



INDIAN SCHOOL AL WADI AL KABIR

Final Examination (2023-24)

Class: VII

Sub: MATHEMATICS

Max Marks: 80

Date: 03/03/2024

Set - 2

Time: 3 hours

Instructions:

Section A: Multiple Choice Question (Q.1 to Q.15) & Source based Question (Q.16)

Section B: Short Answer Questions of 2 marks each (Q.17 to Q.21)

Section C: Long Answer Questions (Type – 1) of 3 marks each (Q.22 to Q.27)

Section D: Long Answer Questions (Type – 2) of 4 marks each (Q.28 to Q.33)

& Case study Questions (Q.34 & Q.35) of 4 marks each.

NOTE: This question paper consists of 6 printed pages.

Section A: Multiple Choice Questions (Q.1 to Q.15) of 1 mark each								
1.	The value of $3x^2 - 5x + 3$, when $x=1$ is:							
	A	11	B	0	C	-1	D	1
2.	The standard form of 153057 is:							
	A	1530.57×10	B	1.53057×10^5	C	15.3057×10^3	D	153.057×10^2
3.	In a right-angled triangle, if one acute angle is 30° , then the other acute angle is_____.							
	A	60°	B	120°	C	50°	D	70°
4.	The standard form $\frac{21}{-35}$ is:							
	A	$\frac{3}{5}$	B	$\frac{5}{-3}$	C	$-\frac{3}{5}$	D	$\frac{7}{-3}$
5.	The range of the following data 23, 54, 12, 5, 45, 67, and 76 is:							
	A	71	B	64	C	62	D	55

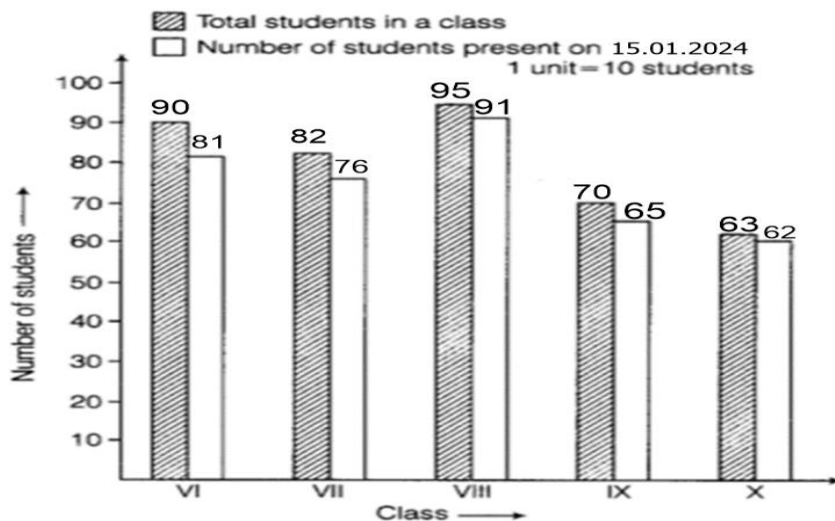
6.	The exponential form of $7 \times 7 \times 7 \times z \times z \times z \times z \times z \times z$ is:							
	A	$7^3 + z^5$	B	$7^4 \times z^5$	C	$7^3 \times z^6$	D	$7^5 \times z^8$
7.	$\frac{8}{25}$ in its percentage form is:							
	A	40%	B	32%	C	16%	D	30%
8.	Mode of the given set of data 2, 23, 32, 34, 32, 23, 43, 2, 32 and 22 is:							
	A	2	B	23	C	43	D	32
9.	The algebraic expression for the statement "Subtracting 7 from three times of x^2 " is:							
	A	$7 - 3x^2$	B	$3 + x^2 - 7$	C	$3x^2 - 7$	D	$x^2 - 21$
10.	If 90% of x is 315 km, then the value of x is_____.							
	A	325 km	B	405 km	C	340 km	D	350 km
11.	If the lengths of two sides of a triangle are 8cm and 12cm, then the length of third side may be_____.							
	A	18cm	B	3cm	C	21cm	D	2cm
12.	The area of a rectangle with length = $\frac{25}{2}$ m and breadth = $\frac{4}{5}$ m is:							
	A	50 m^2	B	20 m^2	C	10 m^2	D	100 m^2
13.	In a triangle, if the base is 5 cm and corresponding height is 12 cm, then its area is_____.							
	A	60 cm^2	B	30 cm^2	C	15 cm^2	D	35 cm^2
14.	$(3^{12} \div 3^8) \times 3^5$ can be simplified and expressed in the exponential form as:							
	A	3^9	B	3^{11}	C	3^1	D	3^0

15. The altitude of a parallelogram whose area is 675 m^2 and the base is 25 m is:

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|----------|------|----------|------|----------|------|----------|------|
| A | 26 m | B | 24 m | C | 28 m | D | 27 m |
|----------|------|----------|------|----------|------|----------|------|

Q16. Source based Question -5 Marks

The below graph depicts the attendance of classes VI to X, on a particular date (15.01.2024). Observe the graph and answer the following questions:



I Which class has the maximum number of students?

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|----------|------------|----------|----------|----------|----------|----------|-----------|
| A | Class VIII | B | Class IX | C | Class VI | D | Class VII |
|----------|------------|----------|----------|----------|----------|----------|-----------|

II How many students were absent in class VII?

- | | | | | | | | |
|----------|---|----------|---|----------|---|----------|---|
| A | 8 | B | 2 | C | 6 | D | 4 |
|----------|---|----------|---|----------|---|----------|---|

III Find the ratio of number of students present to the total number of students of class IX.

