

**Numerical Ability MCQ Pdf for AFCAT 1 2023**

**Q1.** The value of  $6\frac{1}{5} - \left[4\frac{1}{2} - \left\{\frac{5}{6} - \left(\frac{3}{5} + \frac{3}{10} - \frac{7}{15}\right)\right\}\right]$  is:

- (a) 2.5
- (b) 1.8
- (c) 2.1
- (d) 2.8

**Q2.**  $\frac{17}{30} + \left[3\frac{1}{5} - \left\{\frac{5}{6} - \left(3\frac{4}{5} \div 9\frac{1}{2}\right)\right\}\right]$  is equal to:

- (a)  $\frac{3}{5}$
- (b)  $\frac{1}{5}$
- (c)  $\frac{11}{3}$
- (d)  $\frac{10}{3}$

**Q3.** The value of  $\frac{1}{3} \div \frac{5}{6} \times \frac{-5}{8}$  is equal to :

- (a) 0
- (b)  $\frac{1}{4}$
- (c)  $-\frac{1}{4}$
- (d) 1

**Q4.** The value of  $3 \times 3 - [6 - \{12 + 15 \div (7 - 2)\}]$  is equal to:

- (a) 18
- (b) 0
- (c) 15
- (d) -15

**Q5.**  $7 - \{4 \times 3 - (-10) \times 8 \div (-4)\}$  is equal to:

- (a) -1
- (b) 53
- (c) 0
- (d) 15

**Q6.**  $\frac{3}{5} \times 4 \left[7 - \left\{\frac{2}{5} \times (13 + 2)\right\}\right]$  is equal to:

- (a)  $2\frac{2}{5}$
- (b)  $\frac{1}{5}$
- (c) 1
- (d) 0

**Q7.**  $\sqrt{4 + \sqrt{144}}$  is equal to:

- (a) 3.74
- (b) 14
- (c) 12.17
- (d) 4

**Q8.**  $(-4) \times (-8) \div (-2) + 3 \times 5$  is equal to:

- (a) -1
- (b) 1
- (c) 31
- (d) -31

**Q9.**  $\frac{3}{4} + \frac{5}{2} \left[\frac{1}{4} \times \left(\frac{8}{5} - \frac{4}{3}\right)\right]$  is equal to:

- (a)  $\frac{13}{24}$
- (b)  $\frac{3}{4}$
- (c)  $\frac{1}{4}$
- (d)  $\frac{11}{12}$

**Q10.**  $13 \div \{4 \text{ of } 2 - 3 + 4 \times (6 - 4)\}$  is equal to:

- (a)  $-2\frac{1}{13}$
- (b) 1
- (c) 0
- (d) 13



**Q11.**  $\frac{675 \times 675 \times 675 + 325 \times 325 \times 325}{67.5 \times 67.5 + 32.5 \times 32.5 - 67.5 \times 32.5}$  is equal to

- (a) 100
- (b) 10,000
- (c) 1,000
- (d) 1,00,000

**Q12.**  $9\frac{3}{4} \div \left[ 2\frac{1}{6} + \left\{ 4\frac{1}{3} - \left( 2\frac{1}{2} + \frac{3}{4} \right) \right\} \right]$  is equal to

- (a) 3
- (b) 15/4
- (c) 4
- (d) 17/4

**Q13.**  $4\frac{4}{5} \div \frac{3}{7}$  of  $7 + \frac{4}{5} \times \frac{3}{10} - \frac{1}{5}$  is equal to

- (a)  $\frac{7}{5}$
- (b)  $\frac{8}{5}$
- (c)  $\frac{34}{25}$
- (d)  $\frac{41}{25}$

**Q14.**  $\frac{5.75 \times 5.75 \times 5.75 + 3.25 \times 3.25 \times 3.25}{57.5 \times 57.5 + 32.5 \times 32.5 - 57.5 \times 32.5}$  is equal to

- (a) 0.009
- (b) 0.0009
- (c) 0.9
- (d) 0.09

**Q15.**  $5\frac{5}{6} + \left[ 2\frac{2}{3} - \left\{ 3\frac{3}{4} \left( 3\frac{4}{5} \div 9\frac{1}{2} \right) \right\} \right]$  is equal to

