

Sample Paper

SUMMATIVE ASSESSMENT I – 2010-11

Class – IX

Time: - 3hrs.

Subject – Math

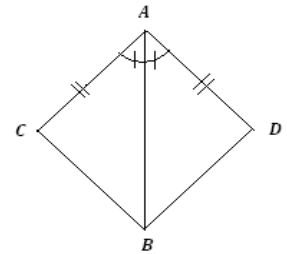
Max Marks– 80

General Instructions

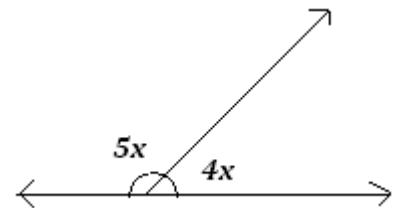
- i) All questions are compulsory.
- ii) The questions paper consists of 34 questions divided into four sections A, B, C and D. Section A comprises of 10 questions of 1 mark each, Section B comprises of 8 questions of 2 marks each section C comprises of 10 questions of 3 marks each and section D comprises of 6 questions of 4 marks each.
- iii) Question numbers 1 to 10 in section A are multiple choice questions where you are to select one correct option out of the given four.
- iv) There is no overall choice. However, internal choice has been provided in 1 question of two marks, 3 questions of three marks each and 2 questions of four marks each. You have to attempt only one of the alternatives in all such questions.
- v) Use of calculators is not permitted.

===== SECTION-A =====

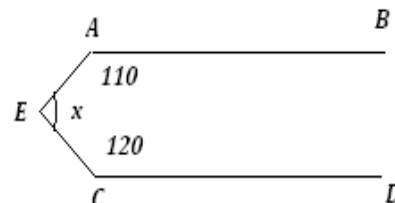
1. Between two rational numbers, there are
 - (a) Only one rational no.
 - (b) No rational no.
 - (c) Infinite rational no.
 - (d) No irrational no.
2. Which of the following is not an irrational number:
 - (a) $\sqrt{16}$
 - (b) $\sqrt{3}$
 - (c) $\sqrt{2}$
 - (d) $\sqrt{15}$
3. In the given fig. $\triangle ACB \cong \triangle ADB$ by using the rule
 - (a) ASA
 - (b) SAS
 - (c) AAS
 - (d) RHS
4. Which of the following needs a proof?
 - (a) Axiom
 - (b) Definition
 - (c) Postulate
 - (d) Theorem



5. The degree of the polynomial $P(x)=1$
 - (a) 1
 - (b) 0
 - (c) not defined
 - (d) none
6. The value of x in given fig. is
 - (a) 80°
 - (b) 20°
 - (c) 40°
 - (d) 60°
7. The value of $p\left(\frac{1}{2}\right)$ for $p(z) = z^4 - z^2 + z$ is
 - (a) $\frac{7}{16}$
 - (b) $\frac{3}{16}$
 - (c) $\frac{5}{16}$
 - (d) $\frac{1}{16}$



8. In the figure if $AB \parallel CD$, then value of x will be:
 - (a) 60°
 - (b) 70°
 - (c) 10°
 - (d) 130°



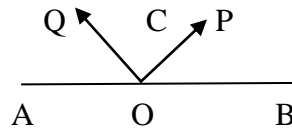
9. ABC is an isosceles triangle with $AB=AC$, altitudes are the sides AB & AC from vertices B & C . One altitude CF to be 4cm . If $BC=5\text{cm}$. Find EF , where BE is altitude to side AC .

drawn to
is found

- (a) 4cm (b) 5cm
(c) 3cm (d) none of these

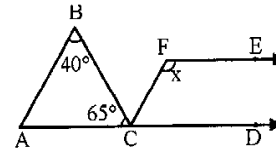
10. Ray OC stands on the line AOB, OP & OQ are bisectors of $\angle BOC$ & $\angle AOC$ respectively. Then $\angle POQ$ is:

- (a) 90° (b) 100°
(b) 45° (d) 120°



===== SECTION-B =====

11. In the given fig. $AB \parallel CF$ and $CD \parallel FE$. Find the value of x .



12. Find five rational numbers in between 3 and 4.

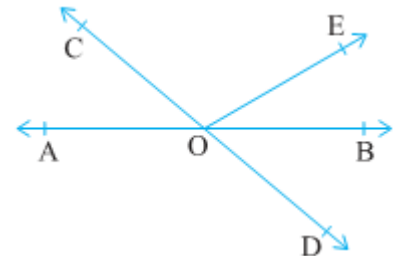
13. Express 0.927272727..... in to the p/q form.

