APPENDICES
APPENDIX - A

Achievement Test in Mathematics - X Class

Name of the Student: ____________________ Roll No. __________ Date: __________

Name of the School: ____________________ Marks: __________

1) \( \Sigma n = \)

a) \( \frac{n(n-1)}{2} \)  

b) \( \frac{n(n-2)}{2} \)  

c) \( \frac{n(n+3)}{2} \)  

d) \( \frac{n(n+1)}{2} \)  

2) \( \left( \frac{x+y}{y} \right)^{x+y} \)

a) 8  

b) 7  

c) 9  

d) 6  

3) \((a+b)^3 \) వంటి సంఖ్య మేలను పడావండా ( )

a) 30  

b) 31  

c) 32  

d) 36  

4) \( y = x^2 + x + 5 \) ప్రత్యేకిత సంఖ్యలు యొక్క వస్తువు విస్తీర్ణం ఉదాహరణ ఉదాహరణ ( )

a) 3  

b) 4  

c) 5  

d) 6  

5) \( x^2 - 6x + 5 < 0 \) మాత్రము ( )

a) \( x<1, x>5 \)  

b) \( x=0, y=1 \)  

c) \( \{x/1<x<5\} \)  

d) \( \{x/2<x<2\} \)  

6) \( (x+y)^3 \) వంటి సంఖ్యలు యొక్క వస్తువు విస్తీర్ణం ఉదాహరణ ( )

a) \( T_r \)  

b) \( T_{r+1} \)  

c) \( T_{r-1} \)  

d) \( T \)  

7) మాట ప్రతి నంబరు నుండి నంబరు ఉదాహరణ ( )

a) 5000  

b) 5020  

c) 5030  

d) 5050  

8) 6c మేడు ( )

a) 12  

b) 15  

c) 16  

d) 20  

9) \( (x+y)^2 \) వంటి సంఖ్యలు యొక్క వస్తువు విస్తీర్ణం ( )

a) \( x^2 \)  

b) \( y^2 \)  

c) \( y^2 \)  

d) \( y^1 \)  

10) \( 0, -3, -6, -9 \) గా ఇటీరి d (ప్రశ్నాంశాలు) = ( )

a) 0  

b) 3  

c) -3  

d) 1  

11) \( \left( \frac{x+y}{a} \right)^4 \) వంటి సంఖ్యలు యొక్క వస్తువు విస్తీర్ణం ( )

a) 4\( \phi \)  

b) 3\( \phi \)  

c) 3, 4 యొక్క వస్తువు విస్తీర్ణం ( )

d) 5\( \phi \)  

12) a, A, b యొక్క మియిరి సంఖ్యలు యొక్క వస్తువు విస్తీర్ణం ( )
\[
\begin{array}{cccc}
\text{a) } \frac{a+b}{2} & \text{b) } \frac{a-b}{2} & \text{c) } \frac{a+A}{2} & \text{d) } \frac{A+b}{2} \\
13) & x^2-x-12=0 & \text{ ( ) } \\
& a) 4, 3 & b) 4, -3 & c) (-4, -3) & d) (-4, -2) \\
14) & x^2-4x+5=0 & \text{ ( ) } \\
& a) 4 & b) 3 & c) -3 & d) -4 \\
15) & a, ar, ar^2 \ldots \text{ ( ) } \\
& a) 4,3 & b) 4, -3 & c) (-4, -3) & d) ar, ar^2 \ldots \\
16) & \sec \theta - \tan \theta = 2 \text{ ( ) } \\
& a) -2 & b) 4 & c) \frac{1}{2} & d) 2 \\
17) & \sin 420^\circ \text{ ( ) } \\
& a) \frac{1}{\sqrt{2}} & b) \frac{1}{2} & c) 1 & d) \frac{\sqrt{3}}{2} \\
18) & 6, 4, 8, 3 \text{ ( ) } \\
& a) 6.25 & b) 6 & c) 6.75 & d) 7 \\
19) & \tan (A+B) = \sqrt{3}, \tan A = 1 \text{ ( ) } \\
& a) 30^\circ & b) 45^\circ & c) 15^\circ & d) 60^\circ \\
20) & \text{ ( ) } \\
& a) \text{ ( ) } & b) \text{ ( ) } & c) \text{ ( ) } & d) \text{ ( ) } \\
21) & \sin^2 30^\circ + \cos^2 30^\circ \text{ ( ) } \\
& a) 0 & b) 1 & c) -1 & d) \frac{1}{2} \\
22) & \text{ ( ) } \\
& a) 60,3 \sqrt{3} & b) \frac{60}{\sqrt{3}} & c) 60 & d) 60+\sqrt{3} \\
23) & \tan \theta \text{ ( ) } \\
& a) 0^\circ & b) 30^\circ & c) 45^\circ & d) 90^\circ \\
24) & f(x) = \frac{x^2-4}{x-2} (x \neq 2) \text{ ( ) } \\
& \lim_{x \to 2} f(x) \text{ ( ) } \\
& a) 2 & b) 3 & c) -2 & d) 4 \\
25) & 4x - 3y = K \text{ ( ) } \\
& a) 0 & b) 1 & c) -1 & d) 2 \\
\end{array}
\]

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26) \[ a) 5 \quad \quad b) 7 \quad \quad c) 2 \quad \quad d) 6 \]

27) \[ \begin{align*}
1 & -3 \\
2 & -1
\end{align*} \]

28) \[ x - 2y + 5 = 0 \text{ given } \text{ the graph of } y = x^2 + 5 \]

29) \[ \Delta ABC \text{ where } BC^2 + AB^2 = AC^2 \text{ as per the Pythagorean theorem, find the value} \]

30) \[ y = mx + c \text{ given } y = 2x + 3, y = 3x + 2 \text{ equations} \]

31) \[ \sin \theta = \cos \theta, 0^\circ < \theta < 90^\circ \text{ values of } \theta \text{ are} \]

32) \[ \begin{bmatrix}
x & 3 \\
1 & 2
\end{bmatrix} \begin{bmatrix}
2 \\
-1
\end{bmatrix} = \begin{bmatrix}
5 \\
0
\end{bmatrix} \text{ for the x values} \]

33) \[ 20 - 30 \text{ as values of the equation} \]

34) \[ a \text{ and b} \text{ values of the equation} \]

35) \[ 6x + 7y + 9 = 0 \text{ and } 5x + Ky - 7 = 0 \text{ values of the equation } K \text{ values} \]

36) \[ \left( \frac{1}{a^3} - \frac{1}{b^3} \right) \left( \frac{2}{a^3 + a^3} + \frac{1}{b^3 + b^3} \right) \text{ values} \]

37) \[ \sec^2 \theta + \csc^2 \theta \text{ values} \]


38) \( \lim_{x \to 0} \frac{x^2 + 5x}{x} = \ldots \) 
\( a) \infty \quad b) 0 \quad c) 5 \quad d) \text{does not exist} \)

39) \( 1 \times 1 < 2 \) तीनों दोनों 
\( a) x > 2 \) or \( x < 0 \) 
\( b) -2 < x < 2 \) 
\( c) x = 2 \) 
\( d) x = -2 \)

40) \( \text{सट्टा} A \) आणि \( \text{सट्टा} B \) यांच्यातील \( \text{कॉल्लेक्शन} \) लिस्टांपर्यंत विकसित करा 
\( a) 2 \) 
\( b) 3 \) 
\( c) 1 \) 
\( d) 0 \)

41) \( (-4, 4), (-2, 2), (6, 12) \) यांच्यातील \( \text{फळ} \) नं. \( \text{कॉल्लेक्शन} \) लिस्टांपर्यंत विकसित करा 
\( a) (0, 2) \) 
\( b) (0, 3) \) 
\( c) (0, 1) \) 
\( d) (0, 6) \)

42) \( 7x - 3y = 16 \) 
\( 7x + 3y = 36 \) 
\( 7x - 3y = 36 \) 
\( 7x + 3y = 20 \)

43) \( f(x) = (x + 1) \) \( \text{या} \) \( (1) \) \( \text{लिस्ट} \) \( \text{नं.} \) 
\( a) 1 \) 
\( b) -1 \) 
\( c) 0 \) 
\( d) 2 \)

44) \( \text{सट्टा} A \) आणि \( \text{सट्टा} B \) \( \text{यांच्यातील} \) \( \text{डीजे} \) \( \text{या} \) \( \text{लिस्ट} \) \( \text{नं.} \) 
\( a) 1 \) 
\( b) 2 \) 
\( c) 3 \) 
\( d) 0 \)

45) \( y = 2x + 1, y = 3x - 2 \) \( \text{या} \) \( \text{लिस्ट} \) \( \text{नं.} \) 
\( a) (3, 7) \) 
\( b) (5, 13) \) 
\( c) (4, 10) \) 
\( d) (2, 5) \)

46) \( f(x) = 5x \) \( \text{या} \) \( f'(x) \) \( \text{यांच्यातील} \) \( \text{लिस्ट} \) \( \text{नं.} \) 
\( a) \frac{1}{5} \) 
\( b) \frac{1}{x} \) 
\( c) \frac{x}{5} \) 
\( d) \frac{5}{x} \)

48) \( A, B \) \( \text{या} \) \( \text{लिस्ट} \) \( \text{नं.} \) 
\( a) 30 \) 
\( b) 8 \) 
\( c) -8 \) 
\( d) -32 \)

49) \( A = 10 \) \( \text{या} \) \( \text{लिस्ट} \) \( \text{नं.} \) 
\( B = 6 \) \( \text{या} \) \( \text{लिस्ट} \) \( \text{नं.} \) 
\( a) (1,2,3,4,5) \) 
\( b) (2,3) \) 
\( c) (2,3,6) \) 
\( d) (2,3,5) \)

50) \( f(x) = (3x-2y) \) \( \text{यांच्यातील} \) \( \text{लिस्ट} \) \( \text{नं.} \) 
\( a) 14 \) 
\( b) 18 \) 
\( c) 16 \) 
\( d) -16 \)

51) \( A, B \) \( \text{या} \) \( \text{लिस्ट} \) \( A \cap B = \Phi \) \( \text{या} \) \( \text{लिस्ट} \) \( \text{नं.} \) 
\( a) 6 \) 
\( b) 4 \) 
\( c) 8 \) 
\( d) 5 \)
52) Given $AP^2 = a^2 + d = 3$. Find $\frac{a}{d} = \ldots$.  

a) 17  
b) 16  
c) 15  
d) 14

53) $\lim_{x \to 3} \sqrt{\frac{x+15}{3}}$ =  

a) $\sqrt{4}$  
b) $\sqrt{5}$  
c) $\sqrt{7}$  
d) $\sqrt{6}$

54) $1 + 4 + 9 + 16 + \ldots + n^2$ =  

a) $\frac{n(n-1)}{2}$  
b) $\frac{n(n+1)}{2}$  
c) $\frac{n(n+1)(2n+1)}{6}$  
d) $\text{Not possible}$

55) $9x^2 - 6x + 1 = 0$ has two real roots.  

a) Positive  
b) Negative  
c) Both positive and negative  
d) No real roots

56) Let $A \subset B$. Which of the following statements is true?  

a) $A = B$  
b) $A \cap B$  
c) $A \cup B$  
d) $A \setminus B$

57) $x + y = 4$  
$y = 2$  

a) $(3, 1)$  
b) $(2, 1)$  
c) $(4, 1)$  
d) $(6, 1)$

58) a, b, c are real numbers. Which of the following statements is true?  

a) $a = 2b + c$  
b) $a = 2b - c$  
c) $a = \frac{2b}{c}$  
d) $a = \frac{2c}{b}$

59) $A = \begin{pmatrix} 1 & 2 & 3 \\ 1 & 2 & 3 \end{pmatrix}$  

a) $A^2$  
b) $A^3$  
c) $A^4$  
d) $A^5$

60) Which of the following statements is true?  

a) Sum  
b) Difference  
c) Product  
d) Quotient

61) Which of the following statements is true?  

a) Sum  
b) Difference  
c) Product  
d) Quotient

62) $(\sqrt{a} - b)^2$ is  

a) $8a^2b^3$  
b) $8a^2b^3$  
c) $8a^2b^3$  
d) $8a^2b^3$

63) $(x + y)^r$ and $(r + 1) = \ldots$  

a) $x^{r+1}$  
b) $x^{r+1}$  
c) $x^{r+1}$  
d) $x^{r+1}$
64) 5, 2, -12, -23, -22, -20
   a) 8 & b) 11 & c) 10 & d) 12

65) \( \frac{7}{5} + \frac{2}{7} \) = ............
   a) 6 & b) 8 & c) 13 & d) 20

66) 1.3 + 3.5 + 5.7 + ............
   a) \( n(n + 2) \) & b) \( n(n + 5) \) & c) \( (2n - 1)(2n + 1) \) & d) 2n (2n-1)

67) AM, GM, HM 
   a) \( A^2 = GH \) & b) \( G^2 = AH \) & c) \( H^2 = AG \) & d) AG = H

68) 5, 10, 3, 7, 2, 9, 6, 2, 11
   a) 6 & b) 5 & c) 7 & d) 11

69) \( \tan (90 + \theta) = \) ............
   a) \( \tan \theta \) & b) \( \cot \theta \) & c) \( -\cot \theta \) & d) \( -\tan \theta \)

70) \( \tan \theta = \frac{7}{24} \) \( \sin \theta \) \( \tan \theta = \) ............
   a) \( \frac{7}{25} \) & b) \( \frac{6}{25} \) & c) \( \frac{7}{23} \) & d) \( \frac{1}{24} \)

71) \( x^\frac{1}{2} = 0.2 \) \( \sqrt{x} \) \( x^\frac{1}{2} \) \( \sqrt{x} \) \( \sqrt{x} \)
   a) 0.08 & b) 0.008 & c) 0.8 & d) 8

72) 3 \( \text{and} \), 5 \( \text{and} \), 7 \( \text{and} \), 9 \( \text{and} \), 11 \( \text{and} \), 13 \( \text{and} \), 15 \( \text{and} \)
   a) 2 & b) 8 & c) 34 & d) 16

73) 2x - 7y = 12 \( \text{and} \) y - 3x = 2 \( \text{and} \)
   a) \( \frac{12}{7} \) & b) \( -\frac{12}{7} \) & c) \( \frac{2}{7} \) & d) \( -\frac{2}{7} \)

74) 2 \( \text{and} \), 4 \( \text{and} \), 4 \( \text{and} \), 4 \( \text{and} \), 4 \( \text{and} \), 4 \( \text{and} \), 4 \( \text{and} \)
   a) \( y = 2x - 4 \) & b) \( y = 2x + 4 \) & c) \( y = -2x + 4 \) & d) \( y = -2x - 4 \)

75) y = \( \sqrt{4x + 9} \) \( \text{and} \) \( \sqrt{4x - 9} \) \( \text{and} \)
   a) \( (2, 1) \) & b) \( (1, 2) \) & c) \( (-2, 1) \) & d) \( (0, 4) \)

76) \( f(x) \) \text{to} \( ax + b \) \( \text{and} \) \( bx + a \) \( \text{and} \)
   a) 0 & b) \( \frac{a}{b} \) & c) \( \frac{b}{a} \) & d) \( \frac{-b}{a} \)

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77) \( f = \{(1,2), (2,3), (3,4)\}, \ g = \{(2,5), (3,6), (4,7)\} \) \( \Rightarrow \ ( qof) : \)
   a) \( \{(1,5), (2,6), (3,7)\} \)  b) \( \{(1,5), (2,7), (3,7)\} \)
   c) \( \{(1,5), (2,7), (3,6)\} \)  d) \( \phi \)

78) \( f(x) = x^2 - x + 6 \) \( \Rightarrow \ f(4) \) \( \text{value} \)
   a) 0  b) 18  c) 6  d) 2

79) \( (x + y + 1) = (3, y - x) \) \( \Rightarrow \ x \)
   a) 1  b) -1  c) 2  d) -2

80) \( A, B, C \) \( \Rightarrow \) \( \text{elements} \) \( \Rightarrow \ A \cap (B \cup C) \)
   a) \((A \cap B) \cap (A \cap C)\)  b) \((A \cap B) \cup (A \cap C)\)
   c) \((A \cap B) \cap (A \cap C)\)  d) \((A \cup B) \cap (A \cap C)\)

81) \( \text{let } A = \{(1,2), (2,3), (3,4)\}, \ B = \{(2,5), (3,6), (4,7)\} \text{ and } C \)

82) \( \Delta ABC \equiv \Delta PQR \Rightarrow \ \overline{AB} : \overline{AC} \)
   a) \( \overline{PR} : \overline{PQ} \)  b) \( \overline{PR} : \overline{QR} \)
   c) \( \overline{PQ} : \overline{PR} \)  d) \( \overline{PR} : \overline{PQ} \)

83) \( \text{let } A = \{(1,2), (2,3), (3,4)\} \text{ and } B = \{(2,5), (3,6), (4,7)\} \)

84) \( x = \frac{2}{4} \) \( \Rightarrow \ x \text{ value} \)
   a) 4  b) -4  c) -1  d) 1

85) \( A = \begin{bmatrix} 2 & 1 \\ 3 & 4 \end{bmatrix}, \ B = \begin{bmatrix} 1 & 3 \\ 1 & 3 \end{bmatrix} \) \( \Rightarrow \ \begin{bmatrix} 2a + b \\ 3a + 4b \end{bmatrix} \)
   a) \[ \begin{bmatrix} 1 & 3 \\ 3 & 4 \end{bmatrix} \]  b) \[ \begin{bmatrix} 1 & 3 \\ 1 & 3 \end{bmatrix} \]
   c) \[ \begin{bmatrix} 1 & 3 \\ 2 & 4 \end{bmatrix} \]  d) \[ \begin{bmatrix} 2a + b \\ 3a + 4b \end{bmatrix} \]

86) \( \text{let } A = \{(1,2), (2,3), (3,4)\} \text{ and } B = \{(2,5), (3,6), (4,7)\} \)

87) \( \neg(p \land q) \)
   a) \( \neg p \land \neg q \)  b) \( \neg p \lor q \)  c) \( p \land q \)  d) \( \phi \)

88) \[ \begin{bmatrix} 2 & -4 \\ d & 5 \end{bmatrix} = 15 \Rightarrow d \text{ value} = \ldots \ldots \]
   a) -1  b) 1  c) 2  d) 4

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89) \( f(x) = 3x + 2 \)  (a) 1 (b) 4 (c) 8 (d) 15

90) \( y = f(x) = 2x + 5 \)  (a) \( x+5 \)  (b) \( x-5 \)  (c) \( 5-x \)  (d) \( 5+x \)

91) \( 1^3 + 2^3 + 3^3 + \ldots + n^3 = \frac{n^2(n+1)^2}{4} \)  (a) 3025  (b) 15  (c) 10  (d) 11

92) \( a:b \)  (a) \( a^2 : b^2 \)  (b) \( b : a \)  (c) \( \sqrt{a} : \sqrt{b} \)  (d) \( \sqrt{b} : \sqrt{a} \)

93) \( \sqrt{a} + \sqrt{b} + \sqrt{c} = 0 \)  (a) \( a + b + c = 0 \)  (b) \( a^2 + b^2 + c^2 = 0 \)  (c) \( a^2 + b^2 + c^2 = 1 \)  (d) \( a^2 + b^2 + c^2 = -1 \)

94) If \( AP \)  (a) \( a \)  (b) \( b \)  (c) \( c \)  (d) \( d \)

95) \( \frac{x}{2} = \frac{y}{3} = \frac{z}{4} \)  (a) \( a:b\)  (b) \( b:a\)  (c) \( c:b\)  (d) \( b:c\)

96) \( \begin{bmatrix} 4 & 3 \\ 2 & 6 \end{bmatrix} = \begin{bmatrix} 4 & 3 \\ 2 & 2x \end{bmatrix} \)  (a) 1  (b) 4  (c) 3  (d) 2