- (a)  $\frac{44}{7}$
- (b) 7
- (c)  $\frac{43}{6}$
- (d)  $\frac{22}{3}$

**Q16.** The value of  $3\frac{1}{5} - \left[ 2\frac{1}{2} - \left\{ \frac{5}{6} - \left( \frac{2}{5} + \frac{3}{10} - \frac{4}{15} \right) \right\} \right]$  is

- (a)  $\frac{6}{5}$
- (b)  $\frac{9}{10}$
- (c)  $\frac{11}{10}$
- (d)  $\frac{13}{5}$

**Q17.**  $\frac{6.75 \times 6.75 \times 6.75 - 4.25 \times 4.25 \times 4.25}{67.5 \times 67.5 + 42.5 \times 42.5 + 67.5 \times 42.5}$  is equal to:

- (a) 2.5
- (b) 0.25
- (c) 0.0025
- (d) 0.025

**Q18.**  $5\frac{1}{5} - \left[ 3\frac{1}{2} - \left\{ \frac{5}{6} - \left( \frac{3}{5} + \frac{1}{10} - \frac{4}{15} \right) \right\} \right]$  is equal to:

- (a)  $\frac{21}{10}$
- (b)  $\frac{7}{5}$
- (c)  $\frac{7}{3}$
- (d)  $\frac{8}{3}$

**Q19.** The value of  $3\frac{5}{6} + \left[ 3\frac{2}{3} - \left\{ \frac{15}{4} \left( 5\frac{4}{5} \div 14\frac{1}{2} \right) \right\} \right]$  is equal to:

- (a)  $\frac{37}{6}$
- (b)  $\frac{35}{6}$
- (c) 6
- (d)  $\frac{19}{3}$

**Q20.**  $\frac{63.5 \times 63.5 \times 63.5 + 36.5 \times 36.5 \times 36.5}{6.35 \times 6.35 + 3.65 \times 3.65 - 6.35 \times 3.65}$  is equal to :

- (a) 10,000
- (b) 1,00,000
- (c) 100
- (d) 1,000

**Q21.**  $10 - \{ 17 - 12 \div (5 + 9 \times 2 - 17) \}$  is equal to:

- (a) - 5
- (b) 7
- (c) 5
- (d) 7

**Q22.**  $\frac{14 - 6 \times 2}{15 \div 3 + 3}$  is equal to :

- (a)  $\frac{1}{4}$
- (b) 2
- (c)  $\frac{4}{5}$
- (d)  $6\frac{2}{5}$

**Q23.**  $(24 \div 6 - 2) + (3 \times 2 + 4)$  is equal to:

- (a) 24
- (b) 16
- (c) 20
- (d) 12

**Q24.**  $15 - \{5 + 24 \div (3 \times 9 - 15)\}$  is equal to:

- (a)  $-2$
- (b)  $11\frac{1}{3}$
- (c)  $6\frac{1}{4}$
- (d)  $8$

**Q25.**  $(-4) \times \{1020 \div 85 \times 3 - 22\}$  is equal to:

- (a) -402
- (b) -56
- (c) 912
- (d) 72

**Q26.** If  $A = (\sqrt{71} - \sqrt{69}) / (\sqrt{71} + \sqrt{69})$ , then what is the value of  $1/A$ ?

- (a)  $70 - \sqrt{71}$
- (b)  $70 + 3\sqrt{1633}$
- (c)  $140 + 2\sqrt{4899}$
- (d)  $70 + \sqrt{4899}$

**Q27.** Simplify,  $6 \div \frac{1}{6}$  of  $12 + 4 \times (\frac{1}{72}$  of  $144 \div 2)$  of 16

- (a) 128
- (b) 64
- (c) 67
- (d) 134

**Q28.**  $5\frac{5}{6} + [2\frac{2}{3} - \{3\frac{3}{4}(3\frac{4}{5} \div 9\frac{1}{2})\}]$  is equals to:

- (a) 7
- (b)  $44/7$
- (c)  $43/6$
- (d)  $22/3$

**Q29.**  $\frac{72.5 \times 72.5 \times 72.5 + 27.5 \times 27.5 \times 27.5}{7.25 \times 7.25 + 2.75 \times 2.75 - 7.25 \times 2.75}$  is equal to:

- (a) 10,000
- (b) 1000
- (c) 10
- (d) 100000

**Q30.** The value of  $6\frac{1}{5} - [4\frac{1}{2} - \{\frac{5}{6} - (\frac{3}{5} + \frac{3}{10} - \frac{7}{15})\}]$  is:

- (a) 2.5
- (b) 1.8
- (c) 2.8
- (d) 2.1

**Q31.** The square root of which of the following is a rational number?

- (a) 1250.49
- (b) 6250.49
- (c) 1354.24
- (d) 5768.28

**Q32.** What is the sum of digits of the least number, which when divided by 15, 18 and 24 leaves the remainder 8 in each case and is also divisible by 13?

- (a) 17
- (b) 16
- (c) 15
- (d) 18



**Q33.** If the six digit number  $4x4y96$  is divisible by 88, then what will be the value of  $(x + 2y)$ .

- (a) 13
- (b) 10
- (c) 12
- (d) 11

**Q34.** The square root of which of the following is a rational number?

- (a) 5823.82
- (b) 22504.9
- (c) 2460.14
- (d) 1489.96

**Q35.** What is the sum of the digits of the least number, which when divided by 12, 16 and 54, leaves the same remainder 7 in each case, and is also completely divisible by 13?

- (a) 36
- (b) 16
- (c) 9
- (d) 27

**Q36.** If the seven digit number  $74x29y6$  is divisible by 72, then what will be the value of  $(2x + 3y)$ ?

- (a) 20
- (b) 21
- (c) 19
- (d) 16

**Q37.** If the seven digit number  $56x34y4$  is divisible by 72, then what is the least value of  $(x + y)$ ?

- (a) 8
- (b) 12
- (c) 5
- (d) 14

**Q38.** The Square root of which of the following is a rational number?

- (a) 2361.96
- (b) 2758.28
- (c) 72568.4
- (d) 62504.9

**Q39.** What is the sum of the digits of the least number, which when divided by 15, 15 and 27 leaves the same remainder 9 in each case and is also completely divisible by 11?

- (a) 20
- (b) 17
- (c) 18
- (d) 19

**Q40.** If the seven digit number  $3x6349y$  is divisible by 88, then what will be the value of  $(2x + 3y)$  ?

- (a) 32
- (b) 30
- (c) 28
- (d) 35

## SOLUTIONS

**S1. Ans.(c)**

**Sol.**

$$\begin{aligned} & \frac{31}{5} - \left[ \frac{9}{2} - \left\{ \frac{5}{6} - \frac{13}{30} \right\} \right] \\ & \Rightarrow \frac{31}{5} - \left[ \frac{9}{2} - \frac{12}{30} \right] \\ & \Rightarrow \frac{31}{5} - \frac{123}{30} \\ & \Rightarrow \frac{63}{30} \\ & = 2.1 \end{aligned}$$

**S2. Ans.(d)**

**Sol.**

$$\begin{aligned} & \frac{17}{30} + \left[ \frac{16}{5} - \left\{ \frac{5}{6} - \frac{2}{5} \right\} \right] \\ & \Rightarrow \frac{17}{30} + \left[ \frac{16}{5} - \frac{13}{30} \right] \\ & \Rightarrow \frac{17}{30} + \frac{83}{30} \\ & \Rightarrow \frac{100}{30} = \frac{10}{3} \end{aligned}$$

