभागClass /Sec.:_____दिनांक /Date: _____

GENERAL INSTRUCTIONS: -

1. All the questions are compulsory.
2. Question paper is divided into five sections A, B, C, D and E.
3. Calculators are not allowed.

SECTION-A [10x01=10 marks]

1. How many one-tenths make one unit?
   (a)100 (b)10
   (c)1,000 (d)1
2. What is the decimal form of 6 units and 3 one-tenths?
   (a)6.3 (b)63
   (c)6.03 (d)0.63
3. How many hundredths make one tenth?

(a) 1 (b) 10

(c) 100 (d) 1000

4. Which is the decimal form of 7 ones and 5 hundredths?

(a) 7.05 (b) 7.5

(c) 75 (d) 0.75

5. What is 5mm in centimetres?

(a) 0.05cm (b) 0.5cm

(c)5.0cm (d) 50cm

6. What is 3+6 tenths+4 hundredths written as a decimal?

(a) 3.64 (b)36.4

(c)0.364 (d)364

7. What is 1.5 hours in minutes?

(a) 65 minutes (b)90 minutes

(c)70 minutes (d)85 minutes

8. Why we divide 1cm into 10 equal parts on a ruler?

(a) To make measuring easier

(b) To measure smaller lengths accurately

(c) It is based on tradition

(d) To match weight units

9. Shylaja's hand length is 12.4 units, and her palm is 6.7 units. What is the length of her finger?

(a) 5.4 units (b) 5.6 units

(c)5.7 units (d) 6.0 units

10. What is the difference in length between the 3.2 cm screw and the 2.7 cm screw?

(a) 0.3 cm (b) 0.4cm

(c)0.5cm (d) 0.6 cm

SECTION-B [04x02=8 marks]

11. Which among these is closest to 4: 3.56,3.65 and 3.099?

12. Find the sums:

(a) 29.19+9.91 (b) 0.934+0.6

13. Observe this sequence of decimal numbers and identify the change after each term: 4.4,4.8,5.2,5.6,6. 0, ……. Also write the next three members of this sequence.

14. Tinku weighed 35.75 kg in January and 34.50 kg in February. Has he gained or lost weight? How much is the change?

SECTION-C [03x03=09 marks]

15. Solve the following:

(a) $\frac{3}{10} + 14\frac{3}{10}\frac{6}{100}$  $3\frac{4}{100}$ (b) $15\frac{6}{10}\frac{4}{100} +$ (c) $8\frac{6}{100} - 5\frac{3}{100}$

16. Convert the following decimals into a sum of tenths, hundredths, and thousandths:

(a) 0.34 (b) 1.02 (c) 0.362

17. An American tourist needs a wooden plank 2.5 feet long. A carpenter in India has a measuring tape in inches and cm. How many inches long should the carpenter cut the plank? Is this a practical measurement to make? (1 foot=12 inches).

SECTION-D [01x05=05 marks]

18. (a) Arrange the following in descending order:

(I) 10.98,10.089,10.809,10.908,10.981

(ii) 22.31,22.13,22.331,22.313,22.133

(b) Ravi delivers vegetables of 2.5 kg,3.2kg and 4.1kg in the first three days. Over 7 days he delivers 20 kg total. How much did he deliver in the last four days?

SECTION-E [02x04=08 marks]

19. A community is planning a rectangular garden on a plot of land that is 10.5 meters long. They want to plant rows of vegetables with specific spacing.

(a) They decide to leave a 0.5m path at each of the two ends. What is the remaining usable length for planting? [1]

(b) A packet of seeds costs Rs 50.75. What is the total cost of 4 packets? [1]

(c) The plan is to have 5 rows of plants with a 1.5m space between each row. Will the usable length be sufficient for this plan? [2]

20. A customer is buying items online. The cart contains a book for ₹499.50 and a pen for ₹ 85.00. The website offers a discount coupon of ₹ 125.25. Shipping is free for orders above ₹ 500 after discount.

