SUMMATIVE ASSISEMENT – 1, JANUARY - 2022

MATHEMATICS PAPER – 2

(Modal Paper – 4)

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

Instructions to students:

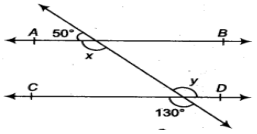
1. **There are four sections and 33 questions in this paper.**
2. **Answers should be written in answer sheets.**
3. **There is an internal choice in Section – III**
4. **Write all questions visible and legibly.**
5. **15 Minutes are given for reading the question paper and 2hr 30 min given for writing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

Section – 1

Note: 1. Answer all the questions

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

1. Write the fundamental terms of geometry?
2. Find 'x' and 'y' in the adjacent figure?



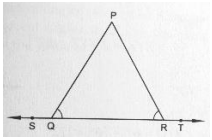
3. Give an example of axiom from daily life.
4. Convert the classes 10 – 19, 20 – 29, 30 – 39, 40 – 49 as exclusive classes.

Section – II

Note: 1. Answer all the questions.

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

5. If the complementary of an angle is equal to the supplementary of the thrice of it. Find the measure of the angle?
6. In the given figure, if ∠PQR = ∠PRQ, then prove that ∠PQS = ∠PRT?



7. Draw an equilateral triangle whose side is 6 cm.
8. The blood groups of 30 students are recorded as follows. Represent the data in the form of a frequency distribution table. Which is the most common and which is the rarest blood group among these students?

   A, O, A, O, A, B, O, A, B, O, B, O, B, O, O, A, B, O, B, AB, O, A, O, A, AB, O, A, B, 0, AB
9. Median of a data arranged in ascending order 7, 10, 15, x, y, 27, 30 is 17 and when one more number 50 is added to the data, the median become 18. Find 'x' and 'y'?

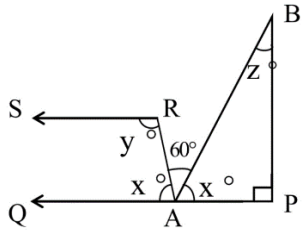
Section – III

Note: 1. Answer all the questions.

2. Each questions carries 4 marks.

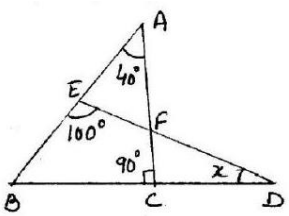
3. There is internal choice for each question. **4 × 4 = 16 M**

10. Find the values of x, y and z if $\overrightarrow{PQ} \parallel \overrightarrow{RS}$.



OR

Find 'x' in the following figure.



11. Find the value of 'K' if the mean of the following data is 7.2

x	2	4	6	8	10	12
f	4	7	10	6	K	3

OR

Study the following frequency distribution and answer the following questions?

C.I	1 - 10	11 – 20	21 – 30	31 – 40	41 – 50
F	4	11	10	8	5

A) What is the class size of all classes?

B) What is the lower boundary of modal class?

C) What is the class mark of median class?

D) what is the difference between lower limit of median class and upper limit of modal class?

12. find the mean of the following data in deviation method?

x	5	6	7	8	9	10
f	3	10	17	18	8	4

OR

Find the median and mode of the following data? And find their difference?

Weight	50	65	75	90	110	120
frequency	25	34	38	40	47	16

13. Draw figures for the following statement.

"If the arms of one angle are respectively perpendicular to the two arms of another angle then the two angles are either equal or supplementary".

OR

Draw a figure to the given information" It is given that $\angle XYZ = 64^0$ and XY is produced to point P. A ray YQ bisects $\angle ZYP$". And also find $\angle XYQ$ and reflex $\angle QYP$.

Time: 30 Mins. **PART – B** **Marks:10**

Instructions:

1. Answer All the questions. 20 × ½ = 10 M
2. Each question has 4 options. Write the capital letter indicating the answer in the given brackets.
3. Marks are not awarded for over writing answers.
4. Each question carries ½ mark.

Section – IV

Note: 1. Answer all questions

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

14. Which of the following is false?

    A) $\overleftrightarrow{AB} = \overleftrightarrow{BA}$ B) $\overrightarrow{AB} = \overrightarrow{BA}$ C) $\overline{AB} = \overline{BA}$ D) AB = BA

15. Which of the following is a simple Pythagorean triple?

    A) 2, 3, 4 B) 3, 4, 5 C) 5, 12, 16 D) 8, 15, 20

16. The median of the data 2.3, 3.02, 2.03, 3.2, 2.15 is _____

    A) 2.3 B) 2.03 C) 3.2 D) Both A & B

17. Choose the correct answer following.

    Statement P: Only one line can pass through the given point.

    Statement Q: Circles with same radii are equal.

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

18. The difference of the boundaries of a class is called _____

    A) class mark B) class size C) frequency D) class limits

19. "If a straight line intersects any one of two parallel lines, then it will intersect the other also" was introduced by _____

    A) Euclid B) John Play Fair C) Proclus D) Pythagoras

20. The mode of the following data is _____

x	10	12	14	16
f	4	7	5	3

    A) 10 B) 12 C) 13 D) 7

21. Range of the data "18, 24, 15, 17, 33, 16, 29, 3, 33, 21" is _____

    A) 33 B) 42 C) 48 D) 30

22. The pair of angles x^0 and $(180 – x)^0$ are _____ angles.

    A) Complementary B) Supplementary C) Conjugate D) linear pair

23. Match the following.

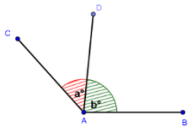
A. Point ( ) i) has length and breadth only

B. Line ( ) ii) breadless length

C. Surface ( ) iii) has no part

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 – ii, C – i

24. In the adjacent figure, 'a' and 'b' are _____ angles.



A) Linear pair B) co-interior C) adjacent D) vertically opposite

25. The Indian mathematician who used Pythagorean triplets before _____

A) Boudhayana B) Bhaskar Acharya C) Aryabhata D) Ramanujan

26. The edge of a solid is _____

A) Cube B) plane C) point D) Both B & C

27. The mean of (a – b) and (a + b) is _____

A) 2b B) 2a C) a D) b

28. Given $\sum fd$ = - 12, $\sum f$ = 20 and A = 15 then $\overline{x}$ = _____

A) 15.6 B) 14.6 C) 14.4 D) 12.4

29. Assertion: Mode of 2, 4, 3, 6, 3, 5, 3 is 3.

Reason: The observation which occur most frequently is called mode.

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.

30. The classes 1 – 8, 9 – 16, 17 – 24 are given. Lower boundary of 9 – 16 class is _____

A) 16.5 B) 8.5 C) 9.5 D) 12.5

31. Given $\angle POR$ = $3x^0$ and $\angle QOR$ = $2x + 10^0$. If POQ is a straight line, then 'x' = _____

A) 30^0 B) 34^0 C) 36^0 D) none of these

32. The angle between two hands of a clock at 6'O clock is _____

A) Acute B) Right C) Obtuse D) Straight

33. P: 2, 3, 7, 1, 3, 2, 3 Q: 7, 5, 9, 12, 5, 3, 8 R: 4, 4, 11, 7, 2, 3, 4

Which of the following is true?

A) Mean of P = Mode of R C) Mean of R = Median of Q

B) Median of Q = Mode of P D) Mean, Median and Mode of P are equal