Quantitative Ability MCQ Pdf for AFCAT 1 2023

Q1. The number 106974 is divisible by which of the single digit numbers:
(a) 2, 3, 6 and 7 only
(b) 2, 3 and 7 only
(c) 2, 3 and 4 only
(d) 2 and 3 only

Q2. The face value of the digit 6 in 16008 is:
(a) 6
(b) 600
(c) 6000
(d) 60

Q3. The smallest number that should be added to 8212 to obtain a perfect square is:
(a) 123
(b) 69
(c) 54
(d) 112

Q4. On dividing a number by 38, the quotient is 24 and the remainder is 13, the number is:
(a) 956
(b) 904
(c) 925
(d) 975

Q5. The students of a class donated Rs.3,481 towards relief. Each student donated an amount equal to the number of students in the class. The number of students in the class is:
(a) 49
(b) 59
(c) 61
(d) 51

Q6. The number 45789 is divisible by which of the single digit numbers:
(a) Only by 9
(b) Only by 3 and 9
(c) Only by 3
(d) Only by 3 nad 7

Q7. 210102 can be divided exactly by:
(a) 7
(b) 3
(c) 4
(d) 8

Q8. A gardener planted 1936 samplings in a garden such that there were as many rows of saplings as the columns. The number of rows planted is:
(a) 46
(b) 44
(c) 48
(d) 42

Q9. Which least number should be added to 1000 so that the number obtained is exactly divisible by 37?
(a) 1
(b) 25
(c) 36
(d) 13

Q10. If a nine digit number 985x3678y is divisible by 72, find the value of x + y
(a) 4
(b) 8
(c) –2
(d) 6

Q11. What is the sum of digits of the least number, which when divided by 15, 18 and 42 leaves the same remainder 8 in each case and is also divisible by 13?
(a) 25
(b) 24
(c) 22
(d) 26

Q12. The square root which of the following is a rational number?
(a) 5535.36
(b) 3152.88
(c) 72905.2
(d) 67508.5

Q13. The number 23474 is exactly divisible by:
(a) 2 and 4 only
(b) 2 and 11only
(c) 2 and 3 only
(d) 2 only

Q14. The sum of all possible three digit numbers formed by digits 3, 0 and 7, using each digit only once is :
(a) 2220
(b) 1990
(c) 2110
(d) 2010

Q15. To what power -3 should be raised to get -2187?
(a) -7
(b) -5
(c) 5
(d) 7

Q16. The number 30744 is divisible by which of the single digit numbers:
(a) All numbers except 5 and 7
(b) Only by 2, 3, 6 and 9
(c) Only by 2, 3 and 6
(d) All numbers except 5

Q17. What is the difference between the greatest four digit and the smallest four digit number using the digits 2, 9, 6 and 5 (each digit can be used only once)?
(a) 6993
(b) 7056
(c) 6606
(d) 7083

Q18. The number 66249 is divisible by which of the single digit numbers:
(a) Only by 3 and 9
(b) Only by 3 and 7
(c) Only by 9
(d) Only by 3

Q19. The least number that should be added to 10000 so that it is exactly divisible by 327 is:
(a) 327
(b) 237
(c) 137
(d) 190

Q20. The cube root of 3375 is equal to:
(a) 35
(b) 25
(c) 55
(d) 15

Q21. If A, B and C, share profit in the ratio of 4 : 5 : 9. If the profit for the year before charging 20% tax is 141642 Rs. What is B's share of profit (in Rs) after tax?
(a) 30476.2
(b) 31478.3
(c) 31476.0
(d) 31478.0

Q22. Rs 600 are divided among A, B and C so that Rs 40 more than 2/5 of A's share, Rs 20 more than 2/7 of B's share and Rs 10 more than 9/17 of C's share are all equal. A's share is
(a) Rs 180
(b) Rs 160
(c) Rs 150
(d) Rs 140

Q23. The ratio of the first and second class trains fares between two stations is 3 : 1 and that of the numbers of passengers travelling between the two stations by first and second classes is 1 : 50. If on a particular day, Rs 1,325 are collected from passengers travelling between the two stations, then the amount collected from the second classes passengers is
(a) Rs 1,250
(b) Rs 1,000
(c) Rs 850
(d) Rs 750