(a) What is the total cost of the items before any discount? [1]

(b) What is the cost after applying the discount coupon? [1]

(c) If the customer adds an eraser costing ₹20.50, what is the new total after the discount? Will they have to pay for shipping now? [2]

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कार्यपत्रक / Worksheet (2025-26)

कक्षा /Class: VIII विषय /Subject: Mathematics माह/ Month: July अंक/Marks: 40

दिया गया पाठ्यक्रम/Portion covered: Chapter 4-Expressions Using Letters-Numbers

विद्यार्थी का नाम/Name of the student: _____

अनुक्रमांक /Roll No._____ कक्षा/अनुभाग Class /Sec.:_____ दिनांक /Date: _____

GENERAL INSTRUCTIONS: -

All the questions are compulsory.

Question paper is divided into five sections A, B, C, D and E.

Calculators are not allowed.

SECTION-A [10x01=10 marks]

1 Which of the following represents "five times the sum of x and 2"? [1]

a) $5(x+2)$

b) $5x+10$

c) $5x+2$

d) $x+2\times 5$

2 Simplify:$(2x+3)+(4x-5)$ [1]

a) $6x-8$

b) $2x-2$

c) $6x-2$

d) $6x+8$

3 What does the expression 5x represent? [1]

a) x multiplied by 5

b) x added 5 times

c) 5 added$x$ times

d) 5 divided by$x$

4 Which of the following is a like term to 5x? [1]

a) $5y$

b) x

c) $3x$

d) 5

5 The expression for the perimeter of a square with side x is: [1]

a) $2x$

b) x^2

c) $x+4$

d) $4x$

6 In algebra, the multiplication sign is often omitted. How is$4\times x$ written? [1]

a) $x\times 4$

b) $4 \times x$
c) $4x$
d) $\times 4$

7 Which expression represents "three more than twice a number x"? [1]
a) $3x + 2$
b) $2x + 3$
c) $2 + 3x$
d) $x + 3$

8 Which of the following is NOT an algebraic expression? [1]
a) $3x + 2$
b) $7 - y$
c) $x^2 + 1$
d) 5×6

9 The expression$3(x + 2)$ equals: [1]
a) $x + 6$
b) $3x + 6$
c) $3x + 2x$
d) $3x + 2$

10 What is the coefficient of$x$ in the expression $7x + 3$? [1]
a) 10
b) 7
c) x
d) 3

SECTION-B [04x02=08 marks]

11 Write the algebraic expressions for the following: [2]
The sum of a number x and 9
4 less than twice a number y

12 Write an algebraic expression for: “Double a number minus 6.” [2]

13 Evaluate the expression $2x + y^2$ when x = 3 and y = 4. Show all steps clearly and explain your method. [2]

14 Expand and simplify the algebraic expression: 2(a + b) + 3a. Use appropriate algebraic properties and explain each step clearly. Also mention the name of the property used. [2]

SECTION-C [03x03=09 marks]

15 Simplify and evaluate for x = 2: [3]

$$5x + 3 - 2x + 4x - 1$$

16 A pattern shows number of dots as: [3]
1st figure = 3 dots
2nd = 6 dots
3rd = 9 dots
4th = 12 dots
Write the general term of the pattern
Find the 10th term

17 A notebook cost ₹25. Write an expression for the cost of: [3]
x notebooks
y notebooks and 1 pen that costs₹ 10

SECTION-D [01x05=05 marks]

18 A shopkeeper sells pencils at₹ 3 each, pens at ₹ 5 each, and erasers at ₹ 2 each. [5]
Write an expression for the total cost if a person buys x pencils, y pens, and z erasers.
Simplify it.
Find total cost if x = 4, y = 3, z = 5
SECTION-E [02x04=08 marks]

