INDIAN SCHOOL AL WADI AL KABIR

Mid-Term Examination (2023-24)

Class: VII | Sub: MATHEMATICS | Max Marks: 80

Date: 24/09/23 | Set - 2 | Time: 2 ½ 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.26)

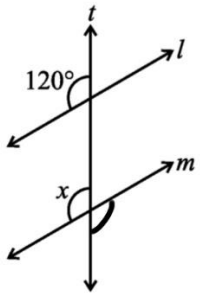
Section D: Long Answer Questions (Type – 2) of 4 marks each (Q.27 to Q.31)

& Case study Question (Q.32 & Q.34) of 5 marks each.

Section A: Multiple Choice Question (Q.1 to Q.15) of **1** mark each								
1.	Which property is reflected in the following: $\mathbf{12} \times (-\mathbf{8}) = (-\mathbf{8}) \times \mathbf{12}$							
	A	Distributivity	**B**	Commutativity	**C**	Associativity	**D**	Closure
2.	Katrina rode her bicycle $\frac{\mathbf{7}}{\mathbf{12}}$ km in the morning and $\frac{\mathbf{3}}{\mathbf{4}}$ km in the evening. Then the distance travelled by her altogether on that day is,							
	A	$\frac{4}{3}$ km	**B**	$\frac{1}{6}$ km	**C**	$\frac{17}{12}$ km	**D**	5 km
3.	Which among the following is a simple equation?							
	A	$4 \times 3 - 8 = 4$	**B**	$4y + 8 = 20$	**C**	$\frac{1}{3} - \frac{1}{5} = \frac{1}{15}$	**D**	$2x - 66$
4.	The statement form of the equation $\frac{x}{2} + \mathbf{3} = \mathbf{8}$ is:							
	A	3 added to a number is 8	**B**	The sum of a number and 8 divided by 2 gives 8	**C**	Half of a number added to 3 gives 8	**D**	Half of the sum of a number and 3 gives 8

5.	The mode of the data **3,4,7,4,2,2,4** is						
	A	7	**B**	2	**C**	3	**D**	4
6.	The value of $\mathbf{3\frac{1}{2}}$ of $\frac{8}{3}$ is						
	A	$\frac{28}{3}$	**B**	$\frac{21}{3}$	**C**	$\frac{3}{28}$	**D**	$\frac{14}{3}$
7.	In a mathematics exam, if Heera scored **32** marks and Arun scored **48.5** marks. How less did Heera score than Arun?						
	A	80.5	**B**	16.5	**C**	51.7	**D**	15.5
8.	Which of the following equation has $\boldsymbol{x = 3}$ as its solution?						
	A	$8x - 10 = 22$	**B**	$7x = 28$	**C**	$2x - 3 = -6$	**D**	$5x = 15$
9.	Which among the following pairs of integers gives you the sum of **(-3)**?						
	A	$(2,1)$	**B**	$(5, -2)$	**C**	$(-2, -1)$	**D**	$(-2,1)$
10.	The supplement of x is $\mathbf{79°}$, find x.						
	A	$11°$	**B**	$101°$	**C**	$1°$	**D**	$79°$
11.	The value of $(-\mathbf{63}) \div [(-\mathbf{60}) + (-\mathbf{3})]$ is						
	A	$\frac{63}{57}$	**B**	-1	**C**	1	**D**	$\frac{-63}{57}$

12. If $l \parallel m$, then the value of x in the given figure is:



	A	$60°$	**B**	$120°$	**C**	$180°$	**D**	$90°$

13. $[(-3) + \_\_\_\_\_] + 10 = (-3) + [(-8) + 10]$, the number in the blank will be