97) \( a + 2, a \text{ AM} \)  (a) \( a+2 \)  (b) \( a \)  (c) \( a-2 \)  (d) \( 3a \)

98) \( x = a \sin \theta, y = a \cos \theta \)  (a) \( \theta = \frac{1}{a} \)  (b) \( \theta = \frac{y}{a} \)  (c) \( \theta = x \)  (d) \( \theta = a \)

99) \( (4, -7), (1, -5) \)  (a) \( 2 \)  (b) \( 3 \)  (c) \( 4 \)  (d) \( 5 \)

100) \( A, B \)  (a) \( A, B \)  (b) \( B, A \)  (c) \( A \)  (d) \( B \)

101) \( 2x + 5 \)  (a) \( 7 \)  (b) \( 9 \)  (c) \( 5 \)  (d) \( 2 \)
102) If \( \tan x = \frac{r}{s} \) and \( s = \tan y \), find \( r \) if \( n = 1 \) and \( m = 2 \) ( )
   a) \( s^m \) b) \( s^n \) c) \( s^{m-1} \) d) \( s^{n-1} \)

103) \( 11 \times 10 \) is 17.5, and 10 times 15. Find the number ( )
   a) 16.5 b) 17.75 c) 18 d) 18.5

104) \( \sec^2 60^\circ - \tan 60^\circ \) = .......... ( )
   a) 1 b) 2 c) 3 d) 4

105) \( \sin 45^\circ \cos 15^\circ + \cos 45^\circ \sin 15^\circ \) = .......... ( )
   a) 1 b) \( \frac{1}{2} \) c) \( \frac{1}{\sqrt{2}} \) d) \( \frac{\sqrt{3}}{2} \)

106) 8, 16, 32, 64... are in a sequence ( )
   a) \( 2^{n-1} \) b) \( 2^{n+1} \) c) \( 2^{n^2} \) d) \( 2^{n+2} \)

107) \( \frac{1}{2} \frac{1}{4} \frac{1}{8} \frac{1}{16} \frac{1}{32} \) .......... are in the sequence ( )
   a) 2 b) 3 c) 4 d) 1

108) \( \lim_{x \to a} \frac{x^n - a^n}{x - a} = (x - a) = \) .......... ( )
   a) a \( a^{n-1} \) b) n \( a^{n-1} \) c) n - \( a^{n-1} \) d) \( a^{n-1} \)

109) \( A = (1,2) B = (3,4) \) and \( n (A \times B) = ( )
   a) 2 b) 3 c) 4 d) 5

110) \( \Delta ABC \) = 18 cm\(^2\) D, E, F on BC, CA, AB are points dividing the sides in the ratio \( A \times DEF \) = ( )
   a) 18 cm\(^2\) b) 9 cm\(^2\) c) 36 cm\(^2\) d) 4.5 cm\(^2\)

111) 5 \( \times \) 10, 3 \( \times \) 10, 4 \( \times \) 10 are in the sequence ( )
   a) 5 b) 3 c) 4 d) 8

112) \( A = (5,7,8), B = (7,8,9) \) calculate \( A-B \) ( )
   a) (5,9) b) (5,8) c) (5,7) d) (5)

113) \( \begin{bmatrix} 1 & 3 \\ 2 & 1 \end{bmatrix} = \begin{bmatrix} p & 2 \\ 2 & 1 \end{bmatrix} \) and \( a \) where ( )
   a) 5 b) -1 c) 0 d) 2

114) Find the coordinates of the point where \( A \) and \( B \) meet the circle ( )
   a) 0 b) 3 c) 2 d) -2
115) \( a + b + c + d = \) ____________
   a) 12 b) 9 c) 15 d) 18

116) \( 5a + 5c = \) ____________
   a) 50 b) 10 c) 20 d) 100

117) \( 2x^2 + 6x + 2 = 0 \) \( \) \( \) \( \) \( \) \( \)
   a) 4 b) 2 c) \( \pm 1 \) d) \( \pm 2 \)

118) \( a \) \( \) \( \) \( \) \( \) \( \) \( \) \( \)
   a) \( -3, -2 \) b) \( -2, -5 \) c) \( -2, 0 \) d) \( -5, 0 \)

119) \( a, b, c \) \( \) \( \) \( \) \( \) \( \)
   a) \( \frac{a + c}{2} \) b) \( \frac{a - c}{2} \) c) \( \sqrt{ac} \) d) \( ac \)

120) \( f(x) = 2x^2 - 3x + 2 \) \( g(x) = x^2 + 2x - 3 \)
   a) \( f(x)g(x) = x^4 + 2x^3 - 3x^2 - 6x + 6 \)
   b) \( f(x)g(x) = x^4 + 2x^3 - 3x^2 - 6x + 6 \)
   c) \( f(x)g(x) = x^4 + 2x^3 - 3x^2 - 6x + 6 \)
   d) \( f(x)g(x) = x^4 + 2x^3 - 3x^2 - 6x + 6 \)

121) \( x \) \( \) \( \) \( \) \( \) \( \)
   a) -1 b) 1 c) 2 d) -2

122) \( x^2 + x - 5 \) \( \) \( \) \( \) \( \) \( \)
   a) 1 b) -1 c) 2 d) -2

123) \( f(x) = 2 - x \) \( g(x) = 3x + 2 \)
   a) \( (f \circ g)(x) = 3x + 1 \)
   b) \( (f \circ g)(x) = 3x + 1 \)
   c) \( (f \circ g)(x) = 3x + 1 \)
   d) \( (f \circ g)(x) = 3x + 1 \)

124) \( P = \begin{bmatrix} 1 & 0 \\ 0 & 3 \end{bmatrix}, \quad \varphi = \begin{bmatrix} 1 & 0 \\ 0 & a+1 \end{bmatrix} \)
   a) 3 b) 1 c) 2 d) -2

125) \( A = \begin{bmatrix} 1 & 0 \\ 2 & 3 \end{bmatrix}, \quad B = \begin{bmatrix} 0 & 2 \\ 0 & 4 \end{bmatrix} \)
   a) \( \begin{bmatrix} 0 & 2 \\ 0 & 16 \end{bmatrix} \)
   b) \( \begin{bmatrix} 0 & 0 \\ 2 & 16 \end{bmatrix} \)
   c) \( \begin{bmatrix} 0 & 2 \\ 16 & 0 \end{bmatrix} \)
   d) \( \begin{bmatrix} 0 & 2 \\ 16 & 0 \end{bmatrix} \)

126) \( \text{If } a \text{ and } b \text{ are vectors, then } \text{ the angle between } a \text{ and } b \text{ is } \) ____________
   a) \( \sqrt{a^2 + b^2} \) b) \( \hat{a} \cdot \hat{b} \) c) \( \frac{a \cdot b}{|a||b|} \) d) \( \frac{a \cdot b}{|a||b|} \)

127) \( \begin{bmatrix} x & y \\ p & q \end{bmatrix} = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \)
   a) \( \begin{bmatrix} x & y \\ p & q \end{bmatrix} \)
   b) \( \begin{bmatrix} x & y \\ p & q \end{bmatrix} \)
   c) \( \begin{bmatrix} x & y \\ p & q \end{bmatrix} \)
   d) \( \begin{bmatrix} x & y \\ p & q \end{bmatrix} \)

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129) \[ \frac{3b}{a+b+2ab} \] is equal to
(a) \( \frac{1}{a+b} \)  
(b) \( \sqrt{a+b} \)  
(c) \( \frac{1}{\sqrt{a+b}} \)  
(d) \( \sqrt{a+b} \)

130) \( \sin 30^\circ = \cos A \) where A is
(a) 30°  
(b) 60°  
(c) 45°  
(d) 90°

131) \( \sin \theta = \frac{1}{2} \) where \( \cot \theta = \)
(a) \( \frac{1}{2} \)  
(b) -\( \frac{1}{2} \)  
(c) 1  
(d) \( \sqrt{3} \)

132) \( a + b + 2ab \) is equal to
(a) \( a + b \)  
(b) \( \sqrt{a+b} \)  
(c) \( \frac{1}{a+b} \)  
(d) \( \sqrt{a+b} \)

133) \( (64)^{\frac{1}{2}} \) is equal to
(a) 8  
(b) 4  
(c) 12  
(d) 16

134) \( c \) is equal to when \( a = b \) and \( a = c \) and \( b = c \) and \( a = c \) when \( a = b \) and \( b = c \) and \( c = a \) when \( a = b \) and \( b = c \) and \( c = a \) when \( a = b \) and \( b = c \) and \( c = a \) when \( a = b \) and \( b = c \) and \( c = a \) when \( a = b \) and \( b = c \) and \( c = a \)
(a) 1  
(b) 2  
(c) 3  
(d) 6

135) \( 10, 8, 6 \) is equal to when \( 10, 8, 6 \) is equal to when \( 10, 8, 6 \) is equal to when \( 10, 8, 6 \) is equal to when \( 10, 8, 6 \) is equal to when \( 10, 8, 6 \) is equal to when \( 10, 8, 6 \) is equal to when \( 10, 8, 6 \)
(a) 10  
(b) 8  
(c) 6  
(d) 10

136) \( x, y \) is equal to when \( x, y \) is equal to when \( x, y \) is equal to when \( x, y \) is equal to when \( x, y \) is equal to when \( x, y \) is equal to when \( x, y \) is equal to when \( x, y \)
(a) \( \frac{x+y}{2} \)  
(b) \( \frac{2xy}{x-y} \)  
(c) \( \frac{2xy}{x+y} \)  
(d) \( \sqrt{xy} \)

137) \( 200 - \sum_{n=1}^{\infty} n = \) \( 200 \)
(a) 10  
(b) 0  
(c) 1  
(d) -10

138) \( \sum_{r=0}^{\infty} (x^r)^r = \) \( \sum_{r=0}^{\infty} (x^r)^r = \) \( \sum_{r=0}^{\infty} (x^r)^r = \) \( \sum_{r=0}^{\infty} (x^r)^r = \) \( \sum_{r=0}^{\infty} (x^r)^r = \) \( \sum_{r=0}^{\infty} (x^r)^r = \) \( \sum_{r=0}^{\infty} (x^r)^r = \)
(a) 0  
(b) 1  
(c) -1  
(d) p

139) \( 2^{x^2} = 4^{x^2} \) when \( x = \)
(a) 10  
(b) 11  
(c) 12  
(d) 13

140) \( x < 0, y > 0 \) when \( x, y \) is equal to when \( x, y \) is equal to when \( x, y \) is equal to when \( x, y \) is equal to when \( x, y \) is equal to when \( x, y \) is equal to when \( x, y \)
(a) I  
(b) II  
(c) III  
(d) IV
141) \(10^n = 10^{2n+1}\) \(\therefore n = \) 
\(\begin{array}{llll}
a) 1 & b) 2 & c) 3 & d) 4 \\
\end{array}\)

142) \(2x^2 - 9x + 8 = 0\) तीनों के वर्गाक्षेत्र गुणकों के बीच का अंतर = 
\(\begin{array}{llll}
a) \frac{-9}{2} & b) 2 & c) 4 & d) \frac{9}{2} \\
\end{array}\)

143) \(\tan 60^\circ - \tan 15^\circ \) \(\therefore \) \(\) 
\(\begin{array}{llll}
a) 1 & b) 2 & c) 3 & d) 4 \\
\end{array}\)

144) \(f : A \rightarrow B, g : B \rightarrow C\) तीनों (gof) संरचना समझें 
\(\begin{array}{llll}
a) (gof) : A \rightarrow C & b) (gof) : C \rightarrow A & c) (gof) : A \rightarrow B & d) (gof) : B \rightarrow A \\
\end{array}\)

145) \(2x - 3y + 12 = 0\) आस्तिकीय कोणों के बीच का अंतर 
\(\begin{array}{llll}
a) 2x + 3y + 5 = 0 & b) 4x - 6y + 20 = 0 & c) 4x + 9y + 12 = 0 & d) x - 3y + 8 = 0 \\
\end{array}\)

146) \(x = 3\) से आधे तक \(x\) निर्देशित 
\(\begin{array}{llll}
a) (0,3) & b) (3,0) & c) (0,-3) & d) (-3,0) \\
\end{array}\)

147) 2, 3, 2, 3, 1, \(p \in\mathbb{R}\) तीनों \(p\) तीनों \(p\) निर्देशित 
\(\begin{array}{llll}
a) 1 & b) 2 & c) 3 & d) \text{सत्य}
\end{array}\)

148) \(a\sin \alpha = \frac{x}{y}, \cos \alpha = \frac{a}{b}\) तीनों \(\cot \alpha\) निर्देशित 
\(\begin{array}{llll}
a) \frac{x}{a} & b) \frac{y}{b} & c) \frac{bx}{ay} & d) \frac{ay}{bx} \\
\end{array}\)

149) \(f : N \rightarrow \mathbb{R}, f(x) = \frac{10}{x-1}\) \(\forall x \neq 1\) \(\alpha\) तीनों \(f\) तीनों \(\beta\) समान 
\(\begin{array}{llll}
a) N & b) N + 1 & c) N - 1 & d) N - 10 \\
\end{array}\)

150) 3, 5 \(\alpha\) तीनों \(\beta\) \(\gamma\) समान 
\(\begin{array}{llll}
a) \frac{15}{4} & b) \frac{13}{4} & c) \frac{17}{4} & d) \frac{11}{4} \\
\end{array}\)
1. \( \sum n = \) ( )
   a) \( \frac{n(n+1)}{2} \) b) \( \frac{n(n-1)}{2} \) c) \( \frac{n(n+3)}{2} \) d) \( \frac{n(n+1)}{2} \)

2. The number of terms in the expansion of \( \left( \frac{x+y}{y} \right)^8 \) is ( )
   a) 8 b) 7 c) 9 d) 6

3. The sum of the coefficients in the expansion of \( (a+b)^5 \) is ( )
   a) 30 b) 31 c) 32 d) 36

4. The shape of the curve, which satisfy the graph \( y = x^2 \) is ( )
   a) x-axis b) y-axis c) parabola d) Straight line

5. The solution of \( x^2 - 6x + 5 < 0 \) is ( )
   a) \( x<1, x>5 \) b) \( x=0, y=1 \) c) \( \{x/1<x<5\} \) d) \( \{x/-2<x<2\} \)

6. The general term in the expansion of \( (x+y)^n \) is denoted by ( )
   a) \( T_r \) b) \( T_{r-1} \) c) \( T_{r+1} \) d) \( T \)

7. The sum of first 100 natural numbers is ( )
   a) 5000 b) 5020 c) 5030 d) 5050
8. The value of \(6c_1\) is
   a) 12    b) 15    c) 16    d) 20

9. The last term in the expansion of \((x+y^2)^6\) is
   a) \(x^6\)    b) \(y^6\)    c) \(y^2\)    d) \(y^{12}\)

10. The common difference, 'd' of the progression 0, -3, -6, -9 is
    a) 0    b) 3    c) -3    d) 1

11. Which term is the middle term of the expansion \(\left(\frac{x}{a} + \frac{y}{b}\right)^6\)
    a) 4\(^{th}\)    b) 3\(^{rd}\)    c) 3\(^{rd}\), 4\(^{th}\) terms    d) 5\(^{th}\)

12. If \(a, A, b\) are in Arithmetic progression, then their arithmetic mean is
    a) \(\frac{a+b}{2}\)    b) \(\frac{a-b}{2}\)    c) \(\frac{a+A}{2}\)    d) \(\frac{A-b}{2}\)

13. The roots of \(x^2-x-12 = 0\) are
    a) 4, 3    b) 4, -3    c) (-4, 3)    d) (-4, -2)

14. The value of the discriminant of the equation \(x^2-4x+5=0\) is
    a) 4    b) 3    c) -3    d) -4

15. The progression of the terms \(a, ar, ar^2\ldots\ldots\) is
    a) geometric progression    b) Arithmetic progression
    c) Harmonic progression    d) Infinite geometric progression

16. If \(\sec \theta - \tan \theta = 2\), then \(\sec \theta + \tan \theta = \)
    a) -2    b) 4    c) \(\frac{1}{2}\)    d) 2
17. The value of \( \sin 420^\circ \) is 

- a) \( \frac{1}{\sqrt{2}} \)
- b) \( \frac{1}{2} \)
- c) 1
- d) \( \frac{\sqrt{3}}{2} \)

18. If the frequencies of 6, 4, 8, 3 are 4, 2, 5, 1 respectively then the arithmetic mean \( \bar{X} = \) 

- a) 6.25
- b) 6
- c) 6.75
- d) 7

19. If \( \tan (A+B) = \sqrt{3} \) and \( \tan A = 1 \) then the value of \( B \) is 

- a) \( 30^\circ \)
- b) \( 45^\circ \)
- c) \( 15^\circ \)
- d) \( 60^\circ \)

20. The most frequently occurring value in a data is 

- a) Mean
- b) Median
- c) Frequency
- d) Mode

21. The value of \( \sin^2 30^\circ + \cos^2 30^\circ \) is 

- a) 0
- b) 1
- c) -1
- d) \( \frac{1}{2} \)

22. If a man who stands 60 Mts away from the foot of a tower, observed that the angle of elevation of the top is \( 30^\circ \) then the height of the tower is 

- a) \( 60 \sqrt{3} \) Mts
- b) \( \frac{60}{\sqrt{3}} \) mts
- c) 60 mts
- d) \( 60 + \sqrt{3} \) mts

23. If \( \tan \theta \) is not defined, then the value of \( \theta \) is 

- a) \( 0^\circ \)
- b) \( 30^\circ \)
- c) \( 45^\circ \)
- d) \( 90^\circ \)

24. If \( f(x) = \frac{x^2 - 4}{x - 2} \) then \( \lim_{x \to 2} f(x) \) is 

- a) 2
- b) 3
- c) -2
- d) 4
25. If the straight line $4x-3y=K$ passes through the origin then the value of $K$ is
   a) 0  b) 1  c) -1  d) 2

26. The mode of 2,5,6,7,2,5,2,5,2, is
   a) 5  b) 7  c) 2  d) 6

27. The determinant of the matrix $\begin{pmatrix} 3 & -1 \\ 1 & 2 \end{pmatrix}$ is
   a) 7  b) 5  c) 4  d) 6

28. The slope of the line, perpendicular to $x-2y+5=0$ is
   a) 2  b) $\frac{1}{2}$  c) -2  d) $-\frac{1}{2}$

29. In $\triangle ABC$ if $BC^2+AB^2 = AC^2$ then the vertex containing the right angle is
   a) A  b) B  c) C  d) None

30. The point of intersection of the lines $y = mx+c$ and $y$ axis is
   a) (0,0)  b) (0,-c)  c) (c,0)  d) (0,c)

31. If $\sin \theta = \cos \theta$, $0^\circ < \theta < 90^\circ$, the value of $\theta$ is
   a) $60^\circ$  b) $45^\circ$  c) $135^\circ$  d) $30^\circ$

32. If $\begin{bmatrix} x \\ 1 \\ 2 \end{bmatrix} \begin{bmatrix} 3 & 2 \\ -1 & 0 \end{bmatrix} = \begin{bmatrix} 5 \\ 0 \end{bmatrix}$ then the value of $x$ is
   a) 4  b) -4  c) 5  d) -5

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33. The class interval of \( \begin{bmatrix} 10 & -20 \\ 20 & -30 \\ 30 & -40 \end{bmatrix} \) is ( )
   a) 9       b) 11       c) 10       d) 12

34. If the side of a square is 2 units, then its diagonal is ( )
   a) 4       b) \( \sqrt{8} \)       c) \( \sqrt{2} \)       d) 2

35. If the lines \( 6x+7y+9=0 \) and \( 5x+ky-7=0 \) are perpendicular, then the value of \( K \) is ( )
   a) 30       b) \( \frac{5}{4} \)       c) \( \frac{-30}{7} \)       d) \( \frac{7}{30} \)

