

PRACTICE TEST (2019-20)**SUBJECT: MATHEMATICS****CLASS: X****MAX. MARKS: 80****DURATION: 3:00 HRS**

General Instructions –

- 1) All the questions are compulsory.
- 2) The question paper consists of 40 questions divided into four sections A, B, C and D.
- 3) 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. Section D comprises of 6 questions of 4 marks each.
- 4) Use of calculators is not permitted.

Section – A

Q1 – 10 are multiple choice questions. Select the most appropriate answer from the given options.

Q1. A letter is chosen at random from English alphabet. The probability that it is a consonant is

- | | |
|--------------------|------|
| a) $\frac{21}{26}$ | c) 0 |
| b) $\frac{5}{26}$ | d) 1 |

Q2. If $\tan A = \cot B$, the value of $A+B$ is

- | | |
|---------------|---------------|
| a) 90° | c) 30° |
| b) 45° | d) 0° |

Q3. The quadratic polynomial whose sum of zeroes is -3 and product of zeroes is -2 is

- | | |
|-------------------|-------------------|
| a) $x^2 + 3x - 2$ | c) $x^2 - 3x + 2$ |
| b) $x^2 - 2x + 3$ | d) $x^2 + 3x - 2$ |

Q4. How many maximum numbers of zeroes a quadratic polynomial can have?

- | | |
|------|------|
| a) 3 | c) 0 |
| b) 1 | d) 2 |

Q5. If $\sin 2A = 2\sin A$, then the value of A is

- | | |
|---------------|---------------|
| a) 30° | c) 0° |
| b) 45° | d) 60° |

Q6. The distance of the point $P(2, -5)$ from the x-axis is –

- | | |
|----------------------|-------------|
| a) $\sqrt{13}$ units | c) -5 units |
| b) 2 units | d) 5 units |

Q7. The mid-point of $(3, 8)$ and $(-1, -2)$ is –

- | | |
|-------------|---------------|
| a) $(3, 0)$ | c) $(1, 3)$ |
| b) $(3, 8)$ | d) $(-1, -3)$ |

Q8. Two figures having the same shape and size are said to be

- | | |
|--------------|------------------|
| a) Equal | c) Similar |
| b) Congruent | d) None of these |

Q9. Areas of two similar triangles are in the ratio 4 : 9. Sides of these triangles are in the ratio:

a) 2 : 3

b) 4 : 9

c) 81 : 16

d) 16 : 81

Q10. The roots of the equation $x^2 + 7x + 10 = 0$ are

a) 2 and 5

b) -2 and 5

c) -2 and -5

d) 2 and -5

Q11 – Q15. Fill in the blanks –

Q11. The number of terms in the A.P : 2, 5, 8, 59 is _____

Q12. A chord of a circle is equal to the radius of a circle. The angle subtended by the chord at a point on the major arc is _____

Q13. The empirical formula giving the relationship between the three measures of central tendency is _____

Q14. If the discriminant of a quadratic equation is zero, then its roots are _____ and _____.

Q15. The distance of the point P (15, -8) from the origin is _____

Q16 – Q20. Answer the following questions.

Q16. If $\tan \theta = \frac{2}{3}$, then find the value of $\sin^2 \theta + \cos^2 \theta$

Q17. Find the LCM of 45 and 105, if their HCF is 15.

Q18. What will be the decimal form of $\frac{5}{6}$?

Q19. If area of quadrant of a circle is 38.5 cm^2 then find its diameter. (Use $\pi = \frac{22}{7}$)

Q20. Find the common difference of the AP whose first term is 12 and 5th term is 0.

Section – B

Q21. Find the value of $\tan 48^\circ \tan 23^\circ \tan 42^\circ \tan 67^\circ \tan 45^\circ$.

OR

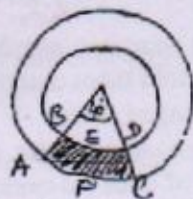
Q30. Draw a triangle ABC with side $BC = 7\text{cm}$, $\angle B = 45^\circ$, $\angle A = 105^\circ$.

Construct a triangle whose sides are $\frac{4}{3}$ times the corresponding sides of $\triangle ABC$.

Q31. Find the coordinates of the points which divide the line segment joining A (-2, 2) and B (2, 8) into four equal parts.

Q32. Solve $2x + 3y = 11$ and $x - 2y = -12$ algebraically and hence find the value of 'm' when $y = mx + 3$

Q33. Find the area of the shaded region, if radii of the two concentric circles with centre O are 7cm and 14cm respectively and $\angle AOC = 40^\circ$



Q34. A spherical glass vessel has a cylindrical neck 8 cm long, 2 cm in diameter, the diameter of the spherical part is 8.5 cm. Find the volume of the vessel.

Section - D

Q35. State and prove Pythagoras theorem.

Q36. Find the sum of the odd numbers between 0 and 50.

OR

The first and the last terms of an AP are 17 and 350 respectively. If the common difference is 9, how many terms are there and what is their sum?

Q37. The difference of squares of two numbers is 180. The square of the smaller number is 8 times the larger number. Find the two numbers.

OR

Find two consecutive positive integers sum of whose squares is 365.

Q38. An obrarrer 1.5 m tall is 28.5 m away from the chimney. The angle of elevation of the top of the chimney from her eyes is 45° . What is the height of the chimney?

Q39. A metallic sphere of radius 4.2 cm is melted and recast into the shape of a cylinder of radius 6 cm. Find the height of the cylinder.

Q40. The distribution below gives the weights of 30 students of a class. Find the median weight of the students.

Weight (in kg)	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75
No. of students	2	3	8	6	6	3	2