MBS INTERNATIONAL SCHOOL
SECTOR-11, DWARKA
SESSION- 2019-20
PRACTICE PAPER
MATHEMATICS
CLASS - IX

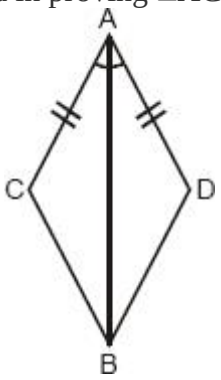
Time allowed: $1\frac{1}{2}$ Hours **Maximum Marks: 40**

General Instructions:

- *Read all the questions carefully.*
- *The question paper consists of 40 questions divided into four sections A, B, C & D. Section A comprises of 20 questions of 1 mark each. Section B comprises of 6 questions of 2 marks each. Section C comprises of 8 questions of 3 marks each and Section D comprises of 6 questions of 4 marks each.*
- *Use of calculator is not permitted.*

SECTION-A

1. In the given figure, the congruency rule used in proving ∠ACD ≅ ∠ADB is 1



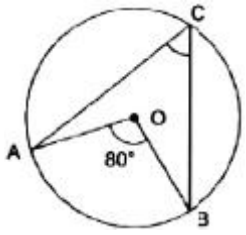
(a) ASA (b) SAS (c) AAS (d) RHS

2. The value of k, if (x – 1) is a factor of $4x^3 + 3x^2 – 4x + k$, is 1
(a) 1 (b) 2 (c) –3 (d) 3

3. Find the angle which is four times its complement is 10° less than twice its complement. 1

4. If x + 2 is a factor of $x^3 – 2ax^2 + 16$, then value of a is _____ 1

5. In the figure, if O is the centre of a circle, then find the measure of ∠ACB 1



6. The curved surface area of a right circular cylinder of height 21 cm is $957cm^2$. Find the diameter of the base of the cylinder. 1

7. The number 1.101001000100001... is a_____number. 1

8. If $3 + 5 – 8 = 0$, then the value of $(3)^3 + (5)^3 – (8)^3$ is _____ 1

9. The line represented by $y + 10 = 0$ is parallel to which axis _____. 1

10. Fill in the blank: The equation $2x + 5y = 7$ has a unique solution, if x and y are _____ 1

SECTION-B

11. If $x – k^2$ is a factor of $x^2 – k^2 x + k - 3$ find the value of k. 2

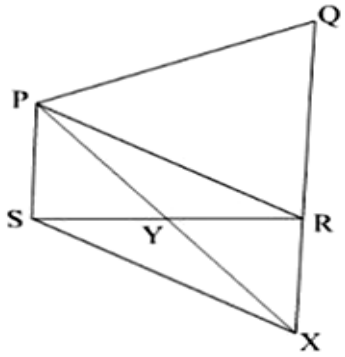
12. Find 'p' if $(\frac{1}{2}, \frac{3}{2})$ is a solution of $3 p x + 7y = 15$ 2

13. Plot A(3, 0), B(0, 2), C(-3, 0) and D(0, -2) on a graph paper. Join A to B, B to C, C to D and D to A to form a quadrilateral ABCD. Is ABCD is rhombus? Also write the equations of AC and BD. 2

SECTION-C

14. Express $0.\overline{6}$ and $0.3\overline{35}$ in the form of $\frac{p}{q}$ and find the value of $0.3\overline{35} - 0.\overline{6}$. Where p and q are integers. 3

15. PQRS is a quadrilateral. A line through S parallel to PR meets QR produced in X. Show that ar (PQRS) = ar (ΔPXQ). 3



16. If adjacent angles A and B of parallelogram ABCD are in the ratio 7:5, then find all the angles of parallelogram. 3

17. The perimeter of an isosceles triangle is 30 cm and each of its equal sides measures 12 cm. Find the area of the triangle. 3

SECTION-D

18. Construct a triangle PQR in which, $\angle Q = 105°$, $\angle R = 30°$ and PQ+QR+PR = 13 cm. Justify the construction. 4

19. A cone, hemisphere and a cylinder stand on the same base and have equal height. Find the ratio of their:

(a) Volumes, 4

(b) Curved surface areas.

Or

A group of 21 school students shared the ice-cream brick in lunch break to celebrate the Independence Day. If each one takes a hemispherical scoop of ice-cream of 3 cm radius, find the volume of ice-cream eaten by them.

(a) If the dimensions of the ice-cream brick are 10cm × 10cm × 12cm, how much volume of cream is left?

(b) Which value is depicted by the students?

(Use $\pi = 22/7$)

20. Without drawing a histogram, construct a frequency polygon for the given frequency distribution: 4

Class Interval	0-10	10-20	20-30	30-40	40-50
Frequency	50	40	45	25	5