36. The value of \( \left( \frac{\frac{1}{a^3} - b^3}{a^3 + a^3b^3 + b^3} \right) \) is ( )
   a) \( a+b \)       b) \( a-b \)       c) \( a^3 - b^3 \)       d) \( a^3 + b^3 \)

37. The value of \( \sec^2\theta + \csc^2\theta \) is ( )
   a) 1       b) \( \cos^2\theta \)       c) \( \sec^2\theta \cos^2\theta \)       d) \( \csc^2\theta \)

38. \( \lim_{x \to 0} \frac{x^2 + 5x}{x} = \) ( )
   a) \( \infty \)       b) 0       c) 5       d) can not be found

39. The solution of \( |x|<2 \) is ( )
   a) \( x>2 \) or \( x<-2 \)       b) \(-2<x<2 \)       c) \( x=2 \)       d) \( x=-2 \)

40. The number of common tangents that can be drawn to two circles which touch internally is ( )
   a) 2       b) 3       c) 1       d) 0
41. The centroid of the triangle with vertices (-4, 4), (-2, 2), (6, 12) is (  )
   a) (0,2)    b) (0,3)    c) (0,1)    d) (0,6)

42. The equation of the straight line which passes through (3, -5) and having slope \( \frac{7}{3} \) is (  )
   a) 7x - 3y = 16    b) 7x + 3y = 36    c) 7x - 3y = 36    d) 7x + 3y = 20

43. If x+1 is a factor of f(x) then the value of f(-1) is (  )
   a) 1    b) -1    c) 0    d) 2

44. The number of tangents that can be drawn to a circle from an external point is (  )
   a) 1    b) 2    c) 3    d) 0

45. The point of intersection of the lines \( y = 2x + 1 \), \( y = 3x - 2 \) is (  )
   a) (3, 7)    b) (5, 13)    c) (4, 10)    d) (2, 5)

46. The function denoted by \( f(x) = \frac{x}{3} \) is (  )
   a) one-one    b) onto    c) Bijective    d) Constant

47. If \( y = f(x) = 5x \), then the value of \( f^{-1}(x) \) is (  )
   a) \( \frac{1}{5} \)    b) \( \frac{1}{x} \)    c) \( \frac{x}{5} \)    d) \( \frac{5}{x} \)

48. If A and B are true sets such that \( A \subseteq B \) \( n(A) = 12 \) \( n(B) = 20 \), then \( n(B - A) = (  ) \)
   a) 30    b) 8    c) -8    d) -32

49. If \( A = \) the set of prime numbers less than 10 and \( B = \) The set of integers less that 6 then \( A \cap B = (  ) \)
   a) \( \{1, 2, 3, 4, 5\} \)    b) \( \{2, 3\} \)    c) \( \{2, 3, 6\} \)    d) \( \{2, 3, 5\} \)
50. The value of \( f = (3x-2y) \) at \((6,1)\) is
   a) 14   b) 18   c) 16   d) -16

51. \( A, B \) are two sets such that \( A \cap B = \emptyset \), \( n(A \cup B) = 20 \) \( n(A)=12 \), then \( n(B) = \)
   a) 6   b) 4   c) 8   d) 5

52. In an AP if \( a=2, d=3 \) then \( t_6 = \)
   a) 17   b) 16   c) 15   d) 14

53. \( \lim_{x \to 3} \sqrt[3]{\frac{x+15}{3}} = \)
   a) \( \sqrt[3]{4} \)   b) \( \sqrt[3]{5} \)   c) \( \sqrt[3]{7} \)   d) \( \sqrt[3]{6} \)

54. \( 1+4+9+16+\ldots+\ldots+n^2 = \)
   a) \( \frac{n(n-1)}{2} \)   b) \( \frac{n(n+1)}{2} \)   c) \( \frac{n(n+1)(2n+1)}{2} \)   d) None

55. The nature of the roots of \( 9x^2 - 6x + 1 = 0 \) is
   a) Complex   b) Real   c) Real and equal   d) None

56. \( A \subseteq B \) is denoted by
   a) [Diagram A]   b) [Diagram B]   c) [Diagram C]   d) [Diagram D]

57. The point of intersection of \( x+y=4 \) and \( x-y=2 \) is
   a) \((3,1)\)   b) \((2,1)\)   c) \((4,1)\)   d) \((6,1)\)

58. If \( a, b, c \) are in AP then
   a) \( a=2b+c \)   b) \( a=2b-c \)   c) \( a = \frac{2b}{c} \)   d) \( a = \frac{2c}{b} \)
59. If \( A = \begin{bmatrix} 1 & 2 \\ 1 & 3 \end{bmatrix} \) then \( 5A = \)

\[ \begin{bmatrix} 5 & 2 \\ 5 & 3 \end{bmatrix} \]

\[ \begin{bmatrix} 5 & 10 \\ 5 & 15 \end{bmatrix} \]

\[ \begin{bmatrix} 5 & 2 \\ 5 & 10 \end{bmatrix} \]

d) None

60. Which of the following belongs to central processing unit

a) Input unit  
b) Output Unit  
c) Control unit  
d) None

61. To describe an algorithm as a chart, the following is used

a) Flow chart  
b) Software  
c) Transister  
d) None

62. Third term in the expansion of \( (\sqrt{a} - b)^6 \) is

a) \( 8c_2 a^4 b^3 \)  
b) \( 8c_2 a^3 b^2 \)  
c) \( 8c_3 a^4 b^3 \)  
d) \( 8c_2 a^2 b^3 \)

63. The \( r+1 \)th term in the expansion of \( (x+y)^n \) is

a) \( n_{c_{r+1}} x^{n-r} y^r \)  
b) \( n_{c_r} x^{n-r} y^r \)  
c) \( n_{c_r} x^{n-r} y^n \)  
d) \( n_{c_{r+1}} x^{n-r} y^p \)

64. If 5, 2, -1, ..... are in A.P. then -22 is

a) 8th term  
b) 11th term  
c) 10th term  
d) 12th term

65. If \( n_{c_{13}} = n_{c_7} \) then \( n = \)

a) 6  
b) 8  
c) 13  
d) 20

66. The nth term of the series 1.3+ 3.5+5.7+...... is

a) \( n(n+2) \)  
b) \( n(n+5) \)  
c) \( (2n-1)(2n+1) \)  
d) \( 2n(2n-1) \)

67. The relation between AM, GM and HM is

a) \( A^2 = GH \)  
b) \( G^2 = AH \)  
c) \( H^2 = AG \)  
d) \( AG = H \)

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68. Median of 5, 10, 3, 7, 2, 9, 6, 2, 11 is
   a) 6       b) 5       c) 7       d) 11

69. Tan (90+θ) = ___________
   a) tan θ    b) cot θ   c) -Cotθ    d) -tanθ

70. If tan θ = \frac{7}{24} then the value of sin θ is
   a) \frac{7}{25}    b) \frac{6}{25}   c) \frac{7}{23}   d) \frac{1}{24}

71. If x^2 = 0.2 then the value of \frac{3}{x}^2 is
   a) 0.08      b) 0.008    c) 0.8     d) 8

72. If two circles of radii 3 cms and 5 cms touch each other internally then the distance between their centres is
   a) 2        b) 8        c) 34      d) 16

73. The y-intercept of the line 2x-7y=12 is
   a) \frac{12}{7}  b) \frac{-12}{7}  c) \frac{2}{7}    d) \frac{-2}{7}

74. Equation of the line with slope 2 and y intercept 4 is
   a) y=2x-4     b) y=2x+4    c) y=-2x+4   d) y=-2x-4

75. The coordinates of a point on y-axis is
   a) (2,1)     b) (1,2)     c) (-2,1)    d) (0,4)

76. The remainder when f(x) is divided by ax+b is
   a) 0          b) f\left(\frac{a}{b}\right)  c) f\left(\frac{b}{a}\right)  d) f\left(\frac{-b}{a}\right)
77. If \( f = \{(1,2), (2,3), (3,4)\} \) \( g = \{(2,5), (3,6), (4,7)\} \), then \((gof)\) is

a) \(\{(1,5), (2,6), (3,7)\}\)

b) \(\{(1,5), (2,7), (3,7)\}\)

c) \(\{(1,5), (2,7), (3,6)\}\)

d) \(\phi\)

78. If \( f(x) = x^2 - x + 6 \) then the value of \( f(4) \) is

a) 0

b) 18

c) 6

d) 2

79. If \((x+y, 1) = (3, y-x)\) then \(x = 1\)

a) 1

b) -1

c) 2

d) -2

80. If \( A; B, C \) and any three sets then \( A \cap (B \cup C) = \)

a) \((A \cap B) \cap (A \cap C)\)

b) \((A \cap B) \cup (A \cap C)\)

c) \(A \cap (B \cap C)\)

d) \(A \cap (B \cap C)\)

81. In a circle the angle between a tangent and radius is

a) 60°

b) 90°

c) 120°

d) 45°

82. If \( \triangle ABC \sim \triangle PQR \) then \( \frac{AB}{AC} = \)

a) \(\frac{PR}{PQ}\)

b) \(\frac{PR}{QP}\)

c) \(\frac{PQ}{PR}\)

d) \(\frac{PR}{PQ}\)

83. The number of circles through three collinear points in a plane is

a) 1

b) 2

c) 3

d) 0

84. If \( \begin{bmatrix} x & 2 \\ 2 & 4 \end{bmatrix} \) is a singular matrix the value of \(x\) is

a) 4

b) -4

c) -1

d) 1

329
85. If \( A = \begin{bmatrix} 2 & 1 \\ 3 & 4 \end{bmatrix}, \ B = \begin{bmatrix} a \\ b \end{bmatrix} \), then \( AB = \) 

a) \([1,3,4] \)   b) \([1] \)   c) \([1 \ 3] \)   d) \([2a + b] \) 

86. "Every student has to pass in this examination. The connective used in this sentence is" 

a) \( \exists \)   b) \( \lor \)   c) \( \forall \)   d) \( \theta \) 

87. \( \sim [p \land \sim q] = \) 

a) \( \sim p \land \sim q \)   b) \( \sim p \sim q \)   c) \( \sim p \lor q \)   d) \( \sim p \lor q \) 

88. If \( \begin{bmatrix} 2 & -4 \\ d & 5 \end{bmatrix} = 14 \) then the value of \( d \) is 

a) -1   b) 1   c) 2   d) 4 

89. If \( f(x) = 3x + 2 \) then \( f \) is a 

a) Many one function   b) Identity function   c) Constant function   d) None 

90. If \( y = f(x) = 2x + 5 \) then inverse of \( f \) is 

a) \( \frac{x - 5}{2} \)   b) \( \frac{2x + 5}{2} \)   c) \( \frac{5 - x}{2} \)   d) \( \frac{5 + x}{2} \) 

91. If \( 1^3 + 2^3 + 3^3 + \ldots + m^3 = 3025 \) then \( m = \) 

a) 15   b) 24   c) 10   d) 11 

92. If the ratio of the bases of two triangles is \( a:b \) and areas are equal then the ratio of their altitudes is 

a) \( a^2:b^2 \)   b) \( b:a \)   c) \( \sqrt{a} : \sqrt{b} \)   d) \( \sqrt{b} : \sqrt{a} \)
93. If \( \sqrt[3]{a} + \sqrt[3]{b} + \sqrt[3]{c} = 0 \) then \( a+b+c = \) ( )
   a) 27abc   b) 3(abc)^{1/3}   c)(abc)^{1/3}   d) 27(abc)^{1/3}

94. If a constant is added or subtracted from every term of an A.P. then the resulting progression is ( )
   a) A.P.   b) G.P   c) H.P   d) None

95. The method of writing the commands of the computer in a flow chart to solve the problem is ________ ( )
   a) Algorithm   b) Flow chart   c) Box   d) None

96. If \( \begin{bmatrix} 4 & 3 \\ 2 & 16 \end{bmatrix} = \begin{bmatrix} 4 & 3 \\ 2 & 2^x \end{bmatrix} \) then \( x = \) ( )
   a) 1   b) 4   c) 3   d) 2

97. The AM of \( a+2 \), \( a \), and \( a-2 \) is ( )
   a) \( a+2 \)   b) \( a \)   c) \( a-2 \)   d) 3a

98. The equation obtained by eliminating \( \theta \) from \( x = a \sin \theta \) and \( y = a \cos \theta \) is ( )
   a) \( \frac{x}{a} + \frac{y}{b} = 1 \)   b) \( \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1 \)   c) \( \frac{x^2}{a^2} + \frac{y^2}{a^2} = 1 \)   d) None

99. The slope of a line passing through \( (4,-7) \) \( (1,-5) \) is ( )
   a) \(-\frac{1}{2}\)   b) \(-\frac{2}{3}\)   c) \(-\frac{3}{2}\)   d) -2

100. If \( A \) \( B \) are two sets then \( (A-B) \cup (B-A) \) is ( )
    a) Difference of \( A,B \)   b) Sum of \( A,B \)
    c) Symmetric difference of \( A,B \)   d) None
101. If the $n^{th}$ term of an A.P. is $2n+5$, its $2^{nd}$ term is 
   a) 7    b) 9    c) 5    d) 2

102. If the first term of a G.P is $a$ and common ratio, $r$, then the $n^{th}$ term is 
   a) $ar^{n}$    b) $ar^{2n}$    c) $a^{2n-1}$    d) $ar^{n-1}$

103. Mean of 11 score is 17.5 one of it is 15. Mean of the remaining is 
   a) 16.5    b) 17.75    c) 18    d) 18.5

104. The value of $\sec^2 60^\circ - \tan^2 60^\circ$ is 
   a) 1    b) 2    c) 3    d) 4

105. The value of $\sin 45^\circ \cos 15^\circ + \cos 45^\circ \sin 15^\circ$ is 
   a) 1    b) $\frac{1}{2}$    c) $\frac{1}{\sqrt{2}}$    d) $\frac{\sqrt{3}}{2}$

106. The $n^{th}$ term of the series 8, 16, 32, 64 ......... is 
   a) $2^{n-1}$    b) $2^{n+3}$    c) $2^{n+2}$    d) $2^{n+4}$

107. The sum of the infinite G.P $\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \frac{1}{32} \ldots \ldots \ldots$ is 
   a) 2    b) 3    c) 4    d) 1

108. \[ \lim_{x \to a} \frac{x^n - a^n}{x - a} = \quad (\quad) \] 
   a) $a$, $a^{n-1}$    b) $n.a^{n-1}$    c) $n.a^{n-1}$    d) $a^{n-1}$

109. If $A = \{1,2\}$, $B = \{3,4\}$ then $n(A \times B) =$ 
   a) 2    b) 3    c) 4    d) 5

110. If area of $\Delta ABC = 18$ Cm$^2$ and D, E, F, are the mid points of BC, CA, AB respectively then area of $\Delta DEF$ is 
   a) 18 Cm$^2$    b) 9 Cm$^2$    c) 36 Cm$^2$    d) 4.5 Cm$^2$
111. If two circles of radii 5 Cms and 3 Cms touch externally, then the
distance between their centres in Cms is
   a) 5   b) 3   c) 4   d) 8

112. If \( A = \{5,7,8\} \), \( B = \{7,8,9\} \) then \( A-B \) is
   a) \{5,9\}   b) \{5,8\}   c) \{5,7\}   d) \{5\}

113. If
\[
\begin{pmatrix}
1 & 3 \\
1 & 0
\end{pmatrix}
\begin{pmatrix}
2 \\
1
\end{pmatrix}
= \begin{pmatrix} P \\ 2 \end{pmatrix}
\]
then the value of \( P \) is
   a) 5   b) -1   c) 0   d) 2

114. From the functional figure its zero value is (   )
   a) 0   b) 3   c) 2   d) -2

115. An example of ordered pair is
   a) \{(1,2)\}   b) \{(1,2)\}   c) \{(1,2)\}   d) \{(1,2)\}

116. The value of \( 5c_3 + 5c_1 \) is
   a) 10   b) 12   c) 20   d) 16

117. If \( 2x^2 + kx+2 = 0 \) has equal roots then the value of \( K \) is
   a) 4   b) 2   c) \( \pm 4 \)   d) \( \pm 2 \)

118. If \( a = -3 \), \( d = -2 \) then the 20\(^{th} \) term of the A.P. is
   a) 40   b) 41   c) -41   d) -40

119. If \( a, b, c \) are in G.P then the geometric mean \( b = \)
   a) \( \frac{a+c}{2} \)   b) \( \frac{a-c}{2} \)   c) \( \sqrt{ac} \)   d) \( ac \)
120. If a straight line makes intercepts 4 and -7 on x and y axes respectively then its equation is
   a) $7x+4y=28$  b) $7x+4y=-28$  c) $-7x+4y=28$  d) $7x-4y=28$

121. If a straight line makes an angle 135° with the positive direction of x-axis then its slope is
   a) -1  b) 1  c) 2  d) -2

122. The remainder when $x^2+x-5$ is divided by $x-2$ is
   a) 1  b) -1  c) 2  d) -2

123. If $f(x) = 2-x$, $g(x) = 3x+2$ then $(fog)(2) =$
   a) 4+2x  b) -4x  c) 2  d) -6

124. If $P = \begin{bmatrix} 1 \\ 0 \\ 0 \\ 3 \end{bmatrix}$, $\phi = \begin{bmatrix} 1 \\ 0 \\ a+1 \end{bmatrix}$ and $p = \phi$ then $a =$
   a) 3  b) 1  c) 2  d) -2

125. If $A = \begin{bmatrix} 1 & 0 \\ 2 & 3 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 2 \\ 0 & 4 \end{bmatrix}$ then $AB =$
   a) $\begin{bmatrix} 0 & 2 \\ 0 & 16 \end{bmatrix}$  b) $\begin{bmatrix} 0 & 0 \\ 2 & 16 \end{bmatrix}$  c) $\begin{bmatrix} 0 & 2 \\ 16 & 0 \end{bmatrix}$  d) Can not be found

126. To write a flow chart the pictorial representation used in the algorithm is
   a) Sector  b) Rectangle  c) Pentagon  d) Decagon

127. If $\begin{bmatrix} x & y \\ p & q \end{bmatrix} = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ then $p+q =$
   a) 3  b) 7  c) 4  d) 1
128. The relation between mean, median and mode is ( )
   a) Mean = 2 median -2 mode  b) Median = 3 mean - 2 mode
   c) Mode = 3 mean - 2 mode  d) Mode = 3 median - 2 mean

129. The diagrams in Histogram is ( )
   a) Sectors  b) Rectangles  c) Triangles  d) Squares

130. If Sin 30° = Cos A, then the value of A is ( )
   a) 30°  b) 60°  c) 45°  d) 90°

131. If Sin θ = ½ then Cot θ = ( )
   a) ½  b) -½  c) 1  d) √3

132. The value of is \( \frac{a + b + 2ab}{\sqrt{a} + \sqrt{b}} \) is ( )
   a) 1  b) \( (\sqrt{a} + \sqrt{b})^2 \)  c) \( \sqrt{a} + \sqrt{b} \)  d) \( \sqrt{a} - \sqrt{b} \)

133. The value of \((64)^{2/3}\) is ( )
   a) 8  b) 4  c) 12  d) 16

134. If the length of a tangent drawn from an external point C, to the circle is 6 Cms, the length of the second tangent is ( )
   a) 1  b) 2  c) 3  d) 6

135. If 10, 8, 6 are the sides of a triangle then the triangle is ( )
   a) Obtuse angled triangle  b) Right angled triangle
   c) Acute angled triangle  d) None

136. The Hormonic mean of \(x, y\) is ( )
   a) \( \frac{x + y}{2} \)  b) \( \frac{2xy}{x - y} \)  c) \( \frac{2xy}{x + y} \)  d) \( \sqrt{xy} \)

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137. \(200 - \sum_{1}^{20} n = \) ( )
   a) 10  b) 0  c) -1  d) -10

138. \((x^{-q}) \cdot (x^{r-t}) \cdot (x^{-p})^3 = \) ( )
   a) 0  b) 1  c) -1  d) p

139. If \(2^{x+3} = 4^{x-5}\) then \(x = \) ( )
   a) 10  b) 11  c) 12  d) 13

140. If \(x < 0, y > 0\) then the quadrant in which the point \((x, y)\) lies ( )
   a) I  b) II  c) III  d) IV

141. If \(10_c_{10} = 10_c_{n}\) then \(n = \) ( )
   a) 1  b) 2  c) 3  d) 4

142. The sum of the roots of the equation \(2x^2-9x+8 = 0\) is
   a) \(-\frac{9}{2}\)  b) 8  c) 4  d) \(\frac{9}{2}\)

143. The value of \(\frac{\tan 60^\circ - \tan 15^\circ}{1 + \tan 60^\circ \tan 15^\circ}\) is
   a) 1  b) 2  c) 3  d) 4

144. If \(f: A \rightarrow B, g : B \rightarrow C\), then the function \((gof)\) is
   a) \((gof) : A \rightarrow C\)  b) \((gof) : C \rightarrow A\)  c) \((gof) : A \rightarrow B\)  d) \((gof) : B \rightarrow A\)

145. Equation of the straight line parallel to \(2x-3y+12 = 0\) is
   a) \(2x+3y+5=0\)  b) \(4x-6y+20=0\)  c) \(4x+9y+12=0\)  d) \(x-3y+6=0\)
146. The line $x=3$, intersects $x$-axis at the point ________
   a) (0,3)  b) (3,0)  c) (0,-3)  d) (-3,0)

147. If the mode of 2,3,3,2,3,1 is P then the value of P is
   a) 1  b) 2  c) 3  d) Can not be found

148. If $\sin \alpha = \frac{x}{y}$, $\cos \alpha = \frac{a}{b}$ then the value of $\cot \alpha$ is
   a) $\frac{x}{a}$  b) $\frac{y}{b}$  c) $\frac{bx}{ay}$  d) $\frac{ay}{bx}$

149. If $f : N \rightarrow R / f(x) = \frac{10}{x-1}, x \neq 1$ then the domain of $f$ is
   a) $N$  b) $N+1$  c) $N-\{1\}$  d) $N-10$

150. The Harmonic mean of 3,5 is
   a) $\frac{15}{4}$  b) $\frac{13}{4}$  c) $\frac{17}{4}$  d) $\frac{11}{4}$
APPENDIX – C

Answer sheet cum scoring key of the achievement test in mathematics X class used for pilot study

Name of the Student: ____________________________

Town: ____________________________

Name of the School: ____________________________

Village / ____________

Note: Choose the correct choice from the given alternatives and write its letter in the brackets.