**S3. Ans.(c)**

**Sol.**  

$$\frac{1}{3} \times \frac{6}{5} \times \frac{-5}{8}$$

$$= \frac{-1}{4}$$

**S4. Ans.(a)**

**Sol.**  

$$9 - \left[ 6 - \left\{ 12 + \frac{15}{5} \right\} \right]$$

$$= 9 - [6 - 15]$$

$$= 9 + 9 = 18.$$

**S5. Ans.(d)**

**Sol.**  

$$7 - \left\{ 4 \times 3 + \frac{10 \times 8}{(-4)} \right\}$$

$$= 7 - \{12 - 20\}$$

$$= 7 + 8 = 15$$

**S6. Ans.(a)**

**Sol.**  

$$\frac{3}{5} \times 4 \left[ 7 - \left( \frac{2}{5} \times 15 \right) \right]$$

$$= \frac{3}{5} \times 4 [7 - 6]$$

$$= 2 \frac{2}{5}$$

**S7. Ans.(d)**

**Sol.**  

$$\sqrt{4 + \sqrt{144}} = \sqrt{4 + 12} = \sqrt{16} = 4$$

**S8. Ans.(a)**

**Sol.**  

$$(-4) \times (-8) \div (-2) + 3 \times 5$$

$$= -16 + 15$$

$$= -1$$

**S9. Ans.(d)**

**Sol.**  

$$\Rightarrow \frac{3}{4} + \frac{5}{2} \left[ \frac{1}{4} \times \frac{4}{15} \right]$$

$$\Rightarrow \frac{3}{4} + \frac{5}{2} \times \frac{1}{15}$$

$$= \frac{3}{4} + \frac{1}{6} = \frac{11}{12}$$

**S10. Ans.(b)**

**Sol.**  

$$= 13 \div \{4 \times 2 - 3 + 4(6-4)\}$$

$$= 13 \div \{8 - 3 + 8\}$$

$$= 13 \div 13$$

$$= 1$$

**S11. Ans.(d)**

**Sol.**  

$$\frac{a^3 + b^3}{a^2 + b^2 - ab} = (a + b)$$

$$100 (675 + 325) = 100000$$

**S12. Ans.(a)**

**Sol.**  

$$\frac{39}{4} \div \left[ \frac{13}{6} + \left\{ \frac{13}{3} - \left( \frac{5}{2} + \frac{3}{4} \right) \right\} \right]$$

$$= \frac{39}{4} \div \left[ \frac{13}{6} + \frac{13}{12} \right]$$

$$= 3$$

**S13. Ans.(d)**

**Sol.**  

$$\frac{24}{5} \div \frac{3}{7} \text{ of } 7 + \frac{4}{5} \times \frac{3}{10} - \frac{1}{5}$$

$$= \frac{24}{5} \times \frac{1}{3} + \frac{4}{5} \times \frac{3}{10} - \frac{1}{5}$$

$$\Rightarrow \frac{8}{5} + \frac{6}{25} - \frac{1}{5}$$

$$= \frac{41}{25}$$

**S14. Ans.(d)**

**Sol.**  

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

$$a + b = 5.75 + 3.25 = 9.00$$

$$= \frac{5.75 \times 5.75 \times 5.75 + 3.25 \times 3.25 \times 3.25}{57.5 \times 57.5 + 32.5 \times 32.5 - 57.5 \times 32.5}$$

$$= 0.09$$

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**S15. Ans.(b)**

**Sol.**

$$\begin{aligned} & 5\frac{5}{6} + \left[ 2\frac{2}{3} - \left\{ 3\frac{3}{4} \left( \frac{19}{5} \times \frac{2}{19} \right) \right\} \right] \\ & \frac{35}{6} + \left[ \frac{8}{3} - \left\{ \frac{15}{4} \times \frac{2}{5} \right\} \right] \\ & \frac{35}{6} + \left[ \frac{8}{3} - \frac{3}{2} \right] \\ & \frac{35}{6} + \frac{7}{6} = \frac{42}{6} = 7 \end{aligned}$$

**S16. Ans.(c)**

**Sol.**

$$\begin{aligned} & \frac{16}{5} - \left[ \frac{5}{2} - \left\{ \frac{5}{6} - \left( \frac{12+9-8}{30} \right) \right\} \right] \\ & \frac{16}{5} - \left[ \frac{5}{2} - \left\{ \frac{5}{6} - \frac{13}{30} \right\} \right] \\ & \frac{16}{5} - \left[ \frac{5}{2} - \frac{12}{30} \right] \\ & \frac{16}{5} - \frac{63}{30} = \frac{33}{30} = \frac{11}{10} \end{aligned}$$