19. Read the following text carefully and answer the questions that follow: [4]
Shweta was solving the expression (7 + 3) × 2 - 4. She did the operations step - by - step: First bracket → (7 + 3 = 10), then multiplication → 10 × 2 = 20, and finally subtraction → 20 - 4 = 16. Her friend Rishi did not use brackets and solved 7 + 3 × 2 - 4 as 7 + 6 - 4 = 9, which gave a different answer. Their teacher explained the BODMAS rule: Brackets, Orders, Division/Multiplication, Addition/Subtraction, which must be followed to get correct results. Brackets help us group operations, and without them, the expression's meaning can change completely.
Questions:
Solve: (1)
(5 + 3) × 2
In the expression 6 + 4× 2, which operation is performed first?
(1)
Solve the expression: (6 + 2)× 5 - 3. Show the correct steps and explain why BODMAS is important. (2)
OR
If a student calculates 7 + 2 × 3 - 1 as (7 + 2) × (3 - 1), will the result be the same? Show both ways. (2)

20. Pushpita operates a flower stall. 'p' buyers purchase only champak, 'q' buyers purchase only marigold, and 'r' buyers purchase both. She gives one small flag to each customer. [4]

Questions:
Form an algebraic expression for the total number of flags distributed.[1]
If p=10, q=15, r=5, calculate the total flags.[2]
Why isn't the expression p+q+2r correct? [1]

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कार्यपत्रक / Worksheet (2025-26)

कक्षा/Class: VII विषय/Subject: Mathematics माह/ Month: August अंक/Marks: 40

दिया गया पाठ्यक्रम /Portion covered: Chapter 05 (Parallel and Intersecting Lines)

विद्यार्थी का नाम/Name of the student: _____

अनु क्रमांक / Roll No._____ कक्षा /अनुभाग Class /Sec.:_____ दिनांक /Date: _____

Section A (1 ×10 = 10 marks)

1 When a transversal crosses two parallel lines, alternate interior angles are: **[1]**

a) Equal

b) Complementary

c) Unequal

d) Supplementary

2 Alternate interior angles lie: **[1]**

a) On opposite sides of the transversal and inside the two lines

b) On the same side of the transversal and inside the two lines

c) On the same side of the transversal and outside the two lines

d) On opposite sides of the transversal and outside the two lines

3 When two lines intersect, they form: **[1]**

a) Parallel lines.

b) Only right angles.

c) At least two pairs of vertically opposite angles.

d) No angles.

4 Two lines are perpendicular if they meet to form an angle of: **[1]**

a) 60°

b) 120°

c) 45°

d) 90°

5 Which of the following is NOT true for intersecting lines? **[1]**

a) They never meet

b) They meet at a point

c) They can be perpendicular

d) They form angles at the intersection

6 What is the name of the line which cuts two or more lines in a plane? **[1]**

a) Parallel line

b) Intersecting line

c) Perpendicular line

d) Transversal

7 If a line is perpendicular to one of two parallel lines, then it is also: **[1]**

a) Perpendicular to the other line

b) Parallel to the other line

c) Skew to the other line

d) Intersecting the other line

8 Which instrument is primarily used for drawing parallel lines? **[1]**

a) Compass

b) Ruler and set square

c) Protractor

d) Divider

9 If a line intersects another line at exactly one point, then the lines are called: **[1]**

a) Parallel

b) Perpendicular

c) Transversal

d) Intersecting

10 The distance between two parallel lines is measured along: **[1]**

a) The perpendicular drawn from one line to the other

b) The transversal

c) Any random line

d) The angle bisector

Section B (2× 4 = 8 Marks)

11 State whether the given statement is True or False: **[1]**

Vertically opposite angles are always equal.

12 State whether the given statement is True or False: **[1]**

Alternate interior angles are always supplementary.

13 Fill in the blanks: **[1]**

Lines that intersect each other at right angles are called _____ lines.

14 Fill in the blanks: **[1]**

A pair of adjacent angles that form a straight line is called a _____ pair.