2. [c] 22. [b] 42. [c] 62. [b]
3. [c] 23. [d] 43. [c] 63. [b]
4. [c] 24. [d] 44. [b] 64. [c]
5. [c] 25. [a] 45. [a] 65. [d]
7. [d] 27. [a] 47. [c] 67. [b]
10. [c] 30. [d] 50. [c] 70. [a]
11. [a] 31. [b] 51. [c] 71. [b]
12. [a] 32. [a] 52. [a] 72. [a]
13. [b] 33. [c] 53. [d] 73. [b]
14. [d] 34. [b] 54. [c] 74. [b]
15. [a] 35. [c] 55. [c] 75. [d]
17. [d] 37. [c] 57. [a] 77. [a]
18. [a] 38. [c] 58. [b] 78. [b]
20. [d] 40. [c] 60 [c] 80. [b]
81. [b] 101. [b] 121. [a] 141. [b]
82. [c] 102. [d] 122. [a] 142. [d]
83. [d] 103. [b] 123. [d] 143. [a]
84. [d] 104. [a] 124. [c] 144. [a]
85. [d] 105. [d] 125. [a] 145. [b]
86. [c] 106. [c] 126. [b] 146. [a]
89. [d] 109. [c] 129. [b] 149. [c]
90. [a] 110. [d] 130. [b] 150. [a]
91. [c] 111. [d] 131. [d]
92. [b] 112. [d] 132. [c]
93. [b] 113. [a] 133. [d]
94. [a] 114. [d] 134. [d]
95. [a] 115. [b] 135. [b]
96. [b] 116. [a] 136. [c]
97. [b] 117. [c] 137. [d]
98. [b] 118. [c] 138. [b]
99. [b] 119. [c] 139. [d]
100. [c] 120. [d] 140 [b]
APPENDIX - D

Achievement Test Mathematics - Xth Class

Name of the Student: ____________________ Roll No. __________ Date: __________

Name of the School: ____________________ Marks: __________

1) \( \left( \frac{x+y}{a+b} \right)^6 \) महत्तम युक्तियों सारणी रूपांतर
   a) 30      b) 7     c) 9     d) 6

2) \((a+b)^3\) महत्तम युक्तियों सारणी रूपांतर
   a) 30      b) 31     c) 32     d) 36

3) \(y = x^2\) [नर्माण प्रश्नावली मध्ये प्रश्न प्रश्नावली मध्ये] महत्तम अनुसार
   a) \(x-3\)    b) \(y-3\)    c) \(z-3\)     d) \(n-3\)

4) \((x+y)^n\) महत्तम युक्तियों सारणी रूपांतर विषयांमध्ये
   a) \(T_{-r}\)    b) \(T_{r}\)     c) \(T_{r+1}\)     d) \(T\)

5) \(\text{रेखा 100 धेरे रूपांतर ज्यामितीय}
   a) 5000      b) 5020     c) 5030     d) 5050

6) 6\(_{c2}\) पूर्ण
   a) 12      b) 15     c) 16     d) 20

7) \(\left( \frac{x+y}{a+b} \right)^6\) महत्तम युक्तियों सारणी रूपांतर विषयांमध्ये
   a) 4      b) 3     c) 3, 4     d) 5

8) \(x^2 - x - 12 = 0\) दूरीका मापणीय
   a) 4, 3      b) 4, -3     c) (-4, -3)     d) (-4, -2)

9) \(x^2 - 4x - 5 = 0\) दूरीका मापणीय
   a) 4      b) 3     c) -3     d) -4

10) \(\sec \theta - \tan \theta = 2\) आयतन 

11) भुजा की रुपरेखा मध्ये प्रश्न प्रश्नावली मध्ये युक्तियों सारणी रूपांतर
   a) \(\tan \theta\)    b) \(\sin \theta\)     c) \(\sec \theta\)     d) \(\csc \theta\)

12) \(\sin^2 30^\circ + \cos^2 30^\circ\)
   a) 0      b) 1     c) -1     d) \(\frac{1}{2}\)

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13) \( \tan \theta \) where \( \theta \) is an acute angle
   a) 0°       b) 30°     c) 45°     d) 90°

14) \( f(x) = \frac{x^2 - 4}{x - 2} \), find \( \lim_{x \to 2} f(x) \)
   a) 2       b) 3       c) -2      d) 4

15) \( 4x - 3y = k \) and \( 5x + 2y = 10 \)
    a) 0       b) 1       c) -1      d) 2

16) 2, 5, 6, 7, 2, 5, 2 or 2, 5, 7, 2, 5, 2
    a) 5       b) 7       c) 2       d) 6

17) \[ \begin{bmatrix} 3 & -1 \\ 2 & 2 \end{bmatrix} \] matrix form, find its determinant
    a) 7       b) 5       c) 4       d) 6

18) \( x - 2y + 5 = 0 \) choose the correct answer for \( \theta \)
    a) 2       b) \( \frac{1}{2} \)   c) -2      d) \( -\frac{1}{2} \)

19) \( \Delta ABC \quad BC^2 + AB^2 = AC^2 \) check the correct answer for \( \angle C \)
    a) A       b) B       c) C       d) \( \text{None} \)

20) \( y = mx + c \) y-intercept, choose the correct answer
    a) (0, 0)   b) (0, -c)   c) (c, 0)   d) (0, c)

21) \( \sin \theta = \cos \theta \), where \( 0^\circ < \theta < 90^\circ \)
    a) 60°      b) 45°     c) 135°    d) 30°

22) \[ \begin{bmatrix} 3 & 2 \\ 1 & 2 \end{bmatrix} \begin{bmatrix} x \\ 2 \end{bmatrix} = \begin{bmatrix} 5 \\ 0 \end{bmatrix} \]
    a) 4       b) -4      c) 5       d) -5

23) 20 - 30 30 - 40
    a) 9       b) 11      c) 10      d) 12

24) \( x \times 1 < 2 \) choose the correct answer
    a) \( x > 2 \) or \( x < 2 \) b) -2 < \( x < 2 \)  c) \( x = 2 \) d) \( x = -2 \)

25) 0 < 3 < \infty 1 < \infty  \infty < \infty
    a) 2       b) 3       c) 1       d) 0
26) \((-4, 4), (-2, 2), (6, 12)\) तीन पॉइंट्स की त्रिमाणकीय त्रिभुज के तीन शोधों को चुनिएः
   a) (0, 2)  b) (0, 3)  c) (0, 1)  d) (0, 6) ( )

27) \((3, 5)\) बिंदु को त्रिमाणकीय त्रिभुज को क्षेत्रफल कसाईः ( )
   a) \(7x - 3y = 16\)  b) \(7x + 3y = 36\)  c) \(7x - 3y = 36\)  d) \(7x + 3y = 20\)

28) \(f(x)\) एवं \((x+1)\) नक्शा कितनों जोड़ी जाएः \(f(-1)\) रेखा की दूरी ( )
   a) 1  b) -1  c) 0  d) 2

29) \(यदि\) बेलीकेरानी जैविक हैं, तो जैविक हैं नहीं ( )
   a) 1  b) 2  c) 3  d) 0

30) \(y = 2x + 1, y = 3x - 2\) जोड़ेः \(x\) अक्ष को ( )
   a) (3, 7)  b) (5, 13)  c) (4, 10)  d) (2, 5)

31) \( \begin{align*}
             &  \frac{1}{3} \\
           & \frac{2}{3}
\end{align*} \)
   a) \(त्रिकोण\)  b) \(त्रिकोण\)  c) \(त्रिकोण\)  d) \(त्रिकोण\)

32) \(y = f(x) = 5x\) स्वरूपी फ़्लेक्सर \(f(x)\) रेखा ( )
   a) \(\frac{1}{5}\)  b) \(\frac{1}{x}\)  c) \(\frac{x}{5}\)  d) \(\frac{5}{x}\)

33) \(A, B\) एवं \(A \cap B\) हैं तो \(n(A) = 12\) तथा \(n(B) = 20\) तत्कालीन \(n(A) = 30\) ( )
   a) 30  b) 8  c) -8  d) -32

34) \(6, 1\) नक्शा फ़्लेक्सर \(3x - 2y\) रेखा ( )
   a) 14  b) 4  c) 16  d) -16

35) \(A, B\) एवं \(A \cup B\) हैं \(A \cap B = \phi, n(A \cup B) = 20, n(A) = 12\) तत्कालीन \(n(B) = \) ( )
   a) 6  b) 4  c) 8  d) 5

36) \(यदि\) \(AP = a, d = 3\) समांतर भागी ( )
   a) 17  b) 16  c) 15  d) 14

37) \(\lim_{x \to 3} \sqrt[6]{x + 15} = \) ( )
   a) \(\sqrt[4]{4}\)  b) \(\sqrt[5]{5}\)  c) \(\sqrt[7]{7}\)  d) \(\sqrt[6]{6}\)

38) \(1 + 4 + 9 + 16 + \cdots + n^2 = \) ( )
   a) \(\frac{n(n-1)}{2}\)  b) \(\frac{n(n+1)}{2}\)  c) \(\frac{n(n+1)(2n+1)}{6}\)  d) \(विद्यमान\)

39) \(9x^2 - 6x + 1 = 0\) के समाधानहेतु ( )
   a) \(त्रिकोण\)  b) \(त्रिकोण\)
40) \[ x + y = 4 \quad x - y = 20 \text{ (Check Options)} \]
a) (3, 1)  
b) (2, 1)  
c) (4, 1)  
d) (6, 1)

41) \[ A = \begin{bmatrix} 1 & 2 \\ 1 & 3 \end{bmatrix} \text{ Option} 5A \]
a) \[ \begin{bmatrix} 5 & 2 \\ 5 & 2 \end{bmatrix} \]  
b) \[ \begin{bmatrix} 5 & 2 \\ 5 & 10 \end{bmatrix} \]  
c) \[ \begin{bmatrix} 5 & 10 \\ 5 & 15 \end{bmatrix} \]  
d) Not Possible

42) Let the terms of the series be \( a, b, c, d \) respectively. \( a) \) \( a(n+2) \)  
b) \( n(n+5) \)  
c) \( (2n-1)(2n+1) \)  
d) \( 2n(2n-1) \)

43) \((x+y)^n = \text{Option} (r+1)\) \(a\) \( b\) \( c\) \( d\)

44) 5, 2, -1, ......... Calculate the number \(-22\) is formed

45) \[ 1.3 + 3.5 + 5.7 + \ldots \ldots \ldots \text{Option} \ n \text{ is formed} \]
a) \( n(n+2) \)  
b) \( n(n+5) \)  
c) \( (2n-1)(2n+1) \)  
d) \( 2n(2n-1) \)

46) AM, GM, H.M \( \text{Option} \) \( a\) \( b\) \( c\) \( d\)

47) 5, 10, 3, 7, 2, 9, 6, 2, 11 \( \text{Option} \) \( 5 \) or \( 10 \) \( 2 \) or \( 11 \)

48) \[ \tan(90 + \theta) = \]
a) \( \tan \theta \)  
b) \( \cot \theta \)  
c) \( -\cot \theta \)  
d) \( -\tan \theta \)

49) \( x\frac{1}{2} = 0.2 \text{ Option} x^{12} \text{ is formed} \)
a) 0.08  
b) 0.008  
c) 0.8  
d) 8

50) \( 3^\text{rd} \text{ Option} 3^\text{rd} 5^\text{th} \text{ Option} \text{ Option} \text{ Option} \text{ Option} \)
a) 2  
b) 8  
c) 34  
d) 16

51) \[ 2x - 7y = 12 \text{ Option} y - \text{Option} \]
a) \( \frac{12}{7} \)  
b) \( -\frac{12}{7} \)  
c) \( \frac{2}{7} \)  
d) \( -\frac{2}{7} \)

52) \( y \text{ Option} y \text{ Option} \)
53) \( f(x) = ax + b \)  
- a) 0 
- b) \( f\left( \frac{a}{b} \right) \) 
- c) \( f\left( \frac{b}{a} \right) \) 
- d) \( f\left( \frac{-b}{a} \right) \) 

54) \( f = \{(1,2), (2,3), (3,4)\}, g = \{(2,5), (3,6), (4,7)\} \)  
- a) \( \{(1,5), (2,6), (3,7)\} \) 
- b) \( \{(1,5), (2,7), (3,7)\} \) 
- c) \( \{(1,5), (2,7), (3,6)\} \) 
- d) \( \varphi \)

55) \( f(x) = x^2 - x + 6 \)  
- a) 0 
- b) 18 
- c) 6 
- d) 2

56) \( (x+y, 1) = (3, y-x) \)  
- a) 1 
- b) -1 
- c) 2 
- d) -2

57) \( A, B, C \) \( A \cap (B \cup C) = \)  
- a) \( (A \cap B) \cap (A \cap C) \) 
- b) \( (A \cap B) \cup (A \cap C) \) 
- c) \( (A \cap B) \cap (A \cup C) \) 
- d) None

58) \( A \) \( B \) \( C \) \( A \cup B = \)  
- a) \( 60^\circ \) 
- b) \( 90^\circ \) 
- c) \( 120^\circ \) 
- d) \( 150^\circ \)

59) \( \Delta ABC \equiv \Delta PQR \)  
- a) \( PR: PQ \) 
- b) \( PR: QR \) 
- c) \( PQ: PR \) 
- d) \( PR: PQ \)

60) \( \Delta ABC \equiv \Delta DEF \)  
- a) 1 
- b) 2 
- c) 3 
- d) 0

61) \[ \begin{bmatrix} x & 2 \\ 2 & 4 \end{bmatrix} \]  
- a) 4 
- b) -4 
- c) -1 
- d) 1

62) \( A = \begin{bmatrix} 2 & 1 \\ 3 & 4 \end{bmatrix}, B = \begin{bmatrix} a \\ b \end{bmatrix} \)  
- a) \[\begin{bmatrix} 1 \\ 3 \end{bmatrix}\] 
- b) \[\begin{bmatrix} 1 \\ 4 \end{bmatrix}\] 
- c) \[\begin{bmatrix} 2a + b \\ 3a + 4b \end{bmatrix}\]

63) \(~p \land q\)  
- a) \(~p \land q\) 
- b) ~pvq 
- c) ~p \land q 
- d) ~p \lor q

64) \(~p \land q\)  
- a) \(~p \land q\) 
- b) ~pvq 
- c) ~p \land q 
- d) ~p \lor q
65) \[
\begin{bmatrix}
2 - 4 \\
1
\end{bmatrix} = 14 \text{ then } d \text{ is equal to } \ldots...
\]
(a) -1  
(b) 1  
(c) 2  
(d) 4

66) \(y = f(x) = 2x + 5\) \(\text{ options: a) } x - 5 \text{ )} \text{ b) } 2x + 5 \text{ )} \text{ c) } 5 - x \text{ )} \text{ d) } 5 + x \text{ )}\)
(a) \(\frac{x - 5}{2}\)  
(b) \(\frac{2x + 5}{2}\)  
(c) \(\frac{5 - x}{2}\)  
(d) \(\frac{5 + x}{2}\)

67) \(\begin{bmatrix}
4 & 3 \\
2 & 1
\end{bmatrix} = \begin{bmatrix}
4 & 3 \\
2 & x
\end{bmatrix}\) \(\text{ then } x = \ldots...
\]
(a) 1  
(b) 4  
(c) 3  
(d) 2

68) \(a + 2, a, \frac{a}{2}, a - 2\) \(\text{ a } AM\)
(a) \(a + 2\)  
(b) \(a\)  
(c) \(a - 2\)  
(d) \(3a\)

69) \((4, -7), (1, -5)\) \(\text{ options: a) } x - 1 \text{ )} \text{ b) } -\frac{x}{2} \text{ )} \text{ c) } -\frac{3}{2} \text{ )} \text{ d) } -2 \text{ )}\)
(a) \(-\frac{1}{2}\)  
(b) \(-\frac{2}{3}\)  
(c) \(-\frac{3}{2}\)  
(d) \(-2\)

70) \(\text{ the area of the rectangle } 2n + 5 \text{ then } 2n \text{ then } \text{ the area}\)
(a) 7  
(b) 9  
(c) 5  
(d) 2

71) \(\text{ the area of the rectangle } 2n + 5 \text{ then } 2n \text{ then } \text{ the area}\)
(a) \(ar^n\)  
(b) \(ar^{n-1}\)  
(c) \(a^{n-1}\)  
(d) \(ar^{n-1}\)

72) \(\text{ Sc}^{60^\circ} - \tan^{60^\circ} \text{ equals } \ldots...
\]
(a) 1  
(b) 2  
(c) 3  
(d) 4

73) \(A = \{1, 2\}, B = \{3, 4\}\) \(\text{ then } n(A \times B) = \ldots...
\]
(a) 2  
(b) 3  
(c) 4  
(d) 5

74) \(A = \{5, 7, 8\}, B = \{7, 8, 9\}\) \(\text{ then } A - B\)
(a) \(\{5, 8\}\)  
(b) \(\{5, 8\}\)  
(c) \(\{5, 7\}\)  
(d) \(\{5\}\)

75) \(\begin{bmatrix}
1 & 3 \\
1 & 0
\end{bmatrix} \begin{bmatrix}
2 \\
1
\end{bmatrix} = \begin{bmatrix}
p \\
2
\end{bmatrix}\) \(\text{ then } p \text{ equals } \ldots...
\]
(a) 5  
(b) -1  
(c) 0  
(d) 2

