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|---|---|---|
| Paper: __Maths_____ | | Total Marks: _____15_____ |
| Month Test: __Annual_____ | | Obt. Marks: _____ |
| Theme/Unit: _____Complete_____ | | Grand Total: _____75_____ |
| Objective: | ID: _____ | Time: _____20 mins_____ |
| Roll No: _____ | class: _____10th_____ | Section: _____ |

# Pre Board Exams

## Q. No. 1: Encircle the correct option:

i).  An equation of the type $3^x + 3^{2-x} + 6 = 0$ is a/an _____ equations:
   a.  Reciprocal
   b.  Exponential
   c.  Linear
   d.  Radical

ii). The number of methods to solve quadratic equation are:
   a.  1
   b.  2
   c.  3
   d.  4

iii). In a ratio a:b "a" is called:
   a.  Relation
   b.  Antecedent
   c.  Consequent
   d.  None

iv). Product of cube root of unity is:
   a.  0
   b.  1
   c.  -1
   d.  3

v). If number of element in set A is 3 and in set B is 4, then number of element in A x B is:
   a.  3
   b.  4
   c.  12
   d.  None

vi). $\frac{3\pi}{4}$ radian =
   a.  115⁰
   b.  135⁰
   c.  150⁰
   d.  30⁰

vii).      The most frequent occurring observation in a data is called:
   a.  Mean
   b.  Median
   c.  Mode
   d.  Variation

viii).      Locus of a point in a plane equidistant from a fixed point is called:
   a.  Circle
   b.  Diameter
   c.  Radius
   d.  None

ix). The third proportional of $x^2$ and $y^2$ is:
   a.  $\frac{x^2}{y^2}$
   b.  $\frac{y^2}{x^2}$
   c.  $\frac{y^2}{x^4}$
   d.  $none$

x). 135⁰ into radian is:
   a.  $\frac{4\pi}{7}$
   b.  $\frac{5\pi}{3}$
   c.  $\frac{5\pi}{4}$
   d.  $\frac{3\pi}{4}$

xi). If $A \subseteq B$ then A- B is equal to:

a. A
c. B-A
b. B
d. Φ

xii).    $\text{Cosec}^2\theta - \cot^2\theta =$ _____
a. 1
c. 0
b. -1
d. Tanθ

xiii).    The different number of ways to describe a set are:
a. 1
c. 3
b. 2
d. 4

xiv).    A data in the form of frequency distribution is called:
a. Grouped data
c. Histogram
b. Ungrouped data
d. Frequency polygon

xv). The arcs opposite to incongruent central angles of a circle are always _____.
a. Perpendicular
c. Congruent
b. Parallel
d. Incongruent

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Paper: __Maths_____          Total Marks: _____60_____

Month Test: __Annual_____          Obt. Marks: _____

Theme/Unit: __Complete_____          Grand Total: _____75_____

Subjective:          ID: _____          Time: _____2 hours_____

Roll No: _____     class: _____10th_____     Section: _____

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# Pre Board Exams

**Q. No. 2: Solve the following Questions:**          **/12**
   i).  Define exponential equation?
   ii). Write quadratic equation having roots 0, -3.
   iii). Find third proportional to $a^3$, $3a^2$.
   iv). Find direct variation.
   v). Solve by factorization $3y^2 = y(y-5)$
   vi). Define ratio and give one example.

**Q. No. 3: Solve the following:**          **/12**
   i).  Resolve into partial fraction: $\dfrac{x-11}{(x-4)(x+3)}$
   ii). Find all subsets of the set{1, 2, 3}
   iii). Define union of sets.
   iv). Find "a" and "b" if: (a-4, b-2) = (2, 1)
   v). Find geometric mean of 2, 4, 8
   vi). Define harmonic mean.

**Q. No. 4: Solve the following:**          **/12**
   i).  Express $225^0$ angle into radian.
   ii). Define circumference of a circle.
   iii). Define polygon
   iv). Verify $(\tan\theta+\cot\theta)\tan\theta = \sec^2\theta$
   v). Define segment of a circle.

vi). Define circum angle.

**Part – II**

**Q.5: (a).** Solve by factorization: $\frac{x+1}{x} + \frac{x}{x+1} = \frac{25}{12}$ /4

**(b).** Prove that: $x^3 + y^3 + z^3 - 3xyz = (x+y+z)(x+wy+w^2z)(x+w^2y+wz)$ /4

**Q.6 (a).** Using theorem of componendo- dividendo: solve the equation. /4

$$\frac{\sqrt{x+3} + \sqrt{x-3}}{\sqrt{x+3} - \sqrt{x-3}} = \frac{4}{5}$$

**(b).** resolve into Partial fraction: $\frac{7x-25}{(x-4)(x-3)}$ /4

**Q. No. 7:** Prove that if two chords of a circle are congruent then they will be equidistant from the centre. /8

**OR**

Prove that any two angles in the same segment of a circle are equal.