SUMMATIVE ASSISEMENT – 1, JANUARY - 2022

MATHEMATICS PAPER – 2

(Modal Paper – 3)

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

Instructions to students:

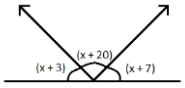
1. **There are four sections and 33 questions in this paper.**
2. **Answers should be written in answer sheets.**
3. **There is an internal choice in Section – Iv**
4. **Write all questions visible and legibly.**
5. **15 Minutes are given for reading the question paper and 2hr 30 min given for writing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

Section – 1

Note: 1. Answer all the questions

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

1. Write Play Fair's axiom.
2. Find 'x' in the adjacent figure?



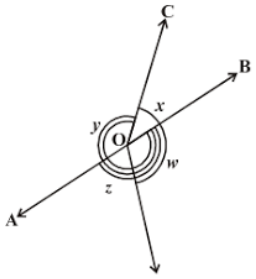
3. Give an example for a conjecture?
4. Find the median of the scores 75, 21, 56, 36, 81, 05, 42?

Section – II

Note: 1. Answer all the questions.

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

5. State whether the following statements are true or false? Give reason.
   A) The ray $\overrightarrow{AB}$ is same as the ray $\overrightarrow{BA}$.
   B) A whole is greater than a part.
6. If A, B, C are 3 points on al line and B lies between A and C, then prove that AC – AB = BC?
7. In the given figure, x + y = w + z, then prove that AOB is a straight line?



8. The mean 10, 12, 18, 13, P and 17 is 15. Find the value of 'P'?

9. Telephone department received applications for the post of operator. The number of applications received by the evening of first day, second day, third day and fourth day are 15, 40, 85, 100 respectively. Frame the frequency distribution table day wise to the above information.

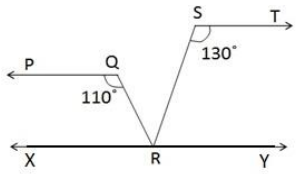
Section – III

Note: 1. Answer all the questions.

2. Each questions carries 4 marks.

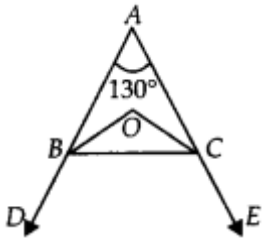
3. There is internal choice for each question. **4 × 4 = 16 M**

10. In the following figure, find the measure of ∠QRS?

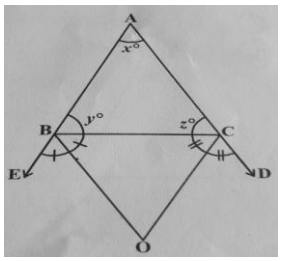


OR

In ΔABC, ∠A = 130^0. If BO and CO are bisectors of ∠B and ∠C, find ∠BOC?

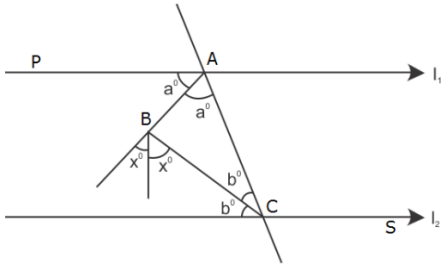


11. In the adjacent figure, the sides AB and AC of Δ ABC are produced to points E and D respectively. If bisectors Bo and CO of ∠CBE and ∠BCD respectively meet at point 'O', prove that ∠BOC = $90^0 - \frac{1}{2}$ ∠BAC.



OR

Using the given information in the following figure, find the value of 'x'.



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

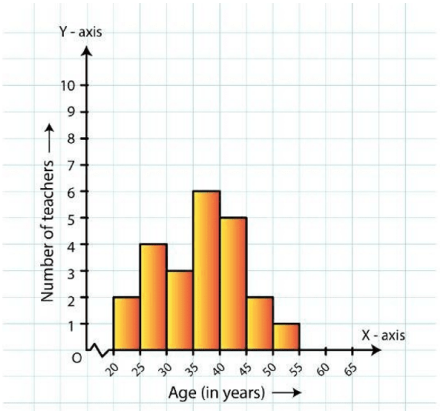
x	5	6	7	8	9	10
f	3	10	A	18	8	4

OR

Find mean of the following data in deviation method.