**S17. Ans.(d)**

**Sol.**

$$\begin{aligned} & \frac{a^3 - b^3}{a^2 + b^2 + ab} = (a - b) \\ & = \frac{2.5}{100} = 0.025 \end{aligned}$$

**S18. Ans.(a)**

**Sol.**

$$\begin{aligned} & = \frac{26}{5} - \left[ \frac{7}{2} - \left\{ \frac{5}{6} - \frac{13}{30} \right\} \right] \\ & = \frac{26}{5} - \left[ \frac{7}{2} - \frac{6}{15} \right] \\ & \frac{26}{5} - \frac{31}{10} \\ & = \frac{21}{10} \end{aligned}$$

**S19. Ans.(c)**

**Sol.**

$$\begin{aligned} & \Rightarrow \frac{26}{3} + \left[ \frac{11}{3} - \left\{ \frac{15}{4} \left( \frac{29}{5} \times \frac{2}{29} \right) \right\} \right] \\ & \Rightarrow \frac{23}{6} + \left[ \frac{11}{3} - \frac{3}{2} \right] \\ & \Rightarrow \frac{23}{6} + \frac{13}{6} \\ & \Rightarrow \frac{36}{6} = 6 \end{aligned}$$

**S20. Ans.(d)**

**Sol.**

$$\begin{aligned} & \frac{63.5 \times 63.5 \times 63.5 + 36.5 \times 36.5 \times 36.5}{6.35 \times 6.35 + 3.65 \times 3.65 - 6.35 \times 3.65} \\ & a^3 + b^3 = a + b(a^2 + b^2 - ab) \\ & = \frac{1}{\frac{1000}{10000}} (635 + 365) \\ & = 10 \times 1000 \\ & = 10000 \end{aligned}$$

**S21. Ans.(a)**

**Sol.**  $10 - \{17 - 12 \div (5 + 1)\}$

$$10 - \{17 - 12 \div 6\}$$

$$10 - \{17 - 2\}$$

$$10 - 15 = -5$$

**S22. Ans.(a)**

**Sol.**

$$\frac{14 - 12}{5 + 3} = \frac{2}{8} = \frac{1}{4}$$

**S23. Ans.(d)**

**Sol.**

$$\begin{aligned} & \left( \frac{24}{6} - 2 \right) + (6 + 4) \\ & 2 + 10 = 12. \end{aligned}$$

**S24. Ans.(d)**

**Sol.**

$$\begin{aligned} & 15 - \{5 + 24 \div (3 \times 9 - 15)\} \\ & 15 - \left\{ 5 + \frac{24}{12} \right\} \\ & 15 - 7 \\ & = 8 \end{aligned}$$

**S25. Ans.(b)**

**Sol.**

$$\begin{aligned} & -4 \times \left( \frac{1020}{85} \times 3 - 22 \right) \\ & -4 \times (36 - 22) \\ & -4 \times (+14) \\ & = -56 \end{aligned}$$

**S26. Ans.(d)**

**Sol.**

$$\frac{1}{A} = \frac{\sqrt{71} + \sqrt{69}}{\sqrt{71} - \sqrt{69}} \times \frac{\sqrt{71} + \sqrt{69}}{\sqrt{71} + \sqrt{69}}$$

$$= 70 + \sqrt{4899}$$

**S27. Ans.(c)**

**Sol.**

$$= 6 \div 2 + 4 \times (1) \times 16$$

$$= 3 + 64$$

$$= 67$$

**S28. Ans.(a)**

**Sol.**

$$\frac{35}{6} + \left[ \frac{8}{3} - \left\{ \frac{15}{4} \times \frac{19}{5} \times \frac{2}{19} \right\} \right]$$

$$\frac{35}{6} + \frac{8}{3} - \frac{3}{2}$$

$$\frac{35 + 16 - 9}{6} = \frac{42}{6} = 7$$

**S29. Ans.(a)**

**Sol.**

$$100 \left( \frac{(72.5)^3 + (27.5)^3}{(72.5)^2 + (27.5)^2 - (72.5)(27.5)} \right)$$