14. Find the $f(0)$, $f(2)$ and $f(7)$ in the following polynomial: $f(y) = y^2 - y + 7$

15. Write the answer of each of the following questions:

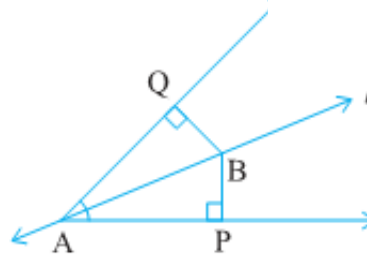
- What is the name of horizontal and the vertical lines drawn to determine the position of any point in the Cartesian plane?
- What is the name of each part of the plane formed by these two lines?
- Write the name of the point where these two lines intersect.

16. In the given figure lines AB and CD intersect at O. If $\angle AOC + \angle BOE = 70^\circ$ and $\angle BOD = 40^\circ$, find $\angle BOE$ and reflex $\angle COE$.



17. line l is the bisector of an angle $\angle A$ and B is any point on l . BP and BQ are perpendiculars from B to the arms of $\angle A$

- $\triangle APB \cong \triangle AQB$
- $BP = BQ$ or B is equidistant from the arms of $\angle A$.



18. Triangle ABC is right angled at A and $AB = AC$. Find angle B and angle C.

===== SECTION-C =====

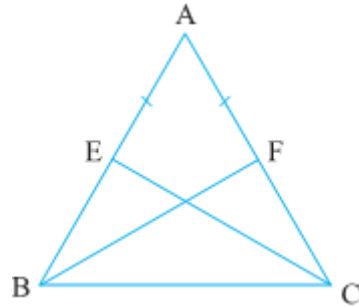
19. Evaluate : $(x-a)^3 + (x-b)^3 + (x-c)^3 - 3(x-a)(x-b)(x-c)$; where $3x = a+b+c$

OR

Factorize: $x^2 - 51x + 378$

20. If $x = 3 + \sqrt{8}$, then find the values $x + 1/x$

21. E and F are respectively the mid-points of equal sides AB and AC of triangle ABC show that: $BF = CE$



22. Prove that the sum of all angles of a triangle is 180°

23. AD is an altitude of an isosceles triangle ABC in which $AB = AC$. Show that:

a. AD bisects BC

b. AD bisects angle A

24. Find the Value of a if $(2y+3)$ is a factor of $2y^3 + 9y^2 - y - a$

25. Show $\sqrt{5}$ on the number line.

26. Rationalise the denominators of the following:

(i) $\frac{1}{\sqrt{7}}$

(ii) $\frac{1}{\sqrt{7} - \sqrt{6}}$

27. A rhombus shaped field has green grass for 18 cows to graze. If each side of the rhombus is 30m and its longer diagonal is 48m, how much area of grass field will each cow be getting?

28. Plot the points (x, y) given in the following table on the plane, choosing suitable units of distance on the axes.

x	-2	-1	0	1	3
y	8	7	-1.25	3	-1

===== SECTION-D =====

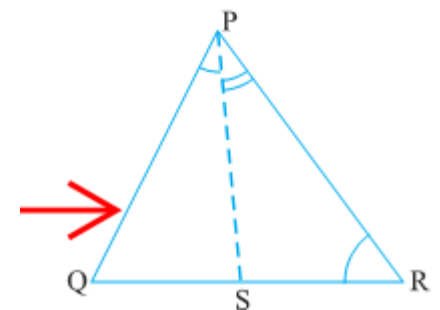
29. Find the values of a & b if $x^4 - 5x^3 + 4x^2 + ax + b$ is divisible by $x^2 - 3x + 2$.

30. Write all five Euclid's postulates.

31. Factorise: $(y^2 - 5y)^2 - 2(y^2 - 5y) - 24$

32. Verify that $x^3 + y^3 + z^3 - 3xyz = \frac{1}{2}(x+y+z)[(x-y)^2 + (y-z)^2 + (z-x)^2]$

33. In the given figure $PR > PQ$ and PS bisects angle QPR. Prove that $\angle PSR > \angle PSQ$



34. In the given figure the side QR of triangle PQR is produced to a point S. If the bisectors of $\angle PQR$ and $\angle PRS$ meet at point T, then prove that $\angle QTR = \frac{1}{2} \angle QPR$