Q24. A man leaves Rs 8,600 to be divided among 5 sons, 4 daughters and 2 nephews. If each daughter receives four times as much as each nephew, and each son receives five times as much as each nephew, how much does each daughter receive?
(a) Rs 100
(b) Rs 600
(c) Rs 800
(d) Rs 1,000

Q25. The ratio of number of flowers in 2 bags A and B is 7: 9. 13 Flowers are taken from bag B and put into A. The numbers of flowers in each bag are now equal.Find the number of flowerinitially in bag A?
(a) 91
(b) 117
(c) 78
(d)65

Q26. What is the mean proportional of 80 and 405.
(a) 145
(b) 270
(c) 180
(d) 360

Q27. A sum of money is divided among A, B and C in The ratio of 11: 15: 17 if C gets 2166rs more then B. then find total amount.
(a) 46500
(b) 46567
(c) 45569
(d) 46569

Q28. Fresh fruit contains 68% water and dry fruit contains 20% water. How much dry fruit can be obtained from 100 kg of fresh fruits?
(a) 80
(b) 60
(c) 40
(d) 20

Q29. If x is subtracted from each of 23, 39, 32 and 56, the numbers so obtained, in this order, are in proportion. What is the mean proportional between $(x + 4)$ and $(3x + 1)$?
(a) 15
(b) 10
(c) 12
(d) 14

Q30. If x is added to each of 12, 28, 21 and 45, the numbers so obtained, in this order, are in proportion. What is the mean proportional between $(x + 3)$ and $(4x + 1)$?
(a) 15
(b) 18
(c) 10
(d) 12

Q31. What is the weighted mean of first 10 natural numbers whose weights are equal to the corresponding number?
(a) 7
(b) 5.5
(c) 5
(d) 4.5

Q32. The arithmetic mean of 10 numbers was computed as 7.6. It was later discovered that a number 8 was wrongly read as 3 during the computation. What should be the correct mean ?
(a) 7.1
(b) 7.6
(c) 8.1
(d) 8.6

Q33. The mean weight of 150 students in a class is 60 kg. The mean weight of boys is 70 kg and that of girls is 55 kg. What is the number of boys in the class?
(a) 50
(b) 60
(c) 75
(d) 100

Q34. The mean of 100 values is 45. If 15 is added to each of the first forty values and 5 is subtracted from each of the remaining sixty values, the new mean becomes :
(a) 45
(b) 48
(c) 51
(d) 55

Q35. There are 45 male and 15 female employees in an office. If the mean salary of the 60 employees is Rs. 4,800 and the mean salary of the male employees is Rs. 5,000, then the mean salary of the female employees is
(a) Rs. 4,200
(b) Rs. 4,500
(c) Rs. 5,600
(d) Rs. 6,000

Q36. The mean of 7 observations is 7. If each observation is increased by 2, then the new mean is
(a) 12
(b) 10
(c) 9
(d) 8

Q37. The average weight of a class of 15 boys and 10 girls is 38.4 kg. If the average weight of the boys is 40 kg, then what is the average weight of the girls?
(a) 36.5 kg
(b) 35 kg
(c) 36 kg
(d) 35.6 kg

Q38. The average of u, v, w, x, y, z is 10. What is the average of u +10, v+20, w+30, x+40, y+50, z+60?
(a) 30
(b) 35
(c) 40
(d) 45

Q39. The average age of male employees in a firm is 52 years and that of female employees is 42 years. The mean age of all employees is 50 years. The percentage of male and female employees are respectively
(a) 80% and 20%
(b) 20% and 80%
(c) 50% and 50%
(d) 52% and 48%

Q40. If the average of A and B is 30, the average of C and D is 20, then which of the following is/are correct?
1. The average of B and C must be greater than 25.
2. The average of A and D must be less than 25.
Select the correct answer using the code given below:
(a) 1 only
(b) 2 only
(c) Either 1 or 2
(d) Neither 1 nor 2 // Navik 1

Q41. The average temperature for a week was 30 °C. If the average temperature for first four days of the week was 31 °C, then the average temperature for the remaining days of the week is:
(a) 29.33 °C
(b) 28.5 °C
(c) 28.67 °C
(d) 29 °C

Q42. A scored 73, 76, 20, and 7 runs in four out of five innings. What should be his score in the fifth innings, if he has to make an average of 55 runs in five innings?
(a) 99
(b) 11
(c) 55
(d) 42