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

13.



A) Represent the data in above histogram as frequency distribution?

B) What is scale taken on X – axis?

C) Which age group teachers are more in the school?

OR

A company manufactures car batteries of a particular type. The life time (in years) of 40 batteries were recorded as follows:

2.6, 3,0, 3.7, 3.2, 2.2, 4.1, 3.5, 4.5, 3.5, 2.3, 3.2, 3.4, 3.8, 3.2, 4.6, 3.7, 2.5, 4.4, 3.4, 3.3, 2.9, 3.0, 4.3, 2.8, 3.5, 2.2, 3.9, 3.2, 3.2, 3.1, 3.7, 3.4, 4.6, 3.8, 3.2, 2.6, 3.5, 4.2, 2.9, 3.6.

Construct a grouped frequency distribution table with exclusive classes for this data, using class intervals of size 0.5 starting from the interval 2 – 2.5?

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. The object which has breadthless length is _____

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

15. Which of the following order is correct?

    A) Point – plane – solid – line segment C) point – solid – surface – line segment

    B) Point – line segment – solid – plane D) point – line segment – plane – solid

16. The lower boundary of the class 30 – 39 is _____

    A) 30 B) 39 C) 30.5 D) 39.5

17. Choose the correct answer following.

    Statement P: If $l \parallel m$ and $m \parallel n$, then $l \parallel n$.

    Statement Q: If $l \perp m$ and $m \perp n$, then $l \perp n$.

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

18. The average of the class boundaries is _____

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

19. Which of the following is false?

    A) There exists a pair of lines every where equidistant from one another.

    B) If a straight line intersects any one of two parallel lines, then it will intersect the other.

    C) Through a point not on a given line, exactly on parallel line may be drawn to the given line. D) None of these.

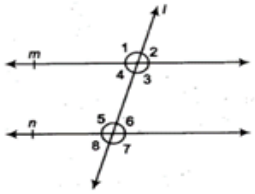
20. In a frequency distribution, the mid-value of a class is 15and the class size is 4, then the lower limit of the class is _____

    A) 10 B) 12 C) 13 D) 14

21. Tally marks are used to find _____

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

22. Match the following by reading the diagram.



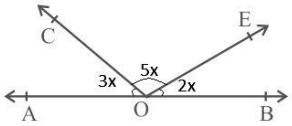
A. Corresponding angles ( ) i) $\angle 4, \angle 6$

B. Alternate interior angles ( ) ii) $\angle 1, \angle 8$

C. Co-exterior angles ( ) iii) $\angle 1, \angle 5$

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

23. In the adjacent figure, the value of 'x' is _____



A) 10^0 B) 18^0 C) 30^0 D) 45^0

24. Number of lines can be drawn from the given point is _____

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

25. Which of the following has no dimensions?

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

26. The mean of the observations x + 1, x and x – 1 is _____

A) 1 B) 3 C) x D) 3x

27. 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

28. Assertion: Range of first 100 natural numbers is 99

Reason: The difference of highest value and least value of a data is called range.

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.

29. The class interval of the frequency distribution having the classes 1 – 8, 9 – 16, 17 – 24 is

A) 7 B) 8 C) 9 D) 4.5

30. Two straight lines AB and CD cut each other at 'O'. if $\angle BOD = 63^0$ then $\angle BOC$ = ____

A) 63^0 B) 117^0 C) 17^0 D) 157^0

31. The 360^{th} part of a complete rotation is called _____

A) angle B) degree C) vertex D) terminated ray

32. Deviation d = _____

A) a – x B) f – a C) x – a D) $\sum(x - a)$

33. Mode of the data 2, 3, 3, 2, 3, 1 is P, then 'p' = _____

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