SUMMATIVE ASSISEMENT – 1, JANUARY - 2022

MATHEMATICS PAPER – 2

(Modal Paper – 2)

Class: 9th **Max. Marks: 40** **Time: 2hr 45 min**

Instructions to students:

1. **There are four sections and 33 questions in this paper.**
2. **Answers should be written in answer sheets.**
3. **There is an internal choice in Section – Iv**
4. **Write all questions visible and legibly.**
5. **15 Minutes are given for reading the question paper and 2hr 30 min given for writing answers.**

Section – 1

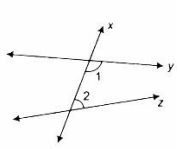
Note: 1. Answer all questions

2. Each question carries ½ mark. **20 × ½ = 10 M**

1. One of the defined terms is _____

   A) point B) line C) angle D) solid

2. Which Euclid's postulate represents the following figure?



   A) second B) third C) fourth D) fifth

3. 30 – 39, 40 – 49, ……. Classes are called _____ classes.

   A) Exclusive B) Inclusive C) Boundaries D) class mark

4. Choose the correct answer following.

   Statement P: Sum of supplementary angles is 180^0.

   Statement Q: Sum of three angles of a triangles is two right angles.

   A) P true, Q false B) P false, Q true C) Both P, Q are true D) Both P, Q are false

5. Mean of 1, 2, 3 and x is 4. Then 'x' = _____

   A) 4 B) 6 C) 10 D) 16

6. Number of circles can be drawn from a given point is _____

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

7. The average weight of 5 packets is 24 kgs. The average weight of another 10 packets is 12 kgs. Then the average weight of all 15 packets is _____ kgs.

   A) 6 B) 16 C) 17 D) 18

8. 12.5 is class mark of the _____ class.

   A) 10 – 15 B) 0 – 25 C) B0th A & B D) none of these

9. Match the following

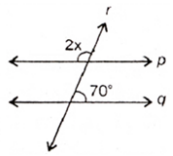
   A. Complementary angles ( ) i) 120^0, 60^0

   B. Supplementary angles ( ) ii) 30^0, 60^0

   C. Conjugate angles ( ) iii) 160^0, 200^0

   A) A – i, B – ii, C – iii B) A – ii, B – iii, C – i C) A – ii, B – i, C – iii D) A – iii, B – i, C – ii

10. In the adjacent figure,



   A) 35^0 B) 55^0 C) 140^0 D) 110^0

11. Number of volumes in "The Elements" is _____

   A) 13 B) 23 C) 103 D) infinite

12. How many points can two distinct lines intersects at most _____

   A) 1 B) 2 C) 3 D) either 1 or 2

13. Mean of all prime numbers between 10 and 20 is _____

   A) 13 B) 15 C) 17 D) 19

14. For which of the following, mean and median are equal.

   A) 4, 4, 5 B) 4, 6, 5 C) 5, 4, 5 D) 0, 1, 3

15. Assertion: Mean depends on all observations.

   Reason: Mean = $\frac{Sum\ of\ all\ observations}{Number\ of\ observaions}$.

   A) Assertion and reason are true and reason is the correct explanation of assertion.

   B) Assertion and reason are true but reason is not the correct explanation of assertion.

   C) Assertion is true but reason is false.

   D) Assertion is false but reason is true.

16. Check for which of the following median is 3.5?

   A) 3, 6, 5, 3, 4, 3 B) 3, 5, 5, 3, 3, 5 C) 4, 3, 4, 5, 4, 3 D) 3, 4, 5, 6, 7, 8

17. AB and CD are two parallel lines. PQ cuts AB and CD at E and F respectively. EL is the bisector of ∠FEB. If ∠LEB = 35°, then ∠CFQ = _____

   A) 55^0 B) 70^0 C) 110^0 D) 130^0

18. Given ∠PQR = 3x, ∠QOR = 2x + 10°. If POQ is a straight line, then 'x' = _____

   A) 30^0 B) 34^0 C) 36^0 D) 33^0

19. When number of observations 'n' is odd, then median is _____ observation.

A) $\left(\frac{n+1}{2}\right)^{th}$ B) $\left(\frac{n-1}{2}\right)^{th}$ C) average of $\left(\frac{n}{2}\right)^{th}$ and $\left(\frac{n}{2}+1\right)^{th}$ D) none

20. An observation with maximum frequency is called _____

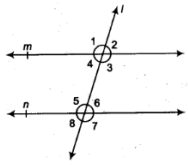
A) Mean B) Median C) Mode D) class mark

Section – II

Note: 1. Answer all the questions

2. Each question carries 1 mark. **4 × 1 = 4 M**

21. What is a conjecture?
22. Write the pairs of corresponding angles in following figure?



23. An angle and its complementary angles are in the ratio 4:5. Find the angles?
24. Write the mark wise frequency in the following frequency distribution table.