Q43. A bought 600 gm, 750 gm, 1.1 kg, 2.3 kg and 800 gm packs of dal from a shop. What is the average weight of the packs?
(a) 11.1 kg
(b) 111 gm
(c) 1.11 gm
(d) 1.11 kg

Q44. The average weight of six children is 32.8 kg. If two more children weighing 26.5 kg and 28.3 kg are added to the group, what would be the new average weight in kilograms?
(a) 31.45
(b) 30.3
(c) 29.2
(d) 28.9

Q45. The average of all prime numbers between 21 and 50 is (round off to one decimal number):
(a) 32.9
(b) 35.9
(c) 33.7
(d) 34.8

Q46. The average height of 12 students of a class is 132.5 cm. If one more student joins, the average height becomes 131.2 cm, the height of the new student is:
(a) 112.7
(b) 122.3
(c) 115.6
(d) 128.5 cm

Q47. The average of squares of numbers 1 to 5 is:
(a) 11
(b) 5
(c) 8
(d) 9

Q48. The average of all prime numbers between 30 to 60 is—
(a) 45.53
(b) 41.42
(c) 44.43
(d) 44.90

Q49. The average of twelve numbers is 47. The average of the first six numbers is 49 and that of the last three numbers is 45.5. The 7th, 8th and 9th numbers are equal. Find the ratio of average of 7th and 8th number to that of 8th and 9th numbers.
(a) 4 : 7
(b) 7 : 4
(c) $\perp$: 1
(d) 2 : 3

Q50. The average of 27 numbers is zero, out of them how many may be greater than zero, at the most?
(a) 15
(b) 20
(c) 26
(d) 0

Solutions

S1. Ans.(a)
Sol. 106974 is divisible by 2, 3, 6, and 7 only.

S2. Ans.(a)
Sol. Face value of the digit 6 in 16008 is 6.
place value of 6 in 16008 is 6000.

S3. Ans.(b)
Sol.

```
           90
      ┌─────────
   9  │  82 12
   9  │  81
      └─────────
  18  │  112
```

Nearest no of is 91
$(91)^2 - 8212$
$8281 - 8212 = 69$

S4. Ans.(c)
Sol.

```
        24
   38) x (
       _1_
        13.
```

$x = (38 \times 24) + 13$.
$= 912 + 13$
$= 925$.

S5. Ans.(b)
Sol. No. of student and amount donate by each student is equal

Let No. of Student = x
each Student donates = x
$x^2 = 3481$
$x = \sqrt{3481}$
$x = 59$

S6. Ans.(c)
Sol. 45789 is divisible by single digit no. 3.

S7. Ans.(b)
Sol. Sum of digits is divisible by 3.

S8. Ans.(b)
Sol.
No of rows = x
No of columns = x
$x^2 = 1936$
$x = 44$

S9. Ans.(c)
Sol.

```
        27
  37)1000
      74
      ──
     260
     259
     ───
       1
```

$37 - 1 = 36$
36 should be added.

S10. Ans.(b)
Sol.
78y is divisible by 8, So y = 4
$\dfrac{9 + 8 + 5 + x + 3 + 6 + 7 + 8 + 4}{9} = \dfrac{50 + x}{9}$
So x = 4
x + y = 8

S11. Ans.(d)
Sol.
LCM, 15, 18, 42
= 630

630 × 3 → No. divided by 15, 18, 42 leaves remainder 8
1890 + 8 = 1898

→ No. divisible by 13

$1898 = 1 + 8 + 9 + 8$
= 26 digit sum

S12. Ans.(a)
Sol.
$\sqrt{5535.36}$
= 77.4

S13. Ans.(b)
Sol.
23474 is exactly divisible by 2 and 11.
(2 + 4 + 4) - (3 + 7) = 0
Rule of divisible by 11.

S14. Ans.(c)
Sol.
All three digit no. formed by 0, 3 and 7 are
307 + 703 + 730+370
= 2110

S15. Ans.(d)
Sol.
$(-3)^7$ = -2187

S16. Ans.(d)

S17. Ans.(d)
Sol.
$9652 - 2569 = 7083$

S18. Ans.(a)
Sol.
66249
Divisibility of 3, 9 are
Sum of digits is multiple of 3, 9

S19. Ans.(c)
Sol.
When we divide 10000 by 327
It gives remainder 190
No we can add = 327 − 190
= 137
137 add to 10,000 than it exactly divided by 327