$$100 (100) \Rightarrow 10,000$$

**S30. Ans.(d)**

**Sol.**

$$\frac{31}{5} - \left[ \frac{9}{2} - \left\{ \frac{5}{6} - \left( \frac{13}{30} \right) \right\} \right]$$

$$= \frac{31}{5} \left[ \frac{9}{2} - \frac{12}{30} \right]$$

$$= \frac{31}{5} - \frac{123}{30}$$

$$= \frac{63}{30}$$

$$= 2.1$$

**S31. Ans.(c)**

**Sol.**

$$\sqrt{1354.24}$$

$$= 36.8$$

**S32. Ans.(a)**

**Sol.**

$$\text{LCM of } (15, 18, 24) = 360$$

ATQ

$$\frac{360k+8}{13} = 368$$

Put k = 1, 2, 3, .....

K = 2 is divisible by 13

$$\text{Number} = 360 \times 2 + 8 = 728$$

$$\text{Sum of digits} = 7 + 2 + 8 = 17$$

**S33. Ans.(a)**

**Sol.**

$$4 \times 4 \times 96$$

No. divisible by 88 is also divisible by 8 and 11 divisibility Rule for 8 = last three digit divide by 8.

Divisibility rule for 11 = sum of alternate digit are equal.

$$4 + 4 + 9 = x + y + 6$$

$$17 - 6 = x + y$$

$$x + y = 11$$

$$\frac{y^96}{8} \Rightarrow y = 2$$

$$x = 9$$

$$x + 2y = 3$$

**S34. Ans.(d)**

**Sol.**

$$\sqrt{1489.96}$$

$$= 38.6$$

**S35. Ans.(b)**

**Sol.**

$$\text{LCM of } 12, 16, 54 = 432$$

$$432K + 7$$

$$K = 2$$

$$864 + 7 = 871$$

871 is the no. which leave remainder 7 when divided by 12, 16, 54.

and it is also divided by 13.

$$\text{Sum of digits} = 8 + 7 + 1 = 16$$

**S36. Ans.(c)**

**Sol.**

if A no. divisible by 72 is also divisible by 9 & 8.

$$74 \times 29y6$$

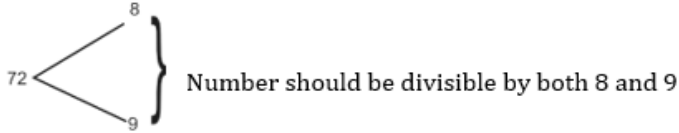
$$x = 5 \quad y = 3$$

$$(2 \times 5 + 3 \times 3) = 19$$



**S37. Ans.(c)**

**Sol.**



$$56 \times 34y4$$

To be divisible by 8, y should be 2

to be divisible by 9, x should be 3

$$\text{So, } x+y = 2+3=5$$

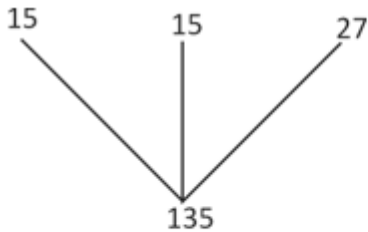
**S38. Ans.(a)**

**Sol.**

$$\frac{\sqrt{236196}}{\sqrt{100}} = \frac{486}{10}$$

**S39. Ans.(c)**

**Sol.**



135K+9 should be divisible by 11 so put k = 8

$$\text{Number is} = 135 \times 8 + 9 = 1089$$

$$\text{Reg sum is} = 1+0+8+9=18$$

**S40. Ans.(a)**

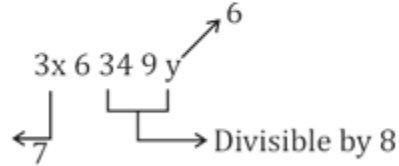
**Sol.**

Rule of divisibility by 8

Last three digits divide completely by 8

Rule of divisibility by 11

Sum of alternate digit of no. is equal.



$$= 2 \times 7 + 3 \times 6$$

$$= 14 + 18 = 32$$



**Adda247**