15 Explain how paper folding helps us understand the concept of parallel and perpendicular lines. **[2]**

16 Define intersecting lines. Provide a real - life example and illustrate with a diagram. **[2]**

Section C (3× 3 = 9 Marks)

17 Prove that alternate interior angles are equal when a transversal intersects two parallel lines. **[3]**

18 Prove that if two lines are perpendicular to the same line, they are parallel to each other. **[3]**

19 If two lines are cut by a transversal and corresponding angles are equal, prove that the lines are parallel. **[3]**

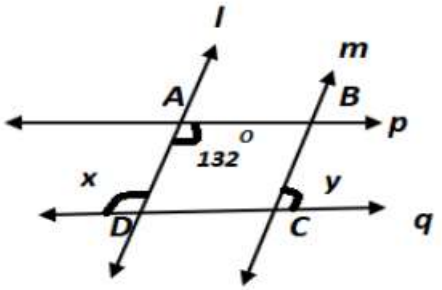
Section D (1 × 5 = 5 Marks)

20 What are alternate angles? How are they related to corresponding and vertically opposite angles? **[5]**

Section E (4× 2 = 8 Marks)

21 **Read the following text carefully and answer the questions that follow:** **[4]**

A farmer has field ABCD formed by the parallel roads as shown in figure in which lines m ‖ n *and* $p \parallel q$. He planted peepal trees at the corners of ABCD.



Observe the figure and answer the following questions

1. If $\angle BAD = 132°$, find $\angle ABC$.

2. Find the values of x and y.

3. What are the measures of supplementary and complementary angle of 32° .

4. Two angles which form a linear pair are in the ratio 5:4, find the angles.

22 **Read the following text carefully and answer the questions that follow:** **[4]**

During a geometry class, students were asked to fold a square sheet of paper in half and then again in half the other way. The creases formed by the folds made two lines, which intersected each other. The teacher explained that these lines intersected at 90°, and thus were perpendicular lines. One student suggested using a protractor to measure the angle and confirmed it was 90°. Another student folded the sheet along the diagonal and found that the new fold also intersected the earlier folds. The class discussed how folding could create parallel and perpendicular lines. The teacher then asked students to create lines parallel to a crease using the concept of double perpendicular folding.

1. What is the angle formed when two lines are perpendicular? **(1)**
2. What is the method to form a line parallel to a crease in paper folding? **(1)**
3. How can a student prove two lines on the paper are perpendicular without using a protractor? **(2)**

OR

A student folds a paper and finds the angle formed is slightly less than 90°. Should the lines be considered perpendicular? Explain. **(2)**

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कक्षा/Class: VII विषय/Subject: Mathematics माह/ Month: August अंक/Marks: 40

दिया गया पाठ्यक्रम /Portion covered: Chapter 06 (Number Play)

विद्यार्थी का नाम/Name of the student: _____

अनु क्रमांक / Roll No._____ कक्षा /अनुभाग Class /Sec.:_____ दिनांक /Date: _____

Section A (1×10 = 10 Marks)

1 What shape is formed by connecting corners of opposite numbers in a 3× 3 magic square? **[1]**

a) Circle

b) None of these

c) Diagonal cross

d) Triangle

2 Which of the following numbers is both a square and a cube? **[1]**

a) 64

b) 25

c) 81

d) 16

3 What is the parity of the product of two even numbers? **[1]**

a) Can't say

b) Even

c) Odd

d) Prime

4 What is the total number of diagonals in a square? **[1]**

a) 8

b) 6

c) 4

d) 2

5 The sum of digits of a number is 18. Which of the following must be true? **[1]**

a) It is divisible by 9

b) It is a prime number

c) It is a square number

d) None of these

6 Which number has different parity from the rest? **[1]**

a) 16

b) 24

c) 19

d) 12

7 Which of the following is an even number? **[1]**

a) 27

b) 13

c) 48

d) 95

8 Which trick shows number symmetry? **[1]**

a) Reverse addition

b) All of these

c) Number palindromes

d) Mirror numbers

9 Which of the following is **not** a Fibonacci number? **[1]**

a) 34

b) 13

c) 21

d) 45

10 Fibonacci numbers can be used to model: **[1]**

a) Prime numbers

b) Population growth

c) Square roots

d) Even numbers

Section B (2× 4 = 8 Marks)

11 State whether the given statement is True or False: **[1]**

Two odd numbers when multiplied give an even number.