S20. Ans.(d)
Sol.
$\sqrt[3]{3375}$
= 15

S21. Ans.(c)
Sol.
A B C
4 : 5 : 9
4 + 5 + 9 = 18

$$18 \overline{\underset{x7869}{}} 141642$$

B's Share = $\frac{7869 \times 5}{100} \times 80$
= 31476

S22. Ans.(c);
Sol.
$\frac{2}{5}A + 40 = \frac{2}{7}B + 20 = \frac{9}{17}C + 10 = x$
$\because \frac{5}{2}(x-40) + \frac{7}{2}(x-20) + \frac{17}{9}(x-10) = 600$
$x = 100$
So, A's share = $\frac{5}{2}(100 - 40) = 150$

S23. Ans.(a);
Sol.
Ratio of total amount from 1ˢᵗ & 2ⁿᵈ class passengers
= 3 × 1 : 1 × 50 = 3 : 50
So, amount collected from 2ⁿᵈ class passengers
= $\left(\frac{50}{53} \times 1325\right)$ = 1250

S24. Ans.(c)
Sol.
Ratio of amount to = 5 sons : 4 daughter : 2 Nephews.
⇒ 25x : 16x : 2x = 8600
x = 200,
Req. money to each daughter = 4 × 200 = 800

S25. Ans.(a)
Sol.
$\frac{A}{7}$: $\frac{B}{9}$
$\frac{7x + 13}{9x - 13} = \frac{1}{1}$
26 = 2x
x = 13

S26. Ans.(c)

Sol.

Means proportional = $\sqrt{80 \times 405} = \sqrt{32400} = 180$

S27. Ans.(d)

Sol.

A : B : C
11   15   17
2 — ×1083 — 2166

Total amount = 1083 (11+15+17) = 1083×43 = 46569

S28. Ans.(c)

Sol.

Sol.

	Pulp	Water
Fresh	32	68
Dry	80	20

8 : 17 $\longrightarrow$ 25 $\xrightarrow{\times 4}$ 100

$4_{\times 2}$: $1_{\times 2}$ $\longrightarrow$ 10 $\xrightarrow{\times 4}$ 40

S29. Ans.(c)

Sol.

atq,

$\dfrac{23 - x}{39 - x} = \dfrac{32 - x}{56 - x}$

1288 - 79x = 1248 - 71x

8x = 40

x = 5

Mean proportion = $\sqrt{9 \times 16} = 12$

S30. Ans.(a)

Sol.

ATQ

$\dfrac{12 + x}{28 + x} = \dfrac{21 + x}{45 + x}$

$540 + 57x + x^2 = 588 + 49x + x^2$

$8x = 48$

$x = 6$

Mean proportion = $\sqrt{9 \times 25} = 15$

S31. Ans.(a)

Sol.

Weighted Mean $= \dfrac{1 \times 1 + 2 \times 2 + 3 \times 3 + \cdots + 10 \times 10}{1 + 2 + 3 + \cdots + 10}$

$= \dfrac{1^2 + 2^2 + 3^2 + \cdots + 10^2}{1 + 2 + 3 + \cdots + 10}$

$= \dfrac{\dfrac{10(10 + 1)(20 + 1)}{6}}{\dfrac{10(10 + 1)}{2}}$

$= \dfrac{21 \times 2}{6}$

$= 7$

S32. Ans.(c)

Sol.

Incorrect sum $= 10 \times 7.6 = 76$

Correct sum $= 76 - 3 + 8 = 81$

Correct mean $= \dfrac{81}{10} = 8.1$

S33. Ans.(a)

Sol.

Let the number of boys be x.

Number of girls $= (150 - x)$

$150 \times 60 = x \times 70 + (150 - x) \times 55$

$\Rightarrow 9000 = 70x + 8250 - 55x$

$\Rightarrow 750 = 15x$

$\Rightarrow x = 50$

S34. Ans.(b)

Sol.

Sum $= 100 \times 45 = 4500$

New Sum $= 4500 + (15 + 15 + 15 + \cdots 40\ times) - (5 + 5 + 5 + \cdots 60\ times)$

$= 4500 + 600 - 300$

$= 4800$

New mean $= \dfrac{4800}{100}$

$= 48$

S35. Ans.(a)
Sol.

Let the mean salary of female employees is Rs. x

$45 \times 5000 + 15 \times x = 60 \times 4800$

$\Rightarrow 15000 + x = 19200$

$\Rightarrow x = 4200$

S36. Ans.(c)
Sol.