76) \(S_{C_1} + S_{C_2}\) \(\text{ equals } \ldots...
\]
(a) 10  
(b) 12  
(c) 20  
(d) 16

77) \(\text{ the area of the triangle } a = -3, d = -2\) \(\text{ then } 20\text{ then } \text{ the area}\)
(a) 40  
(b) 41  
(c) -41  
(d) -40

78) \(a, b, c\) \(\text{ then } a \text{ then } b\) \(\text{ then } b\) \(\text{ then } b\) \(\text{ equals } \ldots...
\]

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79) \( x^2 + x - 5 \) दो ऐसे कॉलम का समावेश है?
   a) 1  b) -1  c) 2  d) -2

80) \( f(x) = 2 - x \), \( g(x) = 3x + 2 \) अतः \( (fog)(2) = \)
   a) 4+2x  b) -4x  c) 2  d) -6

81) \( P = \begin{bmatrix} 1 & 0 \\ 0 & 3 \end{bmatrix} \) \& \( Q = \begin{bmatrix} 1 & 0 \\ 0 & a+1 \end{bmatrix} \)
   तब \( P = Q \) \& \( a = \)
   a) 3  b) 1  c) 2  d) -2

82) \( A = \begin{bmatrix} 1 & 0 \\ 2 & 3 \end{bmatrix} \), \( B = \begin{bmatrix} 0 & 2 \\ 0 & 4 \end{bmatrix} \)
   तब \( AB = \)
   a) \begin{bmatrix} 0 & 2 \\ 0 & 16 \end{bmatrix}  b) \begin{bmatrix} 0 & 0 \\ 2 & 16 \end{bmatrix}  c) \begin{bmatrix} 0 & 2 \\ 16 & 0 \end{bmatrix}  d) \text{संयुक्त मैट्रिक्स}

83) \[ \begin{bmatrix} x & y \\ p & q \end{bmatrix} = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \]
   तब \( p + q = \)
   a) 3  b) 7  c) 4  d) 1

84) \( \text{फलन} = \text{लघु रूपवर्तमान} \), \( \text{वर्गशैली} = \text{लघु रूपवर्तमान} \)
   अर्थशास्त्रीय \( \) लघु रूपवर्तमान
   a) \( = 3 \) लघु रूपवर्तमान - 2 वर्गशैली  b) \( = 3 \) लघु रूपवर्तमान
   c) \( = 3 \) लघु रूपवर्तमान - 2 वर्गशैली  d) \( = 3 \) लघु रूपवर्तमान - 2 गति

85) \( \text{विषय} = \text{उत्तर} \)
   a) \( = \) उत्तर  b) \( = \) उत्तर  c) \( = \) उत्तर  d) \( = \) उत्तर

86) \( \text{सिन} 30^\circ = \text{कोस} A \)
   तब \( A = \)
   a) 30°  b) 60°  c) 45°  d) 90°

87) \( \text{सिन} \theta = \frac{1}{2} \)
   तब \( \cot \theta = \)
   a) \( \frac{1}{2} \)  b) -\( \frac{1}{2} \)  c) 1  d) \( \sqrt{3} \)

88) \( (64)^{\frac{2}{3}} \) दिने मित्र \( = \)
   a) 8  b) 4  c) 12  d) 16

89) \( 10, 8, 6 \) दो ऐसे कॉलम का समावेश है?
   a) \( = \) उत्तर  b) \( = \) उत्तर  c) \( = \) उत्तर  d) \( = \) उत्तर

90) \( \text{x, y, z} \) तीनों ने \( \) कॉलम का समावेश है?
   a) \( \frac{x+y}{2} \)  b) \( \frac{2xy}{x-y} \)  c) \( \frac{2xy}{x+y} \)  d) \( \sqrt{xy} \)
91) \((x^a y^b) (x^c y^d) = \ldots\)  
\[a) 0 \quad b) 1 \quad c) -1 \quad d) p\]

92) \(2^{x^a} = 4^{x^b}\)  
\[a) 10 \quad b) 11 \quad c) 12 \quad d) 13\]

93) \(x < 0, y > 0\)  
\[a) I \quad b) II \quad c) III \quad d) IV\]

94) \(2x^2 - 9x + 8 = 0\)  
\[a) -\frac{9}{2} \quad b) 8 \quad c) 4 \quad d) \frac{9}{2}\]

95) \(\tan 60^\circ - \tan 15^\circ\) 
\[a) 1 \quad b) 2 \quad c) 3 \quad d) 4\]

96) \(f : A \rightarrow B \quad g : B \rightarrow C\)  
\[a) (gof) : A \rightarrow C \quad b) (gof) : C \rightarrow A \quad c) (gof) : A \rightarrow B \quad d) (gof) : B \rightarrow A\]

97) \(x = 3\)  
\[a) (0,3) \quad b) (3,0) \quad c) (0,-3) \quad d) (-3,0)\]

98) \(2, 3, 3, 2, 3, 1\)  
\[a) 1 \quad b) 2 \quad c) 3 \quad d) 2\]

99) \(\sin \alpha = \frac{x}{y}, \cos \alpha = \frac{a}{b}\)  
\[a) \frac{x}{a} \quad b) \frac{y}{b} \quad c) \frac{bx}{ay} \quad d) \frac{ay}{bx}\]

100) \(3, 5\)  
\[a) \frac{15}{4} \quad b) \frac{13}{4} \quad c) \frac{17}{4} \quad d) \frac{11}{4}\]
APPENDIX - E

ACHIEVEMENT TEST IN MATHEMATICS – X CLASS

Final Study

1. Number of terms in the expansion of \( \left( \frac{x}{y} + \frac{y}{x} \right)^8 \)
   
   a) 8       b) 7       c) 9       d) 6

2. The sum of the coefficients in the expansion of \((a+b)^5\)
   
   a) 30      b) 31      c) 32      d) 36

3. The shape of the curve which satisfy the graph \( y = x^2 \) is
   
   a) x-axis   b) y-axis   c) Parabola   d) Straight line

4. The general term in the expansion of \((x+y)^5\) is denoted by
   
   a) \( T_r \)   b) \( T_{r-1} \)   c) \( T_{r+1} \)   d) \( T \)

5. Sum of the first 100 natural numbers is
   
   a) 5000     b) 5020     c) 5030     d) 5050

6. The value of \( 6c_2 \) is
   
   a) 12       b) 15       c) 16       d) 20

7. The middle term in the expansion of \( \left( \frac{x}{a} + \frac{y}{b} \right)^6 \)
   
   a) 4\textsuperscript{th} term   b) 3\textsuperscript{rd} term   c) 3\textsuperscript{rd} and 4\textsuperscript{th} terms   d) 5\textsuperscript{th} term

8. The roots of \( x^2 - x - 12 = 0 \), are
   
   a) 4, 3       b) 4, -3     c) -4, -3     d) -4, -2

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9. The value of the discriminant of the equation \( x^2 - 4x + 5 = 0 \)
   a) 4  b) 3  c) -3  d) -4

10. If \( \sec \theta - \tan \theta = 2 \) then \( \sec \theta + \tan \theta = \) ______
   a) -2  b) 4  c) \( \frac{1}{2} \)  d) 2

11. The most frequently occurring value in a data is called ______
   a) Mean  b) Median  c) Frequency  d) Mode

12. The value of \( \sin^2 30^\circ + \cos^2 30^\circ \) is
   a) 0  b) 1  c) -1  d) \( \frac{1}{2} \)

13. If the value of \( \tan \theta \) is not defined, then the value of \( \theta \) is
   a) 0\(^\circ\)  b) 30\(^\circ\)  c) 45\(^\circ\)  d) 90\(^\circ\)

14. If \( f(x) = \frac{x^2 - 4}{x - 2} \) then the value of \( \lim_{x \to 2} f(x) \) is
   a) 2  b) 3  c) -2  d) 4

15. If the straight line \( 4x - 3y = K \), passes through the origin, then the value of \( K \) is
   a) 0  b) 1  c) -1  d) 2

16. The Mode of the data 2, 5, 6, 7, 2, 5, 2, is
   a) 5  b) 7  c) 2  d) 6

17. The value of the determinant of the Matrix
   \[
   \begin{bmatrix}
   3 & -1 \\
   1 & 2 \\
   \end{bmatrix}
   \]
is
   a) 7  b) 5  c) 4  d) 6
18. The slope of a line, which is perpendicular to the line $x-2y+5=0$ is
   a) $2$  
   b) $\frac{1}{2}$  
   c) $-2$  
   d) $-\frac{1}{4}$

19. In $\triangle ABC$, if $BC^2+AB^2=AC^2$, then the vertex containing the right angle is
   a) A  
   b) B  
   c) C  
   d) None

20. The point at which the line $y=mx+c$ intersects $Y$-axis is
   a) $(0,0)$  
   b) $(0,-C)$  
   c) $(C,0)$  
   d) $(O,C)$

21. If $\sin \theta = \cos \theta$, $0^\circ < \theta < 90^\circ$, then the value of $\theta$ is
   a) $60^\circ$  
   b) $45^\circ$  
   c) $135^\circ$  
   d) $30^\circ$

22. If $\begin{bmatrix} x & 3 \\ 1 & 2 \end{bmatrix} \begin{bmatrix} 2 \\ -1 \end{bmatrix} = \begin{bmatrix} 5 \\ 0 \end{bmatrix}$ then the value of $x$ is
   a) $4$  
   b) $-4$  
   c) $5$  
   d) $-5$

23. The class interval of $20-30$ is $30-40$
   a) $9$  
   b) $11$  
   c) $10$  
   d) $12$

24. The solution of $|x| < 2$ is
   a) $x > 2$ or $x < -2$  
   b) $-2 < x < 2$  
   c) $x = 2$  
   d) $x = -2$

25. The number of common tangents that can be drawn to two circles which touch internally
   a) $2$  
   b) $3$  
   c) $1$  
   d) $0$

26. The centroid of the triangle with vertices $(-4,4), (-2,2), (6,12)$ is
   a) $(0,2)$  
   b) $(0,3)$  
   c) $(0,1)$  
   d) $(0,6)$
27. Equation of the straight line with slope \( \frac{7}{3} \) and passing through the point \((3,-5)\) is

a) \(7x - 3y = 16\)  b) \(7x + 3y = 36\)  c) \(7x - 3y = 36\)  d) \(7x + 3y = 20\)

28. If \(x + 1\) is factor of \(f(x)\) then the value of \(f(-1)\) is

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

29. The number of tangents that can be drawn to a circle, from an external point is

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

30. The point of intersection of the lines \(y = 2x + 1\), and \(y = 3x - 2\) is

a) \((3,7)\)  b) \((5,13)\)  c) \((4,10)\)  d) \((2,5)\)

31. The function denoted by \(f(x) = x^2 + 2x + 1\) is

a) one-one  b) onto  c) Bijective  d) Constant

32. If \(y = f(x) = 5x\), then the value of \(f^{-1}(x)\) is

a) \(\frac{1}{5}\)  b) \(\frac{1}{x}\)  c) \(\frac{x}{5}\)  d) \(\frac{5}{x}\)

33. If \(A, B\) are two sets, such that \(A \subseteq B\), \(n(A) = 12\) and \(n(B) = 20\), then \(n(B - A) = \)

a) 30  b) 8  c) -8  d) -32

34. The value of \(f = (3x - 2y)\) at \((6,1)\) is

a) 14  b) 18  c) 16  d) -16

35. If \(A, B\) are two sets such that \(A \cap B = \phi\), \(n(A \cup B) = 20\), \(n(A) = 12\) then \(n(B)\)

a) 6  b) 4  c) 8  d) 5
36. In an A.P. if $a=2$, $d=3$ then $t_6 =$
   a) 17  b) 16  c) 15  d) 14

37. $\frac{x + 15}{3}$
   $x \rightarrow 3 \sqrt{3}$
   a) $\sqrt{4}$  b) $\sqrt{5}$  c) $\sqrt{7}$  d) $\sqrt{6}$

38. $1+4+9+16+\ldots+\sqrt{n^2}$
   a) $\frac{n(n-1)}{2}$  b) $\frac{n(n+1)}{2}$
   c) $\frac{n(n-1)(2n+1)}{6}$  d) None

39. The nature of the roots of the equation $9x^2-6x+1 = 0$ is
   a) Complex  b) Real  c) Real and equal  d) None

40. The point of intersection of $x+y=4$ and $x-y=2$ is
   a) (3,1)  b) (2,1)  c) (4,1)  d) (6,1)

41. If $A = \begin{bmatrix} 1 & 2 \\ 1 & 3 \end{bmatrix}$ then $5A =$
   a) $\begin{bmatrix} 5 & 2 \\ 5 & 3 \end{bmatrix}$  b) $\begin{bmatrix} 5 & 2 \\ 5 & 10 \end{bmatrix}$
   c) $\begin{bmatrix} 5 & 10 \\ 5 & 15 \end{bmatrix}$  d) None

42. For a pictorial representation of the Algorithm we use
   a) Flow-diagram  b) Software
   c) Transister  d) None

43. The $r+1$th term in the expansion of $(x+y)^n$ is
   a) $n_{cr}x^{n-r}y^r$  b) $n_{cr}x^{n-r}y^r$
   c) $n_{cr}x^{n-r}y^r$  d) $n_{cr}x^{n-r}y^r$
44. In the A.P. 5,2,1-1,.............-22 is the 
   a) 8\textsuperscript{th} term  b) 11\textsuperscript{th} term  c) 10\textsuperscript{th} term  d) 12\textsuperscript{th} term

45. The nth term of the series 1.3+3.5+5.7+........ Is 
   a) n(n+2)  b) n(n+5)  c) (2n-1) (2n+1)  d) 2n(2n-1)

46. The relation between A.M. G.M. and H.M. is 
   a) A\textsuperscript{2}=GH  b) G\textsuperscript{2}=AH  c) H\textsuperscript{2}=AG  d) AG=H

47. The median of 5,10,3,7,2,9,6,2,11 is 
   a) 6  b) 5  c) 7  d) 11

48. \tan (90+\theta) = 
   a) \tan \theta  b) \cot \theta  c) -\cot \theta  d) -\tan \theta

49. If \( x^{\frac{1}{2}} = 0.2 \) then the value of \( x^{\frac{3}{2}} \) is 
   a) 0.08  b) 0.008  c) 0.8  d) 8

50. If two circles of radius 3 cms, and 5 Cms touch each other internally 
    then the distance between their centres is 
   a) 2  b) 8  c) 34  d) 16

51. The Y- intercept of the line 2x-7y = 12 is 
   a) \( \frac{12}{7} \)  b) \( \frac{-12}{7} \)  c) \( \frac{2}{7} \)  d) \( \frac{-2}{7} \)

52. The coordinates of a point on y-axis is 
   a) (2,1)  b) (1,2)  c) (-2,1)  d) (0,4)

53. If f(x) is divided by ax+b then the remainder is 
   a) 0  b) \( f\left(\frac{a}{b}\right) \)  c) \( f\left(\frac{b}{a}\right) \)  d) \( f\left(\frac{-b}{a}\right) \)
54. If \( f = \{(1,2), (2,3), (3,4)\}, f = \{(2,5), (3,6) (4,7)\} \) then \((gof) = \)
   a) \{(1,5), (2,6), (3,7)\}          b) \{(1,5), (2,7), (3,7)\}
   c) \{(1,5), (2,7), (3,6)\}          d) \phi

55. If \( f(x) = x^2 - x + 6 \) then the value of \( f(4) \) is
   a) 0          b) 18          c) 6          d) 2

56. If \((x+y, 1) = (3, y-x)\) then \(x = \)
   a) 1          b) -1          c) 2          d) -2

57. For any three sets \( A, B, C, A \cap ( \cup C) = \)
   a) \((A \cup B) \cup (A \cap C)\)          b) \((A \cap B) \cup (A \cap C)\)
   c) \((A \cap B) \cap (A \cup C)\)          d) \((A \cap B) \cap (A \cap C)\)

58. In a circle, the angle between a tangent and radius is ________
   a) 60°          b) 90°          c) 120°          d) 45°

59. If \( \triangle ABC = PQR \) then \( \overline{AB} : \overline{AC} = \)
   a) \( \overline{PR} : \overline{PQ} \)          b) \( \overline{PR} : \overline{QP} \)
   c) \( \overline{PQ} : \overline{PR} \)          d) \( \overline{PR} : \overline{PQ} \)

60. The number of circles which can be drawn through three coliner points in a plane is
   a) 1          b) 2          c) 3          d) 0

61. If \( \begin{bmatrix} x & 2 \\ 2 & 4 \end{bmatrix} \) is a singular Matrix, then the value of \( x \) is
   a) 4          b) -4          c) -1          d) 1
62. If \( A = \begin{bmatrix} 2 & 1 \\ 3 & 4 \end{bmatrix} \) \( B = \begin{bmatrix} a \\ b \end{bmatrix} \) then \( AB = \)

\[ \begin{align*}
\text{a) [1,3,4]} & \quad \text{b) } \begin{bmatrix} 1 \\ 3 \end{bmatrix} & \quad \text{c) } \begin{bmatrix} 1 & 3 \\ 2 & 4 \end{bmatrix} & \quad \text{d) } \begin{bmatrix} 2a + b \\ 3a + 4b \end{bmatrix}
\end{align*} \]

63. "Every student has to pass in this test" The symbol to be used in this statement

a) \( \exists \) \quad b) \( V \) \quad c) \( \forall \) \quad d) \( \phi \)

64. \( \neg [p \land \neg q] = \)

a) \( \neg p \land \neg q \) \quad b) \( \neg p \lor \neg q \) \quad c) \( \neg p \land q \) \quad d) \( \neg p \lor q \)

65. If \( \begin{bmatrix} 2 & -4 \\ d & 5 \end{bmatrix} = 14 \) then the value of \( d \) is __________

a) -1 \quad b) 1 \quad c) 2 \quad d) 4

66. If \( y = f(x) = 2x + 5 \) then the inverse of \( f \)

\[ \begin{align*}
\text{a) } \frac{x - 5}{2} & \quad \text{b) } \frac{2x + 5}{2} & \quad \text{c) } \frac{5 - x}{2} & \quad \text{d) } \frac{5 + x}{2}
\end{align*} \]

67. If \( \begin{bmatrix} 4 & 3 \\ 2 & 16 \end{bmatrix} = \begin{bmatrix} 4 & 3 \\ 2 & 2^x \end{bmatrix} \) then \( x = \)

a) 1 \quad b) 4 \quad c) 3 \quad d) 2

68. The A.M. of \( a+2, a \) and \( a-2 \) is

a) \( a+2 \) \quad b) \( a \) \quad c) \( a-2 \) \quad d) \( 3a \)

69. The slope of the straight line passing through the points (4,-7) (1,-5) is

a) \(-\frac{1}{2}\) \quad b) \(-\frac{2}{3}\) \quad c) \(-\frac{3}{2}\) \quad d) \(-2\)

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70. If the nth term of an A.P. is $2n+5$, then its second term is
   a) 7  b) 9  c) 5  d) 2

71. The nth term of a G.P. whose first term is $a$ and common difference is
   a) $ar^n$  b) $ar^{2n}$  c) $a^{2n-1}$  d) $ar^{n-1}$

72. The value of $\sec^2 60^\circ - \tan^2 60^\circ$ is ________
   a) 1  b) 2  c) 3  d) 4

73. If $A = \{1,2\} B = \{3,4\}$ then $n(A \times B) = ________$
   a) 2  b) 3  c) 4  d) 5

74. If $A = \{5,7,8\} B = \{7,8,9\}$ then $A - B = ________$
   a) (5,9)  b) (5,8)  c) (5,7)  d) (5)

75. If $\begin{bmatrix} 1 & 3 \\ 1 & 0 \end{bmatrix} \begin{bmatrix} 2 \\ 1 \end{bmatrix} = \begin{bmatrix} P \\ 2 \end{bmatrix}$ then the value of $P =$
   a) 5  b) -1  c) 0  d) 2

