

II-PERIODIC TEST : 2022-23

CLASS - IX (CBSE)
MATHEMATICS

Time: 2 hrs.

M.M.: 50

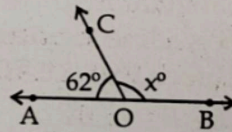
General Instructions :

- i) The question paper consists of 20 questions.
- ii) All questions are compulsory. The question paper comprises four sections A, B, C and D.
- iii) Section 'A' Comprises 5 questions of one mark each.
Section 'B' Comprises 5 questions of two marks each.
Section 'C' Comprises 5 questions of three marks each.
Section 'D' Comprises 5 questions of four marks each.
- iv) Internal choice is given in some questions.

SECTION 'A' [1×5=5]

Q.1. Simplify $(\sqrt{3} - \sqrt{2})(\sqrt{3} + \sqrt{2})$

- Q.2. In the adjoining figure AOB is a straight line. Find the value of x.



- Q.3. Perimeter of an equilateral triangle is 60 m. Find area of triangle.

OR

Find the length of each side of an equilateral triangle having an area $9\sqrt{3}$ cm².

- Q.4. If the point (a, 0) lies on $2x - y = 5$, find the value of 'a'.

- Q.5. Find the range of the data 12, 25, 18, 15, 20, 22, 6

SECTION 'B' [2×5=10]

- Q.6. An isosceles right angled triangle has area 8 cm². Find the length of its hypotenuse.

- Q.7. If a point C lies between two points A and B such that $AC = BC$, then prove that

$$AC = \frac{1}{2} AB$$

- Q.8. In $\triangle ABC$ if $3\angle A = 4\angle B = 6\angle C$. Calculate measure of $\angle A$, $\angle B$ and $\angle C$.

- Q.9. Show that angles opposite to equal sides are equal.

- Q.10. On which axis or quadrant following points lie :

- | | |
|--------------|-------------|
| i) (7, 0) | ii) (0, -5) |
| iii) (-6, 5) | iv) (2, -9) |

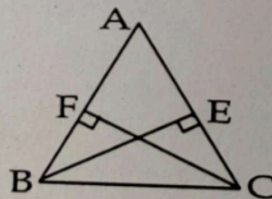
OR

Give geometric representation of $2x - 7 = 0$ as an equation in two variables.

SECTION 'C' [3×5=15]

- Q.11. ABC is a triangle in which altitudes BE and CF to the sides AC and AB are equal. Show that :

- i) $\triangle ABE \cong \triangle ACF$
- ii) ABC is an isosceles triangle



- Q.12. Express $1.3\overline{23}$ in the form $\frac{p}{q}$ where p, q are integers and $q \neq 0$

OR

Represent $\sqrt{3}$ on number line.

- Q.13. Find the area of a triangle two sides of which are 9 cm and 5 cm and perimeter is 22 cm.

Q.14. 70 students from a locality use different modes of transport to go to school as given below :

Mode of Transport	Car	Bus	Scooter	Bicycle	Rickshaw
No. of students	4	16	14	20	16

Draw the bar graph representing above data.

Q.15. Find six rational numbers between $\frac{3}{5}$ and $\frac{2}{3}$.

SECTION 'D' [4×5=20]

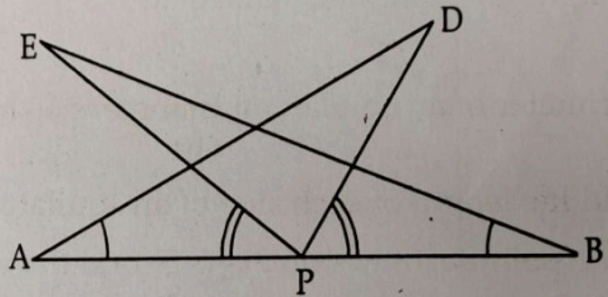
Q.16. Draw a histogram and frequency polygon on the same graph, for the following data :

Age in years	10-20	20-30	30-40	40-50	50-60	60-70
No. of patients	90	40	60	20	120	30

Q.17. The perimeter of a triangular field is 420 m and its sides are in the ratio 6 : 7 : 8. Find the area of the triangular field.

Q.18. In the given figure, AB is a line segment and P is the midpoint of it. D and E are points on the same side of AB such that $\angle BAD = \angle ABE$ and $\angle EPA = \angle DPB$

Show that : i) $\triangle DAP \cong \triangle EBP$
ii) $AD = BE$

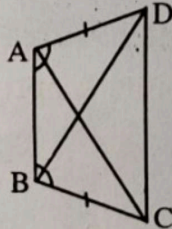


OR

In the given figure, ABCD is a quadrilateral in which $AD = BC$ and $\angle DAB = \angle CBA$.

Prove that :

- i) $\triangle ABD \cong \triangle BAC$
- ii) $BD = AC$
- iii) $\angle ABD = \angle BAC$



Q.19. Draw the graph of the equation $2x - y + 3 = 0$. Using the graph, find the value of y when (a) $x = 2$ (b) $x = -3$

Q.20. In quadrilateral ABCD, $AB \parallel DC$ and P is the midpoint of BC. On producing AP and DC meet at Q. Prove that

- (i) $AB = CQ$
- ii) $DQ = DC + AB$