12 State whether the given statement is True or False: **[1]**

1001 is only divisible by 7.

13 Fill in the blanks: **[1]**

In a grid of size 4× 4, there are _____ rows.

14 Write the Fibonacci sequence. **[1]**

15 Write the numbers that occur most frequently in the first 50 natural numbers. Also, find the sum of these numbers. **[2]**

16 Find the digit in the units place of the product: 7× 3 × 9. Also, explain how the digit in the units place of a product can be determined using patterns. **[2]**

Section C (3×3 = 9 Marks)

17 We are often asked to find specific digits (like units or tens place) in the product of two numbers. **[3]**

1. Multiply 12× 14.
2. Find the digit in the tens place of the product.

Also, explain step - by - step how the tens digit is found and why it's important in real - world problems.

18 The Fibonacci sequence is a special sequence in mathematics. **[3]**

1. Find the 10th term in the Fibonacci sequence.
2. Calculate the sum of the first 10 Fibonacci numbers.

Also, explain how the sequence is formed and how you arrived at your answer.

19 Show that the sum of odd numbers results in an even number. **[3]**

Section D (5× 1= 5 Marks)

20 Using the numbers from 1 to 100, find the frequency of digit 7 in the units place and tens place. Also, calculate the total sum of all numbers that contain digit 7 in any place. **[5]**

Section E (4× 2 = 8 Marks)

21 **Read the following text carefully and answer the questions that follow:** **[4]**

Anika was solving a worksheet full of 3 - digit numbers. She was told to use divisibility rules instead of long division. She recalled that if the sum of the digits is divisible by 3 or 9, then the number is too. If a number ends in 0 or 5, it's divisible by 5. For 6, the number should be divisible by both 2 and 3.

She tried this with 180, 243, and 355. For 180, 1 + 8 + 0 = 9 → divisible by 9. It ends in 0 → divisible by 5 and 10. She applied similar checks to the others and got all answers correct. She loved how simple tests could save so much time.

Questions:

1. What is the sum of digits in 243? **(1)**
2. Is 355 divisible by 5? **(1)**
3. Is 180 divisible by 3, 5, 6, and 9? Show how. **(2)**

OR

Use digit sum tests to check if 243 is divisible by 3 and 9. **(2)**

22 **Read the following text carefully and answer the questions that follow:** **[4]**

Vidya played an exciting grid game in her classroom where she had to fill numbers from 1 to 9 in a 3 × 3 grid without repeating any number. As she filled in the grid correctly, she noticed something interesting - the sum of each row, column, and diagonal was the same. She added all the numbers and found that their total was 45. Her teacher explained that this type of grid is called a magic square, where the arrangement of numbers creates a special property: all rows, columns, and diagonals add up to the same magic number. Through this activity, Vidya learned how number patterns and arithmetic can combine to create mathematical puzzles that are both fun and educational. **Questions:**

1. What is the total sum of numbers from 1 to 9? **(1)**
2. What is the name of a square where all rows, columns, and diagonals have the same sum? **(1)**
3. In a 3× 3 magic square using numbers 1 to 9, what should be the sum of each row or column? Show how it's calculated. **(2)**

OR

Explain why the numbers in a 3 × 3 magic square must be unique and cannot be repeated. **(2)**

परमाणु ऊर्जा शिक्षण संस्था
Atomic Energy Education Society
कार्यपत्रक / Worksheet (2025-26)

कक्षा/Class: VII विषय/Subject: Mathematics माह/Month: September अंक/Marks: 40

दिया गया पाट्यक्रम/Portion covered: Chapter 07 (A Tale of Intersecting Lines)

विद्यार्थी का नाम/Name of the student:

_____

अनुक्रमांक/Roll No.: _____ अनुभाग/Section: _____ दिनांक/Date: _____

SECTION A (10 × 1 M = 10 M)

(I) MULTIPLE CHOICE QUESTIONS:

1. An _____ triangle have three equal sides and three equal angles:
   (a) Isosceles (b) Equilateral (c) Scalene (d) All of these
2. A triangle with one angle equal to 90° is _____ - angled triangle:
   (a) Acute (b) Obtuse (c) Right (d) None of these
3. A triangle with a pair of equal angles is _____ triangle:
   (a) Isosceles (b) Scalene (c) Equilateral (d) All of these
4. A triangle having an angle 90° and a pair of equal sides will have other two angles equal to:
   (a) 30° (b) 60° (c) 45° (d) 180°
5. Which of the following lengths cannot form a right – angled triangle:
   (a) 5 units, 12 units, 13 units (c) 8 units, 6 units, 10 units
   (b) 24units, 10 units, 26 units (d) 17 units, 5 units, 22 units
6. ΔABC is right –angled at C. If AC = 5 cm and BC = 12 cm, then the length of AB is:
   (a) 7 cm (b) 13 cm (c) 17 cm (d) 10 cm
7. The longest side in ΔPQR, right – angled at P, is:
   (a) QR (b) PQ (c) PR (d) None of these
8. In a ΔABC, right – angled at B, which of the following inequalities does not represent triangular inequality:
   (a) AB + CA > BC (c) BC + CA > AB
   (b) AB + BC > CA (d) AB + BC = CA
9. Which of the following lengths can be the sides of a triangle:
   (a) 2, 2, 5 (b) 3, 4, 6 (c) 2, 4, 6 (d) 10, 20, 35
10. We can construct a triangle using:
    (a) Ruler (b) Compass (c) Protractor (d) All of these

SECTION B (04 × 2 M = 08 M)

1. Construct an **equilateral** triangle of length 3 cm. Also, write the steps of construction.
2. Construct an **isosceles** triangle with base angle 75° and base length 4 cm. Write the steps of construction.
3. Check whether you can construct a triangle with sides:
   (a) 10 cm, 10 cm, 25 cm (b) 5 cm, 5 cm, 8 cm
4. Construct a **scalene** triangle of lengths 6 cm and 5 cm, and the including angle 45°. Also, write the steps of construction.

PAGE 1

SECTION C (03 × 3 M = 09 M)

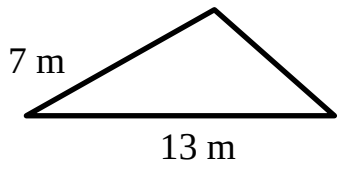
1. Given 2 angles 60° and 30°, and a side between them measuring 10 cm, construct the triangle. Also, check if the triangle is acute – angled, obtuse – angled or right – angled. Write the steps of construction.
2. Construct an isosceles ΔPQR, where PQ = QR = 7 cm and <Q = 120°. Write the steps of construction.
3. Use **2** methods to construct an equilateral triangle of side 6 cm each. Write the steps of construction.

SECTION D (01 × 5 M = 05 M)

1. Check whether these following triangles are possible or not:
   (a) A scalene ΔXYZ with <Z = 90°, <X = 45° and YZ = 5 cm.
   (b) A right – angled triangle with base length 6 cm and hypotenuse 10 cm.
   (c) An isosceles right – angled ΔABC with AB = BC = 5 cm and hypotenuse CA = 7 cm.
   (d) A triangle with sides 4 cm, 3 cm and 6 cm.
   (e) An equilateral triangle of side 2 cm each.

SECTION E (02 × 4 M = 08 M)

1. There is a triangular field in which 2 sides are known, 13 m and 7 m. Its farmer wants to fence the field, but the length of the third side is unknown.
   (a) What should be the minimum length of the fence?
   (b) What should be the maximum length of the fence?
   (c) Is it possible that the length of the third side is 5 m?
   (d) Is this triangular field right – angled?



2. If a room is to be constructed on a triangular plot of dimensions 24 m, 26 m and 10m.
   (a) Is this plot right – angled?
   (b) What is the area of this plot?
   (c) What is the perimeter of the plot?
   (d) Does this triangle fulfill triangular inequality property?