76. The value of $5c_4 + 5c_1$ is
   a) 10  b) 12  c) 20  d) 16

77. In an A.P. if $a = -3$, $d = -2$ then the $20^{th}$ term is
   a) 40  b) 41  c) -41  d) -40

78. If $a,b,c$, are in A.P. then the geometric mean $b = ________$
   a) $\frac{a+c}{2}$  b) $\frac{a-c}{2}$  c) $\sqrt{ac}$  d) $ac$
79. The remainder when \( x^2 + x - 5 \) is divided by \( x-2 \)
   a) 1  b) -1  c) 2  d) -2

80. If \( f(x) = 2-x \), \( g(x) = 3x+2 \) then \((f \circ g)(2) = \)
   a) 4+2x  b) -4x  c) 2  d) -6

81. If \( p = \begin{bmatrix} 1 & 0 \\ 0 & 3 \end{bmatrix} \), \( \phi = \begin{bmatrix} 1 & 0 \\ 0 & a+1 \end{bmatrix} \) and \( p = \phi \) then \( a = \)
   a) 3  b) 1  c) 2  d) -2

82. If \( A = \begin{bmatrix} 1 & 0 \\ 2 & 3 \end{bmatrix} \), \( B = \begin{bmatrix} 0 & 2 \\ 0 & 4 \end{bmatrix} \) then \( AB = \)
   a) \( \begin{bmatrix} 0 & 2 \\ 0 & 16 \end{bmatrix} \)  b) \( \begin{bmatrix} 0 & 2 \\ 2 & 16 \end{bmatrix} \)  c) \( \begin{bmatrix} 0 & 2 \\ 16 & 0 \end{bmatrix} \)  d) Can not be found

83. If \( \begin{bmatrix} x & y \\ p & q \end{bmatrix} = \begin{bmatrix} 1 & 2 \\ 2 & 4 \end{bmatrix} \) then \( p+q = \)
   a) 3  b) 7  c) 4  d) 1

84. The relation between Mean, Median and Mode is
   a) Mean = 3 median -2 Mode  b) Median=3 Mean - 2 Mode
   c) Mode = 3 Mean-2 Median  d) Mode = 3 Median-2 Mean

85. The diagrams in a histogram are
   a) Sectors  b) Rectangles  c) Triangles  d) Squares

86. If \( \sin 30^\circ = \cos A \) then the value of \( A \) is
   a) 30\(^\circ\)  b) 60\(^\circ\)  c) 45\(^\circ\)  d) 90\(^\circ\)
87. If \( \sin \theta = \frac{1}{2} \) then \( \cot \theta = \) __________
   a) \( \frac{1}{2} \)  
   b) \( -\frac{1}{2} \)  
   c) 1  
   d) \( \sqrt{3} \)

88. The value of \( (64)^{\frac{2}{3}} \) = __________
   a) 8  
   b) 4  
   c) 12  
   d) 16

89. The triangle with sides 10, 8, 6 is a __________
   a) Acute angled triangle  
   b) Right angled triangle  
   c) Obtuse angled triangle  
   d) None of these

90. The harmonic mean of \( x, y \) is __________
   a) \( \frac{x+y}{2} \)  
   b) \( \frac{2xy}{x-y} \)  
   c) \( \frac{2xy}{x+y} \)  
   d) \( \sqrt{xy} \)

91. \( (x^{p-q}) (x^{q-r}) (x^{r-p}) \) = __________
   a) 0  
   b) 1  
   c) -1  
   d) \( p \)

92. If \( 2^{x+3} = 4^{x-5} \) then \( x = \) __________
   a) 10  
   b) 11  
   c) 12  
   d) 13

93. If \( x < 0, y > 0 \) then the quadrant in which \( x \) lies is
   a) I  
   b) II  
   c) III  
   d) IV

94. The sum of the roots of the equation \( 2x^2-9x+8=0 \) = __________
   a) \( -\frac{9}{2} \)  
   b) 8  
   c) 4  
   d) \( \frac{9}{2} \)

95. The value of \( \frac{\tan 60^\circ - \tan 15^\circ}{1 + \tan 60^\circ \tan 15^\circ} \) = __________
   a) 1  
   b) 2  
   c) 3  
   d) 4
96. If \( f: A \to B \), if \( B \to C \) then the function \((gof)\) is  
\[ \begin{align*} 
\text{a) } (gof): & \ A \to C & \text{b) } (gof): & \ C \to A & \text{c) } (gof): & \ A \to B & \text{d) } (gof): & \ B \to A 
\end{align*} \]

97. The line \( x = 3 \) intersects x-axis at ______ point  
\[ \begin{align*} 
\text{a) } (0,3) & \quad \text{b) } (3,0) & \quad \text{c) } (0,-3) & \quad \text{d) } (-3,0) 
\end{align*} \]

98. If \( p \) is the mode of \( 2,3,3,2,3,1 \) then the value of \( p \) is  
\[ \begin{align*} 
\text{a) } 1 & \quad \text{b) } 2 & \quad \text{c) } 3 & \quad \text{d) } \text{Can not be found} 
\end{align*} \]

99. If \( \sin \theta = \frac{x}{y}, \cos \theta = \frac{a}{b} \) then the value of \( \cot \theta \) is  
\[ \begin{align*} 
\text{a) } \frac{x}{a} & \quad \text{b) } \frac{y}{b} & \quad \text{c) } \frac{bx}{ay} & \quad \text{d) } \frac{ay}{bx} 
\end{align*} \]

100. The harmonic mean of \( 3,5 \) is __________  
\[ \begin{align*} 
\text{a) } \frac{15}{4} & \quad \text{b) } \frac{13}{4} & \quad \text{c) } \frac{17}{4} & \quad \text{d) } \frac{11}{4} 
\end{align*} \]
APPENDIX - F

Answer sheet cum scoring key of the achievement test in mathematics
X class used for final study

Name of the Student: 
Village / Town: 

Name of the School:

Note: Choose the correct choice from the given alternatives and write its letter in the brackets

2. [c] 22. [a] 42. [a] 62. [d]
3. [c] 23. [c] 43. [b] 63. [c]
4. [c] 24. [b] 44. [c] 64. [d]
5. [d] 25. [c] 45. [c] 65. [b]
7. [a] 27. [c] 47. [a] 67. [b]
10. [c] 30. [a] 50. [a] 70. [b]
11. [a] 31. [d] 51. [b] 71. [d]
12. [b] 32. [c] 52. [d] 72. [a]
14. [d] 34. [c] 54. [a] 74. [d]
15. [a] 35. [c] 55. [b] 75. [a]
16. [c] 36. [a] 56. [a] 76. [a]
17. [a] 37. [d] 57. [b] 77. [c]
18. [c] 38. [c] 58. [b] 78. [c]
20. [d] 40. [a] 60 [d] 80. [d]
81. [c]  
82. [a]  
83. [b]  
84. [d]  
85. [b]  
86. [b]  
87. [d]  
88. [d]  
89. [b]  
90. [c]  
91. [b]  
92. [d]  
93. [b]  
94. [d]  
95. [a]  
96. [a]  
97. [a]  
98. [c]  
99. [c]  
100. [a]
WHAT TO DO: you have a booklet and Answer sheet. Write your name, age, etc., on the Answer Sheet where it tells you to.

We want to know what sort of person you are. The paper before you has questions about your interests and your likes and dislikes. First we shall give you two examples so that you will know what exactly what to do. After each question there are three answers. Although you are to read the question in this booklet, you must put your answers on the answer sheet, along side the same number booklet. Read the following examples and mark an x for your answer on the Answer Sheet where indicated:

EXAMPLES:

<table>
<thead>
<tr>
<th>1. Which would you rather do:</th>
<th>2. If you have a quarrel, do you make friends again quickly?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Visit a zoo</td>
<td>a. yes, b. in between (or uncertain)</td>
</tr>
<tr>
<td>b. Uncertain</td>
<td>c. no</td>
</tr>
<tr>
<td>c. Go up in an aeroplane?</td>
<td></td>
</tr>
</tbody>
</table>

As you see from these examples, there are usually no right and wrong answers. Each person is different and has only to say what is true for him. You can always find one answer that suits you a little better than the others. So never leave the answers without marking one of the answers.

In side you will find more questions like the one above. When you are told to turn the page begin with number one and go on until you finish all the questions. In answering them please keep these four points in mind:

Answer the questions frankly and truthfully. There is no advantage in giving the wrong impression. Never give an untrue answer about yourself because you think it is the "right thing to say." There are ways of detecting such unfair answers.

1. Please answer the questions as quickly as you can. Do not spend time puzzling over them. Give the first natural answer as it comes to you. Some questions are a bit similar to others but no two are exactly alike and your answers will often differ in these cases.

2. Use the middle answer only when it is absolutely impossible to lean toward one or the other of the answer choices. In other words the "yes" (or "a") or the "no" (or "c") answer should be used for most cases.
3. Do not skip any questions. Occasionally a statement may not seem to apply to you or your interests, but answer every question, somehow.

If there is anything you want to ask about what you have to do, ask now. If there is nothing now, but you meet a word later on you do not understand, stop and ask then.

1. Have you understood the instructions?
   a. yes, b. uncertain c. no.

2. At a picnic you would rather spend some time:
   a. exploring the woods alone,
   b. uncertain
   c. playing around the campfire with the crowd

3. When you write an essay about your personal thoughts and feelings do to you:
   a. enjoy telling about yourself,
   b. uncertain,
   c. Prefer to keep some ideas to yourself.

4. When you do a foolish thing, do you feel so badly that you wish the earth would just allow you up?
   a. yes, b. perhaps, c. no.

5. Do you find it easy to keep an existing secret?
   a. yes b. sometimes, c. no.

6. Compared to other people do you make up your mind:
   a. with hesitation
   b. in between,
   c. with certainty?

7. When things go wrong and upset you, do you believe in:
   a. Just smiling, b. in between, c. making a fuss?

8. If friends’ ideas differ from yours, do keep from saying yours are better, so as not to hurt their feelings?
   a. yes b. sometimes, c. no.

9. Do you laugh with your friends more in class than other people do?
   a. yes, b. perhaps, c. no.

10. Do most people seem to enjoy your company?
    a. Yes, a lot b. Just average
    b. No.

11. Which of these says better what you are like?
    a. Dependable leader b. In between
    c. Charming and good looking

12. Do you some times feel, before a big party or outing, that you are not so interested in going?
    a. yes, b. perhaps, c. no.
13. When you rightly feel angry with people, do you think it is alright for you to shout at them?
   a. yes, b. perhaps c. no.

14. When classmates play a joke on you, do you usually enjoy it as much as others with out feeling at all upset?
   a. True, b. perhaps, c. No.

15. Are there times when you think, "people are so unreasonable, they can't even be trusted to look after their own good."
   a. True b. perhaps c. False

16. Can you always tell what your real feelings are?
   a. yes, b. perhaps, c. no.

17. Do you think that there is a fair chance that you will be a well-known popular figure when you grow up?
   a. yes, b. perhaps, c. no.

18. When you are given higher grades than usually make, do you feel that the teacher might have made a mistake?
   a. yes, b. perhaps, c. no.

19. Would you rather be
   a. a traveling TV actor, b. Uncertain c. a medical doctor.

20. Do you think that life has been a bit happier and more satisfying for you than many other people?
   a. yes, b. perhaps, c. no.

21. Do you have trouble remembering some one's joke well enough to tell it yourself?
   a. yes, b. sometimes, c. no.

22. Have you enjoyed being in drama, such as school plays?
   a. yes b. uncertain c. no.

23. "Mend" means the same as:
   a. repair b. help c. Patch

24. "truth" is the opposite of :
   a. fancy b. false hood c. denial

25. Do you completely understand what you read in school?
   a. yes b. usually, c. no.

26. When chalk that screeches on the black board does it make you feel queer?
   a. yes, b. perhaps, c. no.

27. When some thing goes badly wrong, do you get very angry with people before you start to think what can be done about it?
   a. Often b. sometimes, c. seldom.

28. When you finish school, would you like to:
   a. do something that will make people like you, though there is no much income
   b. uncertain c. make a lot of money.

29. Do you dislike going into narrow caves or climbing to high places?
   a. yes. b. sometimes, c. no.
30. Are you always ready to show in front of everyone, how well you can do things compared with others?
   a. yes  b. Perhaps  c. no.
31. Do you like to tell people to follow proper rules and regulations?
   a. yes  b. perhaps  c. no.
32. Can you talk to a group of stranger's without stammering a little or with out finding it hard to say what you want to?
   a. yes  b. perhaps  c. no.
33. Do some types of movies upset you?
   a. yes  b. perhaps  c. no.
34. Would you enjoy more watching a boxing match than a beautiful dance?
   a. yes  b. perhaps  c. no.
35. If some one has been unkind to you, do you soon trust him again and give him another chance?
   a. yes  b. perhaps  c. no.
36. Do you some times feel you are not much good, and that you never do anything worth while?
   a. yes  b. perhaps  c. no.
37. In the first grade, did you always go to school without your mother have to make you?
   a. yes  b. Perhaps  c. no.
38. Do you tend to be quite when out with a group of friends?
   a. yes  b. sometimes  c. no.
39. Do people say that you are a person who can always be counted on to do things exactly and methodically (carefully)
   a. yes  b. perhaps  c. no.
40. If some one puts on noisy music while you are trying to work, can you still go on working?
   a. yes  b. perhaps  c. no.
41. Would you rather spend some spare pocket money on?
   a. a popular dance record  
   b. uncertain  
   c. a book show how you can earn more pocket money.
42. DO you feel hurt if your things are barrowed without asking you?
   a. yes  b. perhaps  c. no.
43. “Firm” is the opposite of
   a. hard  b. kind  c. loose.
44. “Rich” is to “money” as “sad” is to
   a. trouble  b. friends  c. land
45. Have you always got along really well with your parents, brothers and sisters?
   a. yes  b. perhaps  c. no.
46. If your friends leave you out of some thing they are doing, do you:
   a. think they made a mistake  b. Neutral  c. feel hurt and angry?
47. Do people say you sometimes careless and untidy, though they think you are a fine person?
   a. yes,       b. perhaps   c. no.

48. Have you ever told your parents that some teachers are too old fashioned to understand modern young people like you and your friends?
   a. yes,       b. perhaps   c. no.

49. Which would you rather be:
   a. The most popular person in the school
   b. uncertain
   c. the person with the best grades.

50. In a group of a people are you generally one of those who tell jokes and funny stories?
   a. yes,       b. perhaps   c. no.

51. Are you usually patient with people who speak speedily or very slowly?
   a. yes        b. sometimes   c. no

52. Are you feelings easily hurt?
   a. yes,       b. perhaps   c. no.

53. In a play would you rather act the part of a famous teacher of art than a tough pirate?
   a. yes,       b. perhaps   c. no.

54. Which course would you rather take:
   a. practical mathematics   b. uncertain   c. Foreign language or drama.

55. Would you rather spend free time:
   a. by your self, on book or stamp collection
   b. Uncertain
   c. working under others in group project

56. Do you feel that you are getting along well, and that you do every thing that could be expected of you?
   a. yes,       b. perhaps   c. no.

57. Do you find yourself humming tunes some one else started?
   a. yes,       b. perhaps   c. no.

58. When a new fad starts, for example, in dress or way of speaking, do you:
   a. start early and go along with it
   b. uncertain
   c. wait and watch before deciding if you will follow it.

59. Would you like to be extremely good looking, so that people would notice you wherever you go?
   a. yes,       b. perhaps   c. no.

60. Do you feel the most of your desires and needs are of reasonably fulfilled?
   a. yes,       b. perhaps   c. no.

61. When you read an adventurous story, do you:
   a. get bothered whether it is going to end happily
   b. uncertain
   c. just enjoy the story as it goes along.

62. In dancing or music do you pick up a new rhythm easily?
   a. yes        b. sometimes   c. no.

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63. "picture" is to "scenery" as "novel" is to:
   a. locality   b. history   c. book

64. If Joan's mother is my father's sister, what relation is Joan's father to me?
   a. father b. brother c. uncle

65. Do you often make big plans and get excited about them, only to find that they just don't work out?
   a. yes,   b. perhaps   c. no.

66. Can you work hard on something, without being bothered if there's a lot of noise around you?
   a. yes,   b. perhaps   c. no.

67. Do you often remember things differently from other people, so that you have to disagree about what really happened?
   a. yes,   b. perhaps   c. no.

68. Do you prefer having teachers tell you how things should be done?
   a. yes,   b. perhaps   c. no.

69. When you are ready for a job, would you like one that:
   a. is steady and safe, even if it needs hard work,
   b. uncertain,
   c. has lots of change and meeting with newly people?

70. In group activities, which do you prefer?
   a. to be a good leader,
   b. Neutral
   c. to be a good follower.

71. If you find another pupil doing a job you had been told to do, would you:
   a. ask him to let you do it,
   b. Uncertain,
   c. let him keep on until the teacher would come to decide?

72. Can you work just as well without making more mistakes, when people are watching you?
   a. yes,   b. perhaps   c. no.

73. When you see something very sad in a play do you:
   a. find it hard to keep the tears away,
   b. Neutral,   c. no

74. Would you rather spend an afternoon by a lake: when you spend an evening besides a lake; you feel
   a. watching dangerous speed boat racing,
   b. uncertain,
   c. walking by a beautiful shore with a friend?

75. When you are in a group, do you spend more time:
   a. enjoying the friendship,
   b. uncertain,
   c. watching what is happening.

76. Which of these changes in school would you rather like:
   a. putting slow people in class of their own,
   b. uncertain,
   c. doing away with unnecessary punishments.
77. When things are going wonderfully, do you:
   a. Actually almost "jump for joy"
   b. uncertain      c. feel calm even if you are happy
78. Would rather be:
   a. builder of bridges, b. uncertain,
   c. a member of traveling circuses?
79. When something is bothering you, do you think it's better to:
   a. try to hold it until you're in a calmer state,
   b. uncertain,
   c. blow off steam?
80. DO you sometimes say silly things, just to see what people will say?
   a. yes,           b. perhaps    c. no.
81. When you do badly in an important game do you:
   a. feel, "This is just a game",
   b. uncertain      c. get angry and "kick" yourself”.
82. Do you go out of your way to avoid crowded buses and streets?
   a. yes,           b. perhaps    c. no.
83. “Usually” means the same as:
   a. sometimes,     b. always,     c. no.
84. If all firtrees are coniferous trees, and all coniferous trees are ever greens, which of the following is true?
   a. all firs are ever greens,
   b. all ever greens are firs,
   c. all coniferous trees are firs.
85. Are you satisfied that you come up to what people expect from someone of your age?
   a. yes,           b. perhaps  c. no.
86. If you keep breaking and accidentally wasting your things when you are making something, do you keep calm just the same?
   a. yes,           b. perhaps  c. no.
87. Do you tell school mates who are getting too noisy to keep quiet?
   a. often          b. sometimes, c. seldom.
88. In trip with naturalists, would you find it more fun to:
   a. catch birds and preserve them in a collection,
   b. uncertain,
   c. make artistic photos and paintings of birds on the wing?
89. Would you rather:
   a. read a story of wild adventure,
   b. uncertain      c. actually have wild adventures happen to you
90. Are you “steady and sure” in what you do?
   a. seldom         b. sometimes  c. always
91. With people who take a long time to answer a question, do you:
   a. let them take their own time, how ever long,
   b. Neutral
   c. try to hasten them to answer and get cross if they take a long time.
92. Do you sometimes feel unwilling to try sometime, though you know it is not really dangerous?
   a. yes            b. perhaps  c. no.
Do you stand up before class without looking nervous and ill at ease?
  a. yes  
  b. perhaps  
  c. no.

