**PRE BOARD –JAN 2024 M.M.-80**

**Time: 3 Hrs. MATHEMATICS**

**CLASS-XI**

**Section –A**

Q1:- Multiple Choice Questions:

**i** . Let A={1,2,3,4,5,6}, Then

a. 10∈A b. 5∈A c. 5∈ A d. 5∉A

**ii**. If A={2,4,6} and B={6,8,10}, then AUB=

a.{6} b.{2,4,6} c.{6,8,10} d. {2,4,6,8,10}

**iii**. If (x+1, y-2)=(3,1), then value of x is

1. 3 b. 2 c. 1 d. -1

**iv.** Radian measure corresponding to degree measure of 240[°](https://www.degreesymbol.net/) is

a. 4π b. c. d. 2π

**v.** Value of Sin []

a. 0 b. c. d.

**vi.** i6=

a. 1 b. -1 c. i d. -i

**vii.** Solve -12x>30, When x is a natural number

a. x< b. x= c. x> d. x<

**viii.** How many 3 digit numbers can be formed from the digits 1,2,3,4,5 when repetition is allowed .

a. 15 b. 5 c. 125 d. 25

**ix.** 9P3 =

a. 27 b. 504 c. 9 d. 72

**x.** Third Term of sequence whose nth term is an=is

a. 1/2 b. 2/3 c. 3/4 d. 4/5

**xi** Slope of line passing through the points (3,-2) and (2,4) is

1. 6 b. -6 c. 1 d. -1

6 6

**xii.** Equation of circle with centre at (0,0) and radius r is

a. x-y =0 b. x+y=r c. x2+y2=r2  d. x2-y2=r2

**xiii.** Co ordinate planes divide the space into \_\_\_\_\_\_\_\_\_\_ octants

a. 4 b. 6 c. 2 d. 8

**xiv.** lim x=>3(x+3)=

a. 0 b. 3 c. 6 d. 9

**xv.** lim x=>9 xn-an =

x- a

a. nan-1 b. nan+1 c. na d. 1

**xvi.** A die is thrown , the probability that a number less than 6will appear is

a. 5 b . 1 c. 3 d. 4

6 6 6 5

Q2:- Fill in the blanks from the given options

1, 6, {a,b,c}, 1, equal , -1, π, 4a

1. If A={a,b} and B={a,b,c}, then AWB is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Tan π =\_\_\_\_\_\_\_\_\_\_\_\_\_

4

1. i2 = \_\_\_\_\_\_\_\_\_\_\_\_
2. 3! =\_\_\_\_\_\_\_\_\_\_\_\_\_
3. If the line l1 is parallel to l2, then their slopes are \_\_\_\_\_\_\_\_\_\_\_\_\_
4. Length of the latus Rectum of the parabola y2=4ax is \_\_\_\_\_\_\_\_\_\_
5. lim **r-->1** πr2= \_\_\_\_\_\_\_\_\_\_\_
6. lim **x-->0** Sin x =

x

Q 3. State True or False for the following statements .

1. Derivative of x2 a+ x=10 is 20. (T/F)
2. Derivative of x3 is 3x (T/F)
3. If A={3,5,7,9} AND B={9,11,13}, then A ∩B is {9} (T/F)
4. Cos (x+y)= Cosx Cosy – Sinx Siny (T/F)
5. Second Term of the Sequence an=2n is 8 (T/F)
6. nCr = n! (T/F)

r!(n-r)!

1. If Ө is the inclination of a Line l, then tan Ө is called slope of Line l (T/F)
2. The x- axis and y-axis taken together a plane known as YZ- plane (T/F)

**Section –B**

Q4. Solve 5x-3<7, when x is an integer.

Q5. Compute 8!

6! X2!

Q6. Express i9+i19 in the form a+ib .

Q7. Find the equation of the line passing through the point (-4,3) with slope 1

2

Q8. Adie is rolled Let E be the event “die shows 4”and F be the event “die shows even number” .Are E and F mutually exclusive .

**Section – C**

Q9. Prove Sin2π+ Cos2π –tan2π = -1

6 3 4 2

Q10. Expand the expression (1-2x)5

OR

Using Binomial Theorem , evaluate (102)5

Q11. Find the 12th term of a G.P. whose 8th term is 192 and the common ratio is 2.

Q12. Find the centre and Radius of the circle (x+5)**2** +(y-3)2 = 36

Q13. Find the mean deviation about the mean for the date.

4,7,8,9,10,12,13,17

OR

Nane the octants in which the following points lie

(1,2,3), (4,-2,3), (4,-2,-5), (4,2,-5)

**Section - D**

Q14. If A={1,2,3,4}, B={3,4,5,6}, C={5,6,7,8} and D = [7,8,9,10). Find

1. AUB 2. AUC 3. BUC 4. BUD 5. AUBUC 6. AUBUD

(OR)

Find the value of other five Trigonometric Functions Cosx = -1/2 , x lies in third quadrant.

Q15. Determine n, if

1. **2nC3 : nC3 = 12:1** 2. **2nC3: nC3 = 11:1**

OR

Write the first Six Terms of the sequence, whose nth term is

**an = 2n-3**

**6**

Q16. 1. lim **x-->0** (x+1)5-1 2. lim **x-->2** 3x2-x-10

x x2-4

` OR

Find the Derivative

1. x-a 2. (x-1)(x-2)

x-b