Marks	5	Upto 6	Upto 7	Upto 8
No.of students	5	12	19	25

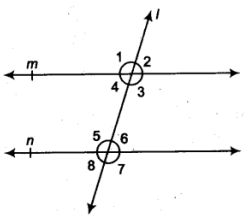
Section – III

Note: 1. Answer all the questions.

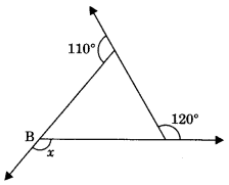
2. Each question carries 2 marks. **5 × 2 = 10 M**

25. In ΔABC, we have BX = $\frac{1}{2}$ AB, BY = $\frac{1}{2}$ BC and AB = BC. Show that BX = BY. Write the axiom used in the proof?
26. Draw an equilateral triangle whose side is 5.2 cm?
27. It is given that $l \parallel m$ to prove ∠1 is supplementary to ∠8. Write reasons for the statements.

	Statement	Reason
I)	$l \parallel m$	_____
II)	∠1 = ∠5	_____
III)	∠5 + ∠8 = 180^0	_____
IV)	∠1 + ∠8 = 180^0	_____
V)	∠1 is supplementary to ∠8	_____



28. Find the value of ‘x’ in the following figure?



29. The mean weight of three students is 40 kgs. One of the students Ranga weights 46 kgs. The other two students, Rahim and Reshma have same weight. Find the weight of Rahim?

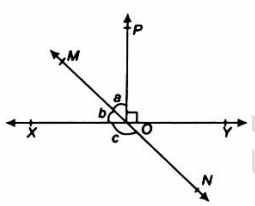
Section – IV

Note: 1. Answer all the questions.

2. Each questions carries 4 marks.

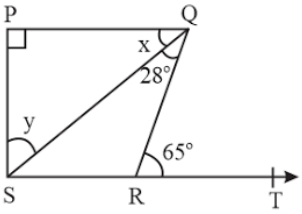
3. There is internal choice for each question. **4 × 4 = 16 M**

30. In the given figure $\overleftrightarrow{XY}$ and $\overleftrightarrow{MN}$ intersect at ‘O’. If $\angle POY$ = 90^0 and a:b = 2:3, find ‘c’?

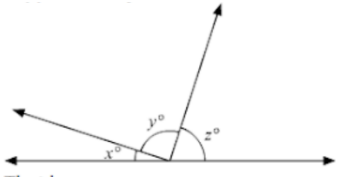


OR

Find the values of the ‘x’ and ‘y’ from the following figure?

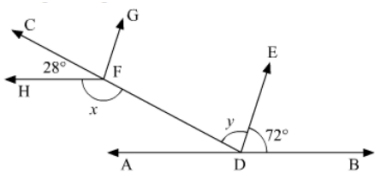


31. In the following figure $\frac{y}{x} = 5\ and\ \frac{z}{x} = 4$. Then find the values of x, y and z?



OR

Using the given information in the following figure, find the value of ‘x’ and ‘y’.



32. The mean of the following data is 7.5, then find the value of 'A'?

x	5	6	7	8	9	10
f	3	10	A	18	8	4

OR

Test scores out of 100 for a class of 20 students are as follows;

93, 84, 97, 98, 100, 78, 86, 100, 85, 92, 55, 91, 90, 75, 94, 83, 60, 81, 95.

A) Make a frequency table taking class interval 51 – 60, 61 – 70, ……..

B) Find the modal class.

C) Find the class that contain the median.

33. Mean of 50 observations was found to be 80.4. But later on, it was discovered the 96 was misread as 69 at one place. Find the correct mean. If in each observation a constant value 'k' added, how is the mean affected?

OR

AFLATOUN social and financial educational program initiated savings program among the high school children in Hyderabad district. Mandal wise savings in a month are given in the following table.

Mandal	**No. of schools**	**Total amount**
Amberpet	6	2154
Thirumalgiri	6	2478
Saidabad	5	975
Khairathabad	4	912
Secundrabad	3	600

Find arithmetic mean of school wise savings in each Mandal. Also find the mean of saving of all schools.