Which would you rather watch on a fine evening:
  a. car racing,  
  b. uncertain,  
  c. an open air musical play.

Have you ever thought what you would do if you were the only person left in the world?
  a. yes,  
  b. can not say exactly  
  c. no.

When you have to wait in a queue, do you often:
  a. wait patiently,  
  b. uncertain,  
  c. fidget and think of going of instead of waiting.

Do you wish you could learn to be more care free and light-hearted about your school work?
  a. yes b. perhaps c. no.

Are you, like a lot of people, slightly afraid of lightening?
  a. yes,  
  b. perhaps  
  c. no.

Do you ever suggest to the teacher a new subject for the class to discuss?
  a. yes,  
  b. perhaps  
  c. no.

Would you rather spend a break between morning and afternoon classes in:
  a. a card game,  
  b. uncertain,  
  c. catching up on homework?

When you are walking in a quite street in the dark, do you often get the idea you are being followed?
  a. yes,  
  b. uncertain  
  c. no.

In talking with your classmates do you dislike telling your most private feelings?
  a. yes  
  b. sometimes  
  c. no

When you go into a new group, do you:
  a. quickly feel you know every one,  
  b. in between  
  c. take a long time to get to know people?

Look at these five words: mostly, gladly, chiefly, mainly and highly. The word that does not belong with the other is:
  a. mostly,  
  b. gladly  
  c. highly.

Do you sometimes feel happy and sometimes feel depressed with out real reason?
  a. yes  
  b. uncertain,  
  c. no.

When people around you laugh and talk while you are listening to radio or TV:
  a. can you listen with out being bothered,  
  b. in between  
  c. does it annoy you?

If you accidentally say something odd in company, do you stay uncomfortable a long time, and find it hard to forget?
  a. yes, b. perhaps c. no.
108. Are you known among your friends for going “all out” for things that take your fancy?
   a. yes,  b. perhaps  c. no.
109. Are you best regarded as a person who:
   a. thinks,  b. in between  c. acts?
110. DO you spend most of your allowance each week for fun (instead of saving much of it for future needs)?
   a. yes,  b. perhaps  c. no.
111. Do other people often get in your way?
   a. yes,  b. perhaps  c. no.
112. How would you rate yourself?
   a. inclined to be moody  b. in between  c. not at all moody.
113. In school, do you feel, your teachers:
   a. approve of you  b. uncertain  c. hardly know you are there?
114. Do your interests:
   a. roam widely over many things,  b. in between,  c. settle strongly on one or two important things?
115. Do you get in trouble more often through saying to a group wanting to do something:
   a. “let’s go!”  b. uncertain,  c. “I’d rather not join in”?
116. When you were growing up, did you expect the world to be:
   a. more known and considerate than it is,  b. uncertain  c. more tough and hard than it is?
117. DO you find it easy to go up and introduce your self to an important person?
   a. yes,  b. perhaps  c. no.
118. Do you think that the average committee of your classmates often makes poorer decisions than one person would do and also takes too much time?
   a. yes,  b. perhaps  c. no.
119. Do you usually:
   a. follow your own ideas of what is right  b. uncertain  c. Do the same as other people?
120. Do you sometimes go on and do something you very much want to do, even though you feel a bit ashamed of your self?
   a. yes,  b. perhaps  c. no.
121. When some one is disagreeing with you, do you:
   a. let him say all he has to say  b. uncertain  c. tend to interrupt before he finishes?
122. Would you rather live:
   a. in a deep forest with only the song of birds,  b. uncertain  c. on a busy street corner, where a lot happens?
123. When a new teacher comes to your class, does he or she soon notice who you are and remember you?
   a. yes  b. perhaps  c. no.
124. Look at these five words: below, beside, above, behind, between. The word that does not belong with others is:
   a. below
   b. between
   c. beside
125. If someone asks you to do a new and difficult job, do you:
   a. Feel glad and show what you can do
   b. Neutral
   c. feel you will make a mess of it
126. When you raise your hand to answer a question in class, and many others raise their hands too, do you get excited?
   a. sometimes,  b. not often,  c. never
127. If you do a Job in a school, you would rather be:
   a. a librarian, looking after the reading books,
   b. uncertain,  c. an athletic coach?
128. On your birthday do you prefer:
   a. to be asked beforehand so that you can choose the present you want,
   b. uncertain,
   c. to have the fun of getting a present as a complete surprise?
129. Are you very careful not to hurt any one's feelings or startle any one, even in fun?
   a. yes,  b. perhaps  c. no.
130. If you were working with groups in class, would you rather:
   a. walk around to carry things from one person to another,  b. uncertain,
   c. specialize in showing people how to do one difficult part?
131. Do you take trouble to be sure you are right before you say anything in class?
   a. always,  b. generally,  c. not usually.
132. Are you so afraid of consequences that you avoid making decisions one way or the other?
   a. often,  b. sometimes,  c. never.
133. Do you have periods of feelings just "run down"?
   a. seldom,  b. sometimes,  c. often
134. When a close friend prefers someone else's company to yours on a special day, do you:
   a. complain to him for neglecting you,
   b. in between,
   c. Take it in a "matter of fact" way?
135. Would you like better, when in country:
   a. running a class picnic,
   b. uncertain
   c. learning to know all the different trees in the woods?
136. In group discussions, do you often find yourself:
   a. talking a lone stand,  b. uncertain,  c. agreeing with the group.
137. Do your feelings get so bottled up that you feel you could burst?
   a. often,  b. seldom,  c. sometimes.
138. Which kind of friends do you like? Those who like to:
   a. "kid around" b. uncertain c. be more serious.

139. If you were not a human being, would you rather be:
   a. an eagle on a far mountain b. Uncertain
c. a seal, in a seal colony by the sea shore?

140. Do you think that to be polite you must learn to control your feelings?
   a. yes, b. perhaps c. no.

141. Do small troubles sometimes "get on your nerves" even though you
    know that they are not very important?
   a. yes, b. perhaps c. no.

142. Are you sure you have answered every question?
   a. yes, b. perhaps c. no.
APPENDIX - H
H.S.P.Q. - FORM - A

1. H.S.P.Q. - FORM - A

2. H.S.P.Q. - FORM - A

3. H.S.P.Q. - FORM - A

4. H.S.P.Q. - FORM - A

5. H.S.P.Q. - FORM - A

6. H.S.P.Q. - FORM - A
7) גלויו ובלו את השרmaktא בבל יניא
   (a) המנוסה הלא בבל יניא? (b) המנוסה הלא בבל ניאינא?
8) גלויו ובלו את השרmaktא בבל יניא (c) המנוסה הלא בבל יניאינא ובל יניאינא במונאות פנימיות פנימיות?
   (a) בקע (b) בקע (c) בקע
9) בצלאל (סNeill) ההפרטא בבל יניאמה (d) השרmaktא בבל יניאמה בבל יניאמה בבל יניאמה?
   (a) בקע (b) בקע (c) בקע
10) גלויו ובלו את השרmaktא בבל יניא?
   (a) גלויו ובלו את השרmaktא בבל יניא (b) גלויו ובלו את השרmaktא בבל יניא (c) גלויו ובלו את השרmaktא בבל יניא
11) גלויו ובלו את השרmaktא בבל יניאמה (e) גלויו ובלו את השרmaktא בבל יניאמה (f) גלויו ובלו את השרmaktא בבל יניאמה
   (a) בקע (b) בקע (c) בקע
12) גלויו ובלו את השרmaktא בבל יניאמה (g) גלויו ובלו את השרmaktא בבל יניאמה (h) גלויו ובלו את השרmaktא בבל יניאמה?
   (a) בקע (b) בקע (c) בקע
13) גלויו ובלו את השרmaktא בבל יניאמה (i) גלויו ובלו את השרmaktא בבל יניאמה (j) גלויו ובלו את השרmaktא בבל יניאמה?
   (a) בקע (b) בקע (c) בקע
14) גלויו ובלו את השרmaktא בבל יניאמה (k) גלויו ובלו את השרmaktא בבל יניאמה (l) גלויו ובלו את השרmaktא בבל יניאמה?
   (a) בקע (b) בקע (c) בקע
15) גלויו ובלו את השרmaktא בבל יניאמה (m) גלויו ובלו את השרmaktא בבל יניאמה (n) גלויו ובלו את השרmaktא בבל יניאמה (unreasonable) (o) גלויו ובלו את השרmaktא בבל יניאמה (p) גלויו ובלו את השרmaktא בבל יניאמה (q) גלויו ובלו את השרmaktא בבל יניאמה?
   (a) בקע (b) בקע (c) בקע
16) גלויו ובלו את השרmaktא בבל יניאמה (r) גלויו ובלו את השרmaktא בבל יניאמה (s) גלויו ובלו את השרmaktא בבל יניאמה (t) גלויו ובלו את השרmaktא בבל יניאמה (unreasonable) (u) גלויו ובלו את השרmaktא בבל יניאמה (v) גלויו ובלו את השרmaktא בבל יניאמה (w) גלויו ובלו את השרmaktא בבל יניאמה?
   (a) בקע (b) בקע (c) בקע
17) גלויו ובלו את השרmaktא בבל יניאמה (x) גלויו ובלו את השרmaktא בבל יניאמה (y) גלויו ובלו את השרmaktא בבל יניאמה (z) גלויו ובלו את השרmaktא בבל יניאמה?
   (a) בקע (b) בקע (c) בקע
18) גלויו ובלו את השרmaktא בבל יניאמה (aa) גלויו ובלו את השרmaktא בבל יניאמה (bb) גלויו ובלו את השרmaktא בבל יניאמה (cc) גלויו ובלו את השרmaktא בבל יניאמה?
   (a) בקע (b) בקע (c) בקע
19) גלויו ובלו את השרmaktא בבל יניאמה (dd) גלויו ובלו את השרmaktא בבל יניאמה?
   (a) בקע (b) בקע (c) בקע
20) גלויו ובלו את השרmaktא בבל יניאמה (ee) גלויו ובלו את השרmaktא בבל יניאמה (ff) גלויו ובלו את השרmaktא בבל יניאמה?
   (a) בקע (b) בקע (c) בקע
21) גלויו ובלו את השרmaktא בבל יניאמה (gg) גלויו ובלו את השרmaktא בבל יניאמה (hh) גלויו ובלו את השרmaktא בבל יניאמה?
   (a) בקע (b) בקע (c) בקע
203) גלויו ובלו את השרmaktא בבל יניאמה (ii) גלויו ובלו את השרmaktא בבל יניאמה (jj) גלויו ובלו את השרmaktא בבל יניאמה?
37) Which one of these objects has been used or is being carried nowadays in schools?

1) Bag  
2) Backpack  
3) Satchel

38) Which of the following words is a synonym for “quiet”?

1) Silent  
2) Loud  
3) Pitched

39) Name one of the conditions necessary for a school to be functional in the current scenario.

1) Teachers  
2) Students  
3) Furniture

40) Which of the following objects is not used in schools nowadays?

1) Blackboard  
2) Pen  
3) Pencil

41) What is pocket money?

1) The amount of money given to students by their parents.  
2) The amount of money given to students by the school.  
3) The amount of money given to students by the government.

42) Which of the following is not a function of a school?

1) Teaching  
2) Learning  
3) Entertainment

43) What is the main function of schools?

1) Teaching  
2) Learning  
3) Entertainment

44) Which of the following words is a synonym for “loose”?

1) Tight  
2) Tied  
3) Untied

45) Which of the following objects is not used in schools nowadays?

1) Blackboard  
2) Pen  
3) Pencil

46) Which of the following is true about the words “pocket” and “money”?

1) Pocket is a name for a bag.  
2) Money is the currency used in schools.  
3) Pocket money is the money given to students by their parents.

47) What is the main function of schools?

1) Teaching  
2) Learning  
3) Entertainment

48) Which of the following words is a synonym for “feel”?

1) Touch  
2) See  
3) Observe

49) Which of the following words is a synonym for “sleep”?

1) Rest  
2) Dream  
3) Wake

50) Which of the following words is a synonym for “eat”?

1) Drink  
2) Chew  
3)吞咽

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51) What is the main purpose of the art teacher? 
   a) to teach b) to inspire c) to create

52) Does the art teacher use any specific tools? 
   a) yes b) no c) sometimes

53) What are the art teacher's responsibilities? 
   a) to teach art b) to inspire students c) to create art

54) What is the art teacher's role in preparing students for future careers? 
   a) to teach art b) to inspire students c) to create opportunities

55) How does the art teacher contribute to the school's culture? 
   a) by teaching art b) by inspiring students c) by creating opportunities

56) What are some of the art teacher's goals for the students? 
   a) to teach art b) to inspire students c) to create opportunities

57) What are the art teacher's qualifications? 
   a) teaching art b) inspiring students c) creating opportunities

58) What is the art teacher's role in the school community? 
   a) to teach art b) to inspire students c) to create opportunities

59) How does the art teacher's role differ from other teachers? 
   a) to teach art b) to inspire students c) to create opportunities

60) What are some of the challenges faced by the art teacher? 
   a) teaching art b) inspiring students c) creating opportunities

61) What does the art teacher enjoy about his/her job? 
   a) teaching art b) inspiring students c) creating opportunities

62) How does the art teacher's role compare to other teachers? 
   a) teaching art b) inspiring students c) creating opportunities

63) What are some of the benefits of having an art teacher in school? 
   a) teaching art b) inspiring students c) creating opportunities

64) Why is it important to have an art teacher in school? 
   a) teaching art b) inspiring students c) creating opportunities
65) Which of the following is the same as the word 'handicapped'?  
(a) disabled  
(b) handicapped  
(c) disabled

66) What is the meaning of 'handicapped' if it is used in the context of a sports event?  
(a) a team of athletes  
(b) an athlete  
(c) both (a) and (b)

67) Which of the following is the same as the word 'boat race'?  
(a) a boat competition  
(b) a boat race  
(c) both (a) and (b)

68) Which of the following is the same as the word 'boat race'?  
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77) Which of the following is the same as the word 'boat race'?  
(a) a boat competition  
(b) a boat race  
(c) both (a) and (b)
104) Which of the following are essential for a good credit report?  
   a) Credit History  
   b) Payment History  
   c) Credit Utilization Ratio

105) What are the key components of an effective credit report?  
   a) Credit History  
   b) Payment History  
   c) Credit Utilization Ratio

106) Explain the differences between traditional credit reporting and alternative credit reporting.  

107) In traditional credit reporting, why is it important for debtors to pay their loans on time?  
   a) To improve credit score  
   b) To avoid legal action  
   c) To maintain good relationships with creditors

108) How does credit utilization affect a borrower's credit score?  
   a) Improves credit score  
   b) Decreases credit score  
   c) No effect on credit score

109) What is the purpose of a credit score?  
   a) To determine creditworthiness  
   b) To assess credit utilization  
   c) To calculate interest rates

110) How does a credit utilization ratio affect a borrower's credit score?  
   a) Improves credit score  
   b) Decreases credit score  
   c) No effect on credit score

111) What is the impact of delinquency on a credit report?  
   a) Negative impact  
   b) Positive impact  
   c) No impact on credit report

112) What is the role of alternative credit reporting?  
   a) To provide a broader perspective on creditworthiness  
   b) To replace traditional credit reporting  
   c) To improve credit access for consumers with limited traditional credit history

113) What is the impact of bankruptcy on a credit report?  
   a) Negative impact  
   b) Positive impact  
   c) No impact on credit report

114) Explain the importance of maintaining a good credit history.  
   a) Improves credit score  
   b) Avoids legal action  
   c) Good relationships with creditors

115) How does a credit utilization ratio affect a borrower's credit score?  
   a) Improves credit score  
   b) Decreases credit score  
   c) No effect on credit score

116) What is the significance of a credit utilization ratio?  
   a) To determine creditworthiness  
   b) To assess credit utilization  
   c) To calculate interest rates

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ფიჭვ წინ ჩათ წყლით, როდისაც მიღება იყო (3) ეწყობა გაურჩევანი ფიჭვი განუმარტივად (4)

იმისთვის, რომ გამოიწვილოს მიმართული უპეტ ჯამურად (5) თქვენმა შეაფარა ჩრდილოეთ კუნძალი (6)

აღნიშნავთ, რომ ქალაქში, რკინი იყო (7)

წყლით გალოხილა ომარჯილო ხედა და გამით დაცვით (8) დარცხდა (9)

აქვქილი ქალაქში, რომ გამოიწვევოს გამობრძანილი ქალაქი არა (10)

განვითარება ფართო მახლობლად შეიცვალა და დაგიზარდა (11)
# APPENDIX I

## HSPQ Scoring Key

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APPENDIX-K
Study Habits Inventory
(Prepared and Standardized by Dr. B.V. Patel)

Name............................................ Age...........Class...............

School...........................................Boy/Girl..........................

Village/City ..................District............Date ..................

<table>
<thead>
<tr>
<th>Home environment and planning</th>
<th>Reading &amp; note taking</th>
<th>Planning of Subjects</th>
<th>Habit of concentration</th>
<th>Preparation for examinations</th>
<th>Habits and Attitudes</th>
<th>School or college environment</th>
<th>Total</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

Remarks......................

Instructions

1. As soon as you get this booklet, fill in your name age, school name etc.

2. The statements that are given in this booklet depict your study-habits or method of study. Therefore there is no right or wrong answer.

3. Against each statement five columns are given names 1, 2, 3, 4, and 5.

4. After reading each statement you have to tick mark (✓) in a proper column by deciding critically to what extent it resembles to your study habit or method of study that you have at present.

Illustration—

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Seldom</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I read regularly</td>
<td>....</td>
<td>✓</td>
<td>....</td>
<td>....</td>
<td>....</td>
</tr>
</tbody>
</table>

I read regularly. After reading this statement, I compare it with my present habit. After comparing it I feel, that often I read regularly. Therefore a tick mark (✓) against that statement in the column of 'often' has been put above the three small dots. In this way you have to answer all the statements.