	A	8	**B**	-3	**C**	-8	**D**	10

14. The marks of 7 students of a class are: **78, 11, 99, 63, 6, 78, 36.** The range of marks is,

	A	92	**B**	91	**C**	90	**D**	93

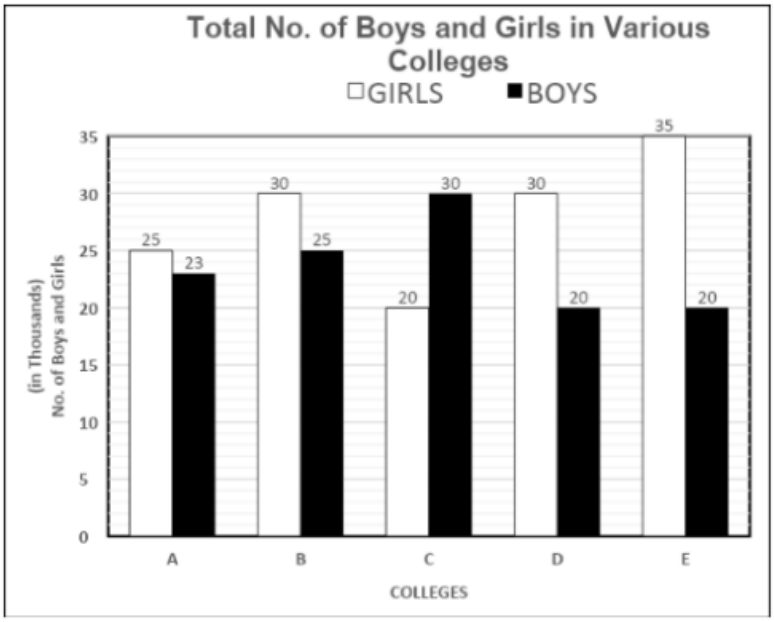
15. Identify which among the following pairs of angles is complementary?

	A	$63°, 27°$	**B**	$65°, 115°$	**C**	$78°, 15°$	**D**	$145°, 25°$

Q16. **Source based Question** -5 Marks

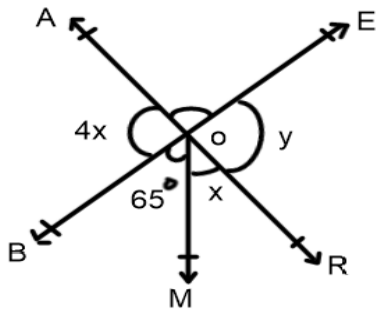
Gender distribution reveals about the equal access and opportunity for people of all genders in different areas of life, and it helps to identify gender inequalities. Understanding gender distribution within educational institution is a crucial aspect. Mohan is planning to do a course in one of the colleges in Zedland and he is specific about studying in a college with fair gender distribution. The double graph illustrates the gender distribution in various colleges across Zedland.

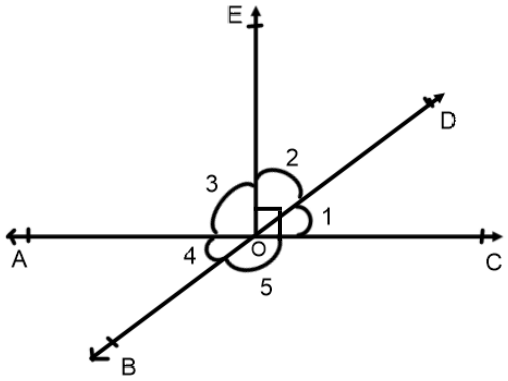
Observe the double bar graph and answer the following questions.



I	Which college has the highest number of girls studying in it?						
	A	College B	**B**	College D	**C**	College A	**D**	College E
II	What is the ratio of the number of boys in college D to the number of boys in college B?						
	A	5:4	**B**	4:5	**C**	2:3	**D**	3:2
III	Among all the colleges which college has the least gender inequality?						
	A	College B	**B**	College C	**C**	College A	**D**	College D
IV	What is the ratio of total number of boys in all the colleges to that of total number of girls?						
	A	59:70	**B**	6:7	**C**	70:59	**D**	7:6
V	Which college has the maximum gender inequality?						
	A	College C	**B**	College E	**C**	College D	**D**	College B

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

17.	Find the median of first **9** even natural numbers.
18.	Find the product of $(-\mathbf{25}) \times (-\mathbf{119}) \times (-\mathbf{4})$**.**
19.	Solve the equation: $\frac{\mathbf{x}}{\mathbf{7}} + \mathbf{20} = \mathbf{34}$
20.	Find the area of the rectangle of length **6.3 cm** and breadth **3.7 cm**.
21.	If $\angle BOR = 90°$, Find the values of the angles x, y in the given figure. Give reasons. 

Section C : Long Answer Questions (Type – 1) of **3** marks each (Q.22 to Q.26)	
22.	Roma, Lena and Ajay were best friends and they went on a tour. On the way, they bought a water bottle containing **9 litres** of water from a shop. Roma consumed $\frac{2}{9}$ **of** water, Lena consumed $\frac{4}{9}$ and the remaining was consumed by Ajay. (i) How much water did Roma drink? (ii) How much water did Lena drink? (iii) What fraction of the total quantity of water did Ajay drink?
23.	In the figure $\angle COD = \angle 1$, find out: (i) A pair of angles forming linear pair. (ii) A pair of vertically opposite angles. (iii) A pair of complementary angles. 
24.	Solve the following equation: $\mathbf{2(1+z)+3=7}$
25.	Verify the following: $\mathbf{(15)\times[6+(-3)]=[15\times 6]+[15\times(-3)]}$
26.	The height of 11 boys were measured in cm and the results are as follows: $\mathbf{142, 158, 135, 140, 154, 142, 147, 149, 142, 140, 138}$. Find the median and mode of the above data.

