

Model Test Paper – 2021-22

MATHEMATICS

Max. Marks: 25

Time: 30minutes

Q.1 Fill in the blanks: [4]

a) $(3^5 \times 3^4) \div 3^{13} = \dots\dots\dots$

b) $(2a^2 + 4ab + b^2) - (a^2 - 3ab - b^2) = \dots\dots\dots$

c) $\sqrt{1764} = \dots\dots\dots$

d) Multiplicative inverse of $\frac{a}{b}$ is $\dots\dots\dots$

Q.2 State whether the following statements are true or false: [4]

a) The measure of the supplement of 160° is 60° . []

b) Radius = 2 x Diameter []

c) The area of a square field is 108900 sqm, then the length of its side 33m. []

d) Square of a negative integer is a negative integer. []

Q.3 Choose the correct alternative to make the given statement true: [5]

i) The value of x in $\frac{-20}{x} = \frac{-4}{3}$

- a) 12 b) 18 c) 15 d) 50.

ii) If x is an odd number, then the next odd number is

- a) $x+1$ b) $x+3$ c) $x-3$ d) $x+2$.

iii) Factorize $9x^2 - 24x + 16$

- a) $(3x)^2 - 4^2$ b) $3x^2 + 4^2$ c) $(3x+4)^2$ d) $(3x-4)^2$

iv) Two adjacent angles of a parallelogram are $(2x+25)^\circ$ and $(3x-5)^\circ$. The value of x is

- a) 32 b) 28 c) 36 d) 42.

v) A die is thrown. What is the probability of getting 6.

- a) 1 b) $\frac{1}{6}$ c) $\frac{6}{1}$ d) $\frac{1}{5}$

Q.4 Solve the following:

[6 × 2 = 12]

i) Solve :- $\frac{z(5z^2 - 80)}{(z + 4)}$

ii) The angles of a quadrilateral are in the ratio of 2 : 2 : 3 : 5. Find the measures of all the angles.

iii) If the dimensions of a cuboid are in the ratio **1: 2: 3** and its total surface area is 88 m², find its dimensions.

iv) Simplify: a) $m^4 - 256$

b) $\left(\frac{3}{2}m + \frac{2}{3}n\right)\left(\frac{3}{2}m - \frac{2}{3}n\right)$

v) Solve the equation: $\frac{y + 6}{4} + \frac{y - 3}{5} = \frac{5y - 4}{8}$.

vi) Find the cube root of 2744.

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