5. There is no time limit

6. Be as honest as possible in answering. Your answers will be kept secret.
<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Seldom</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I frame my own time-table to study at home.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
<td>I work according to my time-table</td>
<td></td>
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<td>3.</td>
<td>I study regularly in study room</td>
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<tr>
<td>4.</td>
<td>I prepare all most all my subject before going to school and read them again at home, what ever is done in the class.</td>
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<td>5.</td>
<td>I join tuition classes</td>
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<td>6.</td>
<td>I read at place where I get disturbed by radio, people’s talk, children’s play, relatives, guests, etc</td>
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<tr>
<td>7.</td>
<td>I can not study well as I keep myself engaged in the domestic works</td>
<td>***</td>
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<tr>
<td>8.</td>
<td>I make note of important points during reading</td>
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<td>9.</td>
<td>I use dictionary to look up meaning of new words</td>
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<tr>
<td>10.</td>
<td>I pay more attention to new words while studying</td>
<td></td>
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<tr>
<td>11.</td>
<td>I take down detailed notes of what is being taught in the classroom</td>
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<tr>
<td>12.</td>
<td>The doubtful points, which arise during reading, are referred to the subject teacher for clarity</td>
<td></td>
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<tr>
<td>13.</td>
<td>I try to solve at once, the difficulties met with while reading</td>
<td></td>
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<tr>
<td>14.</td>
<td>I miss important while taking notes in the classroom</td>
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<tr>
<td>15.</td>
<td>I read annotations (guides) rather than textbooks</td>
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<tr>
<td>16.</td>
<td>I underline the important points in my textbooks while reading</td>
<td>***</td>
<td>***</td>
<td>***</td>
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<tr>
<td>17.</td>
<td>I pay more attention to the subject I find difficult.</td>
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<tr>
<td>18.</td>
<td>I devote more time to study subject in which I am weak.</td>
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<tr>
<td>19.</td>
<td>I give priority to study the difficult subjects.</td>
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<td>20.</td>
<td>I read the same subject for a long time</td>
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<tr>
<td>21.</td>
<td>I study only that subject I am interested in and leave out the subject which I find uninteresting</td>
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<tr>
<td>22.</td>
<td>I study with concentration.</td>
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<td>23.</td>
<td>I feel that I don't study at all</td>
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<td>24.</td>
<td>My goes astray when I read</td>
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<td>25.</td>
<td>I understand that I read, but I don't remember it.</td>
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<td>26.</td>
<td>In examination I think of the answers of the questions before I start of writing them</td>
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<tr>
<td>27.</td>
<td>I get nervous at the time of examination</td>
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<td>28.</td>
<td>I read till late at night at the time of examination.</td>
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<td>29.</td>
<td>I read class notes at the time of examination.</td>
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<tr>
<td>30.</td>
<td>I don't study regularly, for I get important questions and suggestions at the time of examination.</td>
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<tr>
<td>31.</td>
<td>I do not prepare questions occurred (asked) at previous examinations thinking that they would not be set again.</td>
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<td>32.</td>
<td>I memorize definitions, maxims, formulas, etc. after understanding them.</td>
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<td>33.</td>
<td>I discuss the subjects read with my friends.</td>
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<td>34.</td>
<td>I read while reclining on a bed.</td>
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<td>35.</td>
<td>I read aloud (loudly)</td>
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<tr>
<td>36.</td>
<td>I try to compare things learned in one subject with those in another.</td>
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<tr>
<td>37.</td>
<td>I ruminative over all things I read.</td>
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<td>38.</td>
<td>Before I start reading new lessons I briefly revise the lesson read.</td>
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<td>39.</td>
<td>After reading one paragraph I at once review it mentally.</td>
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<tr>
<td>40.</td>
<td>I spend my leisure time at school in reading.</td>
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<tr>
<td>41.</td>
<td>I use books from the library.</td>
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<td>42.</td>
<td>I read newspapers and other books too.</td>
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<tr>
<td>43.</td>
<td>I participate in the classroom discussions.</td>
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<td>44.</td>
<td>I answer the questions asked by the teachers while teaching.</td>
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<td>45.</td>
<td>I can not progress in my study due to my dislikes for certain teachers and subjects.</td>
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<td>గుర్తించబడిన సంఖ్యలు</td>
<td>పరిస్థితి</td>
<td>పరిశోధన</td>
<td>పరిశోధన పరిస్థితి</td>
<td>పరిశోధన పరిస్థితి</td>
<td>పరిశోధన పరిస్థితి</td>
<td>పరిశోధన పరిస్థితి</td>
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పరిచయం:

1. ఆ వాటాలను చెపుతానికి తిరిగి పరిచయం చేయాలి. గుర్తించబడిన సంఖ్యలను పట్టించండి మరియు పరిచయం చేయండి.

2. ఆ వాటాలను మీద పరిచయం చేయాలి. గుర్తించబడిన సంఖ్యలను పట్టించండి మరియు పరిచయం చేయండి.

3. ఒక పరిచయం మీద 1, 2, 3, 4 పరిశోధన పరిస్థితులు పరిచయం చేయండి.

4. ఒక పరిచయం మీద 1, 2, 3, 4 పరిశోధన పరిస్థితులు పరిచయం చేయండి మరియు గుర్తించబడిన సంఖ్యలను పట్టించండి.

మార్గం:

| గుర్తించబడిన సంఖ్యలు | పరిచయం | పరిస్థితి | పరిశోధన | పరిశోధన | పరిశోధన | పరిశోధన | పరిశోధన | పరిశోధన |
|---------------------|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1.                  | వాటా లేదా పరిచయం | పరిచయం | పరిచయం | పరిచయం | పరిచయం | పరిచయం | పరిచయం | పరిచయం |

"ఎకైక పరిచయం మీద పరిచయం" అనుమతించేది మాత్రమే. ఇది ఒక పరిచయం మీద పరిచయం చేయడానికి ఎక్కడప్పుడు అనంతనా. ఉదాహరణకు, అది ఒక పరిచయం మీద పరిచయం చేయడానికి ఎక్కడప్పుడు అనంతనా. ఇది ఒక పరిచయం మీద "పరిచయం" అనంతనా ఎక్కడప్పుడు "పరిచయం" పరిచయం చేయడానికి ఎక్కడ అనంతనా. మరాగించండి "............." లేదా. మాట్లాడంటే ఎక్కడ మాట్లాడండి పరిచయం చేయడానికి.
5. తొలగించిన పాఠసమాఖ్య రాబాలిసే తిరిగులు.
6. ప్రభుత్వంపై పాఠసమాఖ్య శాఖ శాస్త్రపాఠిస్తుందనే మతం బట్టుబడి.

శ్రీ

లేదు

1. ఆధిక్య పాఠసమాఖ్య శాఖ దాని కుమ్భాలను కానుకునే సమయం (Time-Table) అధ్యయన చేసిపోయాడు.
2. సరూరాన్ని పాఠసమాఖ్యానికి ముందుమార్పు చేసి నేటి వచ్చిపోయాడు (రసాయనాంకం)
3. నేటి లోని క్రీడలరు ఎక్కడ విని - తరువాత ఉండాలి.
4. క్రీడలు దృశ్యములు ఎంచుకుని దాని కోసం ఎంటిదానిని చేతికి పండించిని / మాదిరి మార్గం (Subjects) విలిన ప్రతి పాఠసమాఖ్యలు.
5. తొలగించిన క్రీడలరు దీనికి తిరిగులు.
6. నేటి గ్రామం, ఆరోధాలు, త్రాగు అర్థం, తూర్పు సామాన్య, నాణ్య రాతిశా没有必要 కుమ్భాల భగ్గి విద్యార్థులు.
7. కొసం రాతిశా有必要 తొలగించిన నేటి ప్రతి నిపుణులు ఉండాలి.
8. నేటి దానిని తెలియవచ్చును పోషణ (Points) ప్రతి నుంచి జాబితా కట్టం. (బాంగ్లాదేశ్)
9. నేటి దానిని తెలియవచ్చును పోషణ (Points) ప్రతి నుంచి జాబితా కట్టం. (Dictionary) నిర్ణయం.
10. నేటి దానిని తెలియవచ్చును పోషణ (Points) ప్రతి నుంచి జాబితా కట్టం.
11. సంతకం కొరకు హిందూ మాలిక మాలిక గ్రామం ని మాలిక నిర్ణయం దానికి ఆంధ్రప్రదేశ్ నిపుణులు ఉండాలి.
12. నేటి దానిని తెలియవచ్చును పోషణ (Points) ప్రతి నుంచి జాబితా కట్టం. (Clarify) నిర్ణయం.
13. నేటి దానిని తెలియవచ్చును పోషణ (Points) ప్రతి నుంచి జాబితా కట్టం. (Sentence)
14. సమాంతరము దానిని తెలియవచ్చును పోషణ (Points) ప్రతి నుంచి జాబితా కట్టం. (Sentence)
15. నేటి దానిని తెలియవచ్చును పోషణ (Points) ప్రతి నుంచి జాబితా కట్టం.
16. నేటి దానిని తెలియవచ్చును పోషణ (Points) ప్రతి నుంచి జాబితా కట్టం.
17. నేటి ఉపాధ్యాయ దానిని తెలియవచ్చును పోషణ (Points) ప్రతి నుంచి జాబితా కట్టం.
18. నేటి ఉపాధ్యాయ దానిని తెలియవచ్చును పోషణ (Points) ప్రతి నుంచి జాబితా కట్టం.
19. సమాంతరము దానిని తెలియవచ్చును పోషణ (Points) ప్రతి నుంచి జాబితా కట్టం.
20. సమాంతరము (Sentence) ప్రతి దానితో పోషణ (Points) ప్రతి జాబితా కట్టం.
21. నేటి దానిని తెలియవచ్చును పోషణ (Points) ప్రతి జాబితా కట్టం. (Sentence)
22. నేటి ఉపాధ్యాయ దాని పోషణ (Points)
23. నేటి ఉపాధ్యాయ దాని పోషణ (Points) (Sentence)
24. నేటి ఉపాధ్యాయ దాని పోషణ (Points) ప్రతి జాబితా కట్టం.
25. ఇది ఒక విషయానుష్ఠానం అవసరం. తద్వార కావచ్చు.
26. ఇది ఒక విషయానుష్ఠానం అవసరం. తద్వార కావచ్చు.
27. ఇది ఒక విషయానుష్ఠానం అవసరం. తద్వార కావచ్చు.
28. ఇది ఒక విషయానుష్ఠానం అవసరం. తద్వార కావచ్చు.
29. ఇది ఒక విషయానుష్ఠానం అవసరం. (Class Notes) అవసరం.
30. ఇది ఒక విషయానుష్ఠానం అవసరం. తద్వార కావచ్చు.
31. ఇది ఒక విషయానుష్ఠానం అవసరం. తద్వార కావచ్చు.
32. ఇది ఒక విషయానుష్ఠానం అవసరం. తద్వార కావచ్చు.
33. ఇది ఒక విషయానుష్ఠానం అవసరం. తద్వార కావచ్చు.
34. ఇది ఒక విషయానుష్ఠానం అవసరం. తద్వార కావచ్చు.
35. ఇది ఒక విషయానుష్ఠానం అవసరం. తద్వార కావచ్చు.
36. ఇది ఒక విషయానుష్ఠానం అవసరం. తద్వార కావచ్చు.
37. ఇది ఒక విషయానుష్ఠానం అవసరం. (Ruminate) అవసరం.
38. ఇది ఒక విషయానుష్ఠానం అవసరం. (Ruminate) అవసరం.
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41. ఇది ఒక విషయానుష్ఠానం అవసరం. (Ruminate) అవసరం.
42. ఇది ఒక విషయానుష్ఠానం అవసరం. (Ruminate) అవసరం.
43. ఇది ఒక విషయానుష్ఠానం అవసరం. (Ruminate) అవసరం.
44. ఇది ఒక విషయానుష్ఠానం అవసరం. (Ruminate) అవసరం.
45. ఇది ఒక విషయానుష్ఠానం అవసరం. (Ruminate) అవసరం.
APPENDIX – M
ANSWER SHEET FOR STUDY HABITS INVENTORY

Name of the Student: ____________________________

Name of the School: ____________________________

Name of the Village/Town: _______________________

**ANSWER SHEET**

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APPENDIX-N
SELF CONCEPT SCALE

Instructions:

Here are given 51 statements. Besides each statement are given five responses (Strongly Agree (SA), Agree (A), Undecided (U), Disagree (DA) and strongly disagree (SDA)). Please read each statement carefully and respond to it by marking a tick (√) against any of five responses given. If you strongly agree with the statement, mark tick (√) against 'SA'; if you only agree with the statement, mark (√) against 'A' and so on.

Example:

SA (√) A ( ) U ( ) DA ( ) SDA ( )

Here the individual X 'strongly agrees' with the statement and therefore has marked (√) for SA.

There is no right or wrong response. Try to give your response according to what you feel about yourself in reference to the statement. Your answers will be kept confidential.

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>DA</th>
<th>SDA</th>
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<tbody>
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<td>1</td>
<td>In general, I believe, I am a fairly worth while person.</td>
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<td>I like and feel pretty good towards myself.</td>
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<td>3</td>
<td>I worry over humiliating situations more than most persons</td>
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<td>4</td>
<td>I can perform my best in a vocation or job against an opponent who is more superior to me</td>
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<td>5</td>
<td>I often feel that my movements are clumsy</td>
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<td>6</td>
<td>I think I have an attractive personality</td>
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<td>7</td>
<td>If given a chance, I could do something that would be of much benefit to the world</td>
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<td>I tend to be quick and certain in my actions</td>
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<td>9</td>
<td>I think of myself as a successful person</td>
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<td>10</td>
<td>At times I am uncharitable to those who love me.</td>
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<td>11</td>
<td>Sometimes I feel depressed for no apparent reason at all</td>
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<td>12</td>
<td>I frequently feel thwarted because I am unable to do, as I desire</td>
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<td>13.</td>
<td>I often feel I get blamed or punished when I don't deserve it.</td>
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<td>14.</td>
<td>I find it hard to continue work when I do not get enough encouragement</td>
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<td>15.</td>
<td>When upset emotionally I take much time to recover.</td>
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<td>16.</td>
<td>I find it hard to do my best when people are watching.</td>
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<td>17.</td>
<td>At times I indulge in false excuses to get out of things</td>
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<td>18.</td>
<td>I prefer not to spend much time dwelling on the past.</td>
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<td>19.</td>
<td>I am unwanted by those, I feel, are important to me.</td>
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<td>20.</td>
<td>I am satisfied to a large extent about my sex matters</td>
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<td>21.</td>
<td>I become upset by criticism even if it is good or meant well</td>
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<td>22.</td>
<td>I look forward to prepare myself to attend what I intended to</td>
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<td>23.</td>
<td>My greatest weakness is that I find difficult to complete my work with out assistance from others</td>
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<td>24.</td>
<td>It is my conviction that people in general tend to grow more conservative after the age of forty</td>
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<td>25.</td>
<td>I am as good as any one else</td>
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<td>26.</td>
<td>If I were young I would try to do the things which I could not do earlier</td>
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<td>27.</td>
<td>The members of my family often take advice and suggestions from me for overall matters</td>
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<td>28.</td>
<td>When things go wrong I pity or blame myself</td>
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<td>29.</td>
<td>I sometimes think or imagine of performing sexual act that may people consider unnatural</td>
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<td>30.</td>
<td>I certainly feel useless at times</td>
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<td>31.</td>
<td>I spend much of the time worrying over the future.</td>
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<td>32.</td>
<td>I find it difficult to control my weight</td>
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<td>33.</td>
<td>I can always hear and see things as well as most other people</td>
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<td>34.</td>
<td>Friends don't invite me out as often as I would really like</td>
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<p>| | |</p>
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<tr>
<td><strong>35.</strong></td>
<td>At times I brag about my qualities before others</td>
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<td><strong>36.</strong></td>
<td>I am fairly able to recall the significant events of my early childhood</td>
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<tr>
<td><strong>37.</strong></td>
<td>I can recover easily and quickly from social blunders</td>
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<tr>
<td><strong>38.</strong></td>
<td>I frequently fail to recollect several things, which I am to do</td>
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<td><strong>39.</strong></td>
<td>I have several times given up doing a thing because I thought to little of my ability</td>
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<td><strong>40.</strong></td>
<td>I see it is a bad mistake to spend most of my time worrying for the future, instead I prefer to try to find some pleasure in every present moment.</td>
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<tr>
<td><strong>41.</strong></td>
<td>I am often in low spirit</td>
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<td><strong>42.</strong></td>
<td>It is very important to me to feel that what I am doing is very worthwhile or meaningful.</td>
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<tr>
<td><strong>43.</strong></td>
<td>I enjoy mixing with people</td>
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<td><strong>44.</strong></td>
<td>I can tackle new situations with reasonable degrees of assurance</td>
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<td><strong>45.</strong></td>
<td>At times I feel a painful sense of loneliness and want very much to share an experience with some one else</td>
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<tr>
<td><strong>46.</strong></td>
<td>I can almost always go to sleep at night without any difficulty</td>
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<tr>
<td><strong>47.</strong></td>
<td>When luck turns against me I pray God to make it in favour of me</td>
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<td><strong>48.</strong></td>
<td>Sometimes I would become a respectable person of Society</td>
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<td><strong>49.</strong></td>
<td>I believe that every one feels responsible himself for what he does.</td>
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<tr>
<td><strong>50.</strong></td>
<td>I deserve severe punishment for my sins.</td>
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<tr>
<td><strong>51.</strong></td>
<td>I usually prefer to do things in tried way rather than experimenting new and different ways.</td>
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</tbody>
</table>
APPENDIX - 0

SELF CONCEPT SCALE

Instructions: Mark one of the following statements that best describes your current opinion.

1. I feel quite inferior among the group
2. I feel quite superior among the group
3. My self-esteem is stable
4. My self-esteem is quite unstable
5. My self-esteem is quite unstable

1. I feel quite inferior among the group (SA)
2. I feel quite superior among the group (A)
3. My self-esteem is stable (U)
4. My self-esteem is quite unstable (DA)
5. My self-esteem is quite unstable (SDA)

Please mark one of the above statements that best describes your current opinion.
39) కొనసాగి మంచి చేసిన కాలు నిర్ధారించాలంటే మనం ఎంతవారి ఇచ్చిన పంపించాలని ప్రకారం పట్టించాలంటే
40) హస్తాకాశు కాలు అనేది పండితుల కొలువుల ప్రఖ్యాత కాలు ః అప్పుడు మనం
పరిశీలించాలంటే నిర్ధారించాలంటే కాలు అప్పుడు అప్పుడు
41) నిర్ధారించాలంటే కాలు అప్పుడు అప్పుడు
42) నిర్ధారించాలంటే మనం కాలు నిర్ధారించాలంటే కాలు అప్పుడు అప్పుడు
43) నిర్ధారించాలంటే మనం నిర్ధారించాలంటే అప్పుడు అప్పుడు
44) నిర్ధారించాలంటే మనం నిర్ధారించాలంటే అప్పుడు అప్పుడు
45) మనం నిర్ధారించాలంటే మనం నిర్ధారించాలంటే అప్పుడు అప్పుడు అప్పుడు అప్పుడు
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APPENDIX – P
SELF CONCEPT SCALE – ANSWER SHEET

Name of the Student: 

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SA = Strongly Agree, A = Agree, U = Undecided, D = Disagree,
SD= Strongly Disagree
APPENDIX - Q
Sri Venkateswara University – Depart of Education
Socio – Demographic Scale (PERNALDATA SHEET)

**Personal Characteristics**

1. Name
2. Name of the School
3. Age
4. Annual Income of the Family
5. Education of the Father
6. Occupation of Father
7. Mother’s Education
8. Mother’s Occupation
9. Number of Children for your Parents
10. Birth Order
11. Number of members in the family

Put a tick (✓) mark for the appropriate among the items given below

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<tbody>
<tr>
<td>12.</td>
<td>Sex : Male / Female</td>
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<tr>
<td>13.</td>
<td>Religion : Hindu/Muslim/Christian</td>
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<td>15.</td>
<td>Native Place : Town/Municipal Town/Small Town/Village</td>
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<tr>
<td>16.</td>
<td>Economic Status : Rich/Middle Class/Poor</td>
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</table>

**Facilities for study at home**

1. Do you have a separate study room in your house : Yes/No
2. Number study hours daily at Home : (a) Above three hours (b) Between two and three hours (c) Between one and two hours (d) less than one hour
3. Do you have any help at home towards mathematics? (a) To the maximum extent (b) to some extent (c) No any help
4. Do you have any other works at home : Yes/No
5. The time spent daily for mathematics working : (a) Above three hours (b) Above two hours and upto three hours (c) Between one and two hours (d) Less than one hour
## APPENDIX - R

### Socio-Demographic Scale

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
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<tbody>
<tr>
<td>1. How many members live in your household?</td>
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<tr>
<td>2. Age of the head of the household</td>
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<tr>
<td>3. Marital status</td>
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<td>4. Region of the household</td>
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<td>5. Highest qualification of the head of the household</td>
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<td>6. Occupation of the head of the household</td>
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<td>7. Religion</td>
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<td>8. Landhold ownership</td>
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<td>9. Town / Village</td>
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<td>10. Additional information</td>
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### Additional Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
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<tbody>
<tr>
<td>1. Are you satisfied with your current job?</td>
<td>Yes / No</td>
</tr>
<tr>
<td>2. How many years have you been working?</td>
<td></td>
</tr>
<tr>
<td>3. Do you feel that your job provides you with financial stability?</td>
<td>Yes / No</td>
</tr>
<tr>
<td>4. Would you consider changing your job for a better financial stability?</td>
<td>Yes / No</td>
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<tr>
<td>5. Have you ever been unemployed?</td>
<td>Yes / No</td>
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</table>