INTERNATIONAL INDIAN SCHOOL- DAMMAM

FIRST TERMINAL EXAMINATION, 2017 – 2018

SUB: MATHEMATICS **TIME: 3 HOURS**

CLASS : IX **MAXIMUM MARKS : 80**

SET – A

GENERAL INSTRUCTIONS

1. All questions are compulsory.
2. The question paper consists of 30 questions divided into 4 sections. Section A comprises of 6 questions of 1 mark each, Section B comprises of 6 questions of 2 marks each, Section C comprises of 10 questions of 3 marks each, Section D comprises of 8 questions of 4 marks each.
3. There is no overall choice in the question paper.
4. Use of calculator is not permitted.

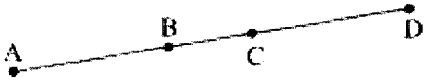
SECTION A (6 × 1 = 6marks)

1. Find an irrational number between 0.12 and 0.13
2. The side of an equilateral triangle is 10 cm. Find its area.
3. Write the coefficient of x^2 in $(2x - 5)(2x^2 - 3x + 1)$.
4. Two angles which form a linear pair are in the ratio 2: 7. Find the angles.
5. Given a point (3, 4). Find the distance of this point from the x axis and the y axis?
6. Find the remainder when $p(x) = 2x^3 - 4x + 7$ is divided by $x + 1$.

SECTION B (6 × 2 = 12marks)

7. If 2 is a zero of $ax^3 + x^2 - 2x + 4a - 9$, find the value of a.
8. Find the value of $\frac{\sqrt{32}+\sqrt{48}}{\sqrt{8}+\sqrt{12}}$
9. In which quadrant or on which axis each of the following points lie?

   $(-3, 5)$, $(2, 0)$, $(2, 4)$, $(-3, -6)$
10. Express $3.\overline{47}$ in the form p/q where p and q are integers and q≠0.
11. In Fig. , if AC = BD, then prove that AB = CD.

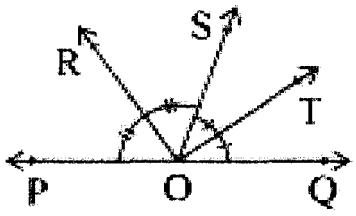


12. Expand $\left[\frac{1}{4}a - \frac{1}{2}b + 1\right]^2$ using a suitable identity.

SECTION C (10 × 3 = 30 marks)

13. Locate $\sqrt{11}$ on the number line.

14. In the figure, ray OS stands on a line POQ. Ray OR and ray OT are angle bisectors of ∠ POS and ∠ SOQ, respectively. If ∠ POS = x, find ∠ ROT.



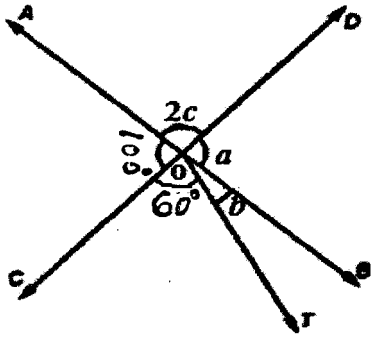
15. Factorise the following :

    a. $x^3 + 64y^3$

    b. $16x^2 + 4y^2 + 9z^2 - 16xy - 12yz + 24xz$

16. A field is in the shape of a trapezium whose parallel sides are 25 m and 10 m. The non-parallel sides are 14 m and 13 m. Find the area of the field.

17. Two straight lines AB and CD intersect at O. If ∠COT = 60^0 and ∠AOC = 100^0, find a, b and c from the figure.



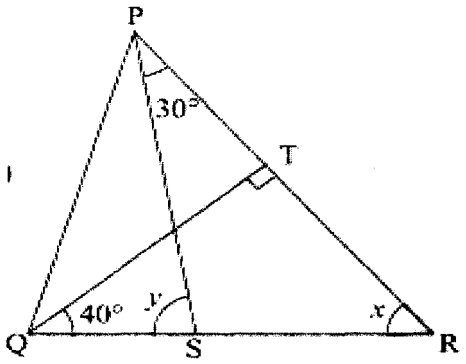
18. The sides of a triangular field are 41 m, 40 m and 9 m. Find the number of rose beds that can be prepared in the field, if each rose bed, on an average needs 900 cm^2 space.

19. Use a suitable identity to find the value of $\mathbf{99^3}$.

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

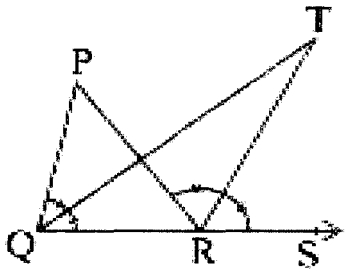
21. If a + b = 11 and ab = 28, find the value of $a^3 + b^3$.

22. In the figure, if QT ⊥ PR, ∠ TQR = 40° and ∠ SPR = 30°, find x and y.

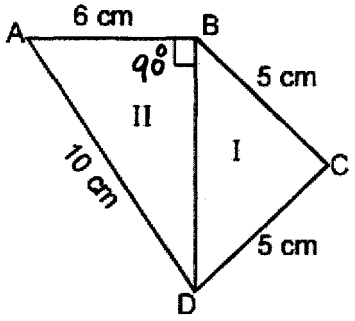


SECTION D (8 × 4 = 32 marks)

23. In the Fig, the side QR of Δ PQR is produced to a point S. If the bisectors of ∠ PQR and ∠ PRS meet at point T, then prove that ∠ QTR $= \frac{1}{2}$ ∠ QPR.



24. A chocolate in the form of a quadrilateral with sides 6 cm, 10 cm, 5 cm, 5 cm is cut into two parts along one of its diagonals by a lady. Part I is given to her maid and part II is equally divided among her driver and gardener.



(a) Is this distribution fair? Justify it by finding the areas of these parts.

(b) What value is depicted here?

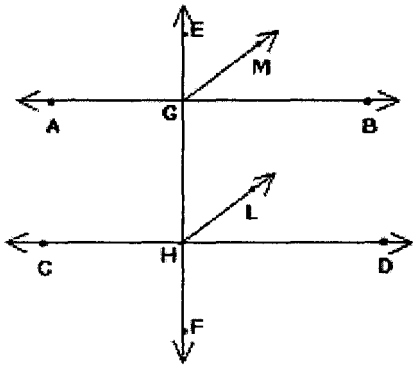
25. Plot the following points and write the name of the figure obtained by joining them in order:

P (- 3, 2), Q (- 7, - 3), R (6, - 3), S (2, 2)

26. If $a = 2+\sqrt{3}$, find the value of $\left(a - \frac{1}{a}\right)^2$

27. Factorize $x^3 - 2x^2 - 5x + 6$

28. In the figure, AB and CD are two parallel lines and EF is a transversal. GM and HL are the bisectors of the corresponding angles EGB and GHD. Prove that GM ‖ HL.



29. Simplify $\dfrac{(25)^{-3/2} \times (243)^{-3/5}}{(125)^{-5/3} \times (81)^{-3/4}}$

30. Without finding the cubes, factorise $(x - 2y)^3 + (2y - 3z)^3 + (3z - x)^3$.