If x is added to each observation, then mean is also increased by x.

Therefore, new mean $= 7 + 2$

$= 9$

S37. Ans.(c)
Sol.

Let average weight of girls be x.

$(15 + 10) \times 38.4 = 15 \times 40 + 10 \times x$

$\Rightarrow 960 = 600 + 10x$

$\Rightarrow x = 36 \text{ kg}$

S38. Ans.(d)
Sol.

$\dfrac{u + v + w + x + y + z}{6} = 10$
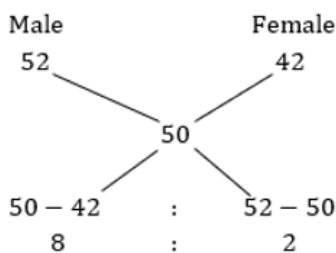
$\Rightarrow u + v + w + x + y + z = 60$

Now,

$\dfrac{(u + 10) + (v + 20) + (w + 30) + (x + 40) + (y + 50) + (z + 60)}{6}$

$= \dfrac{(u + v + w + x + y + z) + (10 + 20 + 30 + 40 + 50 + 60)}{6}$

$= \dfrac{60 + 210}{6}$

$= 45$

S39. Ans.(a)
Sol.

Male	Female
52	42

50

$50 - 42$: $52 - 50$

8 : 2

Percentage of male $= \dfrac{8}{10} \times 100 = 80\%$

Percentage of female $= \dfrac{2}{10} \times 100 = 20\%$

S40. Ans.(c)
Sol.

$\dfrac{A + B}{2} = 30$

$\Rightarrow A + B = 60$ ...(i)

$\dfrac{C + D}{2} = 20$

$\Rightarrow C + D = 40$ ...(ii)

Add (i) and (ii)

$\Rightarrow A + B + C + D = 100$

According to Statement 1:

$\dfrac{B + C}{2} > 25$

$\Rightarrow B + C > 50$

Let $B + C = 51$

$\Rightarrow A + 51 + D = 100$

$\Rightarrow A + D = 49$

$\Rightarrow \dfrac{A + D}{2} = 24.5 < 25$

Therefore, Either 1 or 2 is true.

S41. Ans.(c)
Sol.

$M + T + W + Th + Fri + Sat + Sun = 210^0$

$Fri + Sat + Sun = 210 - 124$

$\dfrac{Fri + Sat + Sun}{3} = \dfrac{86}{3} = 28.67^0 C$

S42. Ans.(a)
Sol.

Total runs in 5 innings

$55 \times 5 = 275$

Fifth inning runs $= 275 - (73 + 76 + 20 + 7)$

$= 99$

S43. Ans.(d)
Sol.

$\dfrac{1.1 + 2.3 + .8 + .75 + .6}{5}$

$Average = \dfrac{5.55}{5} = 1.11 \text{ kg}$

S44. Ans.(a)
Sol.

Sum of weight $= 32.8 \times 6 = 196.8$

New. Avg. $\Rightarrow \dfrac{196.8 + 26.5 + 28.3}{8}$

$= \dfrac{251.6}{8}$

$= 31.45$

S45. Ans.(b)
Sol.
Prime number between 21 and 50 are 23, 29, 31, 37, 41, 43, 47.

$$\text{Avg.} = \frac{23+29+31+37+41+43+47}{7}$$

$$= \frac{251}{7} = 35.9$$

S46. Ans.(c)
Sol.
Total. Height of 12 student = 12 × 132.5
= 1590
Total height of 3 student = 13 × 131.2
= 1705.6
Height of 13th student = 1705.6 – 1590
= 115.6 cm.
Alternate.
132.5 – 131.2
Avg. weight loss = 1.3
1.3 × 13 = 16.9.
132.5 – 16.9
= 115.6 cm.

S47. Ans.(a)
Sol.
$$\frac{(1)^2 + (2)^2 + (3)^2 + (4)^2 + (5)^2}{5} = \frac{1+4+9+16+25}{5} = 11$$

S48. Ans.(c)
Sol.
$$\text{Req. Avg.} = \frac{31+37+41+43+47+53+59}{7}$$

$$= \frac{311}{7}$$

$$= 44.43$$

S49. Ans.(c)
Sol.
7th = 8th = 9th = x
Req. ratio = $\frac{x}{x}$ = 1 : 1

S50. Ans.(c)
Sol.
Max 26 numbers may be greater than zero.