Section D: Long Answer Questions (Type – 2) (Q.27 to Q.31)

& Case study (Q.32 &34) of **5** marks each

27. Rohan and Rakhi went to the market for shopping. Rohan purchased 3kg 500g Rice flour, 1kg 200g Wheat flour(Atta) and 750g Ragi flour. Rakhi purchased 4kg 500g Rice flour, 2kg 300g Wheat flour, 1kg 200g Ragi flour and 500g gram flour.

(i) Find the total weight of items purchased by Rohan?
(ii) Find the total weight of items purchased by Rakhi?
(iii) Who purchased more and by how much?

28. In a school library, a reading competition was held from Monday to Thursday. The following observations were recorded by the librarian in these particular days:

Days	Monday	Tuesday	Wednesday	Thursday
Fiction readers	**600**	**350**	**550**	**500**
Non-fiction readers	**100**	**200**	**300**	**250**

Draw a double bar graph choosing an appropriate scale.

29. On Tuesday, a bus covers a distance of 24.2 km using 2.2 litres of petrol.

(I)How much distance will it cover using 1 litre of petrol?

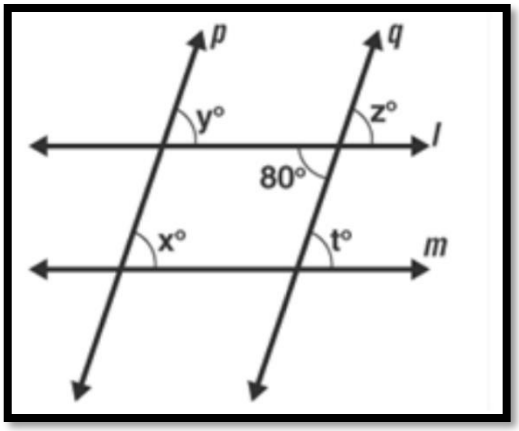
(II)On the same day, how much distance will it cover using an additional 1.5 litres of petrol?

(III)What is the total distance covered by the bus on Tuesday?

30. Set up an equation and solve the following:

Arun is thinking of a number. When he divides it by 3 and then add 4, the answer is 28.

31. In the adjoining figure, $l \parallel m \text{ and } p \parallel q$. Find the values of x, y, z, t. Give reasons.



32. **Case Study-1**

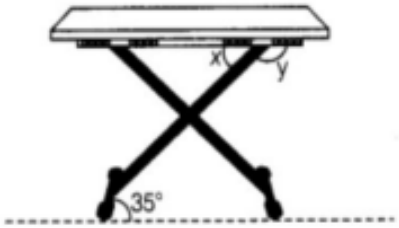
Maya and Renuka were cousins and they were spending their summer holiday together. One day, they were playing the '**Dominoes game**' which is a tile based game using rectangular tiles, each of them called a 'domino'. They had two deck of dominoes with them. While playing Maya said that **she has 9 more dominoes than four times the number of dominoes Renuka has**.

(i) If Maya has 17 dominoes. Find the number of dominoes Renuka have. (2m)

(ii) What will be the number of dominoes Renuka have if Maya has 29. (2m)

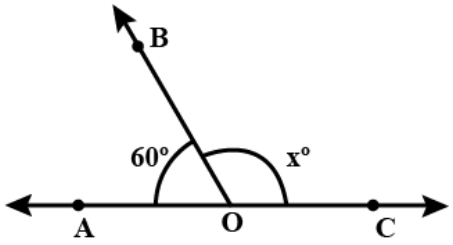
(iii) When finishing the game Maya said that she has 6 less than two times the number of dominoes Renuka has. Maya won the game and she has zero dominoes left. Set up an equation for the situation. (1m)

33. **Case Study-2**



The legs of a stool make an angle of 35° with the floor, as shown in the given figure. The floor and stool surface is parallel to each other. Answer the following questions:

(i) Find the value of x. (1m)
(ii) Find the angle value of y. (2m)
(iii) Find the value of x in the below figure: (2m)



34. **Case Study-3**

On a hot summer day, two friends Sarah and Maria, were playing indoor games at Sarah's house. It was scorching weather outside, and the temperature inside the room was 45°C without the air conditioner. They both knew that Sarah's air conditioner could cool the room at a rate of 4°C per minute.

(i) What will be the temperature after switching on the air conditioner for 6 mins? (2m)
(ii) If they keep the air conditioner switched on for 15 mins, what will be the temperature inside the room after 15 mins? (2m)
(iii) Indicate 250 m below sea level by an integer. (1m)

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