- | | | | | | | | |
|----------|-------|----------|-------|----------|-------|----------|-------|
| A | 12:13 | B | 14:13 | C | 13:12 | D | 13:14 |
|----------|-------|----------|-------|----------|-------|----------|-------|

IV In which class, the difference of total students and number of student's present is minimum?

- | | | | | | | | |
|----------|----------|----------|---------|----------|----------|----------|-----------|
| A | Class IX | B | Class X | C | Class VI | D | Class VII |
|----------|----------|----------|---------|----------|----------|----------|-----------|

V Calculate the total class strength of class VI and IX.

- | | | | | | | | |
|----------|--------------|----------|--------------|----------|--------------|----------|--------------|
| A | 160 students | B | 155 students | C | 140 students | D | 165 students |
|----------|--------------|----------|--------------|----------|--------------|----------|--------------|

Section B: Short Answer Questions (Type – 1) of **2** marks each (Q.17 to Q.21)

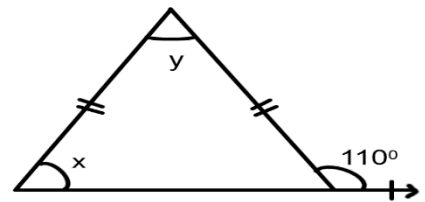
17. Write the terms and express its factors of the given expression using a tree diagram:

$$4a^2 - 3b^2 + 5ab$$

18. A type writer was bought for ₹1600 and sold for ₹1760. Calculate the gain or loss percent.

19. Find the value of $(5^0 \times 3^0 + 7^0 \times 8^0) \times 4^0$ using laws of exponents.

20. Find the value of x and y in the given figure.



21. Rahul has set up a beautiful circular flower bed in his garden. If the diameter of the flower bed is 14 cm, calculate its area. (Take $\pi = \frac{22}{7}$)

Section C: Long Answer Questions (Type – 1) of **3** marks each (Q.22 to Q.27)

22. Represent the rational numbers $\frac{-2}{5}$, 0 , $\frac{3}{5}$ and $\frac{4}{5}$ on the same number line.

23. Express 648 as a product of prime factors in exponential form.

24. Represent the given data in a frequency distribution table using tally marks and hence, find the 'mode'.

7, 4, 3, 5, 6, 3, 3, 2, 4, 3, 4, 3, 3, 4, 4, 3, 2, 2, 4, 3, 5, 4, 3, 4, 3, 4, 3, 1, 2, 3.

25. Vidya prepared a circular chart of radius 42 cm for a Mathematics exhibition held in her school. To make the chart look more attractive she decided to stick a red coloured ribbon along the border of the chart. If the ribbon costs ₹3 per cm, then calculate the cost of ribbon required to decorate the border of chart. (Take $\pi = \frac{22}{7}$)

26. If the angles of a triangle are in the ratio 2:3:5, find the measure of all the three angles.

<p>27.</p>	<p>Simplify the below expression and find the value if $m = 2$:</p> $3(m - 1) + 2m + 6$
<p>Section D: Long Answer Questions (Type – 2) (Q.28 to Q.33) & Case study (Q.34 &35)</p> <p>(4 marks each)</p>	
<p>28.</p>	<p>Simplify using laws of exponents: (i) $\frac{3^4 \times 32}{2^4 \times 3^3}$</p> <p>(ii) $\frac{(7^2)^3 \times 7^4}{7^7}$</p>
<p>29.</p>	<p>A ladder leans against a wall. The foot of ladder is 6 feet away from the base of the wall and the ladder reaches a height of 8 feet on the wall.</p> <p>(i) Calculate the length of the ladder.</p> <p>(ii) If the ladder makes an angle of 50° with the floor, what will be the value of x?</p>
<p>30.</p>	<p>Do as directed: (i) Add: $5x + 13 + 6y$ and $7x + 11 - 8y$.</p> <p>(ii) Subtract: $5a - 6b + 2$ from $7a + 8b - 5$.</p>
<p>31.</p>	<p>i. By selling a chair for ₹1440, a shopkeeper has 10% loss. At what price did he buy it?</p> <p>ii. If the shopkeeper increases the price of another article from ₹220 to ₹253. Calculate the increase percentage in the price of this article.</p>
<p>32.</p>	<p>Around a rectangular garden of length 10 m and width 5 m, a road of 1 m wide is laid. Find the cost of metaling the road at ₹200 per m^2.</p>

33. Write any four rational numbers between $\frac{5}{7}$ and $\frac{7}{9}$.

34. **Case Study 1:** Meher and Arun are childhood friends. They plan to start a small business with equal shares. To fund the venture, Meher and Arun decides to take loan.



Based on this answer the following questions:

- Aman borrowed ₹25,000 from a bank and returned an amount of ₹37,000 after 3 years. Calculate the simple interest he paid for the money he borrowed. (1m)
- If Meher borrowed the same principal amount from a moneylender at 15% simple interest for 3 years. Then what will be the simple interest for the money borrowed by Meher. (2m)
- Who paid more interest? By how much? (1m)

35. **Case Study 2:** Trees are very important, valuable and necessary to our existence as they have furnished us with two important life essentials; food and oxygen. So, trees are vital resources for the survival of all living beings. Therefore, Governments world over and many Organizations are taking steps to prevent deforestation and to tell the benefits of planting trees.



In a recent survey conducted in a particular city of Oman, it was found that the number of trees in different parks of the city were 26, 33, 38, 48, 33, 34, 34, 33 and 27. Based on this answer the following questions:

- Calculate the mean number of trees present in all parks. (2m)
- What is the median for the given data? (1m)
- If the Municipality decides to plant 2 more trees in each of these parks, then what will be the new mean? (1m)
