TCS NQT Aptitude (Numerical Ability) Questions & Answers - Paper 2

(1-5) Directions: Answer the questions based on the information given below.

In a restaurant, different numbers of orders are placed through Zomato and Swiggy. Average of number of orders placed through Zomato on Monday, Tuesday and Wednesday together is 375. Ratio of number of orders placed through Zomato on Monday and Tuesday is 9:7, respectively. Number of orders placed through Swiggy on Tuesday is 60% of total number orders placed on Tuesday. Number of orders placed through Swiggy on Tuesday is 525. Total number of orders placed on Wednesday is 20% less than the same on Tuesday. Ratio of number of orders placed through Swiggy on Monday and Wednesday is 6:5, respectively.

1) What is the ratio of number of orders placed through Zomato and Swiggy respectively on Wednesday?

a) 13:25

b) 11:15

c) 13:15

d) 13:11

Correct Choice: c

Solution

Total number of orders placed on Tuesday = 525/0.60 = 875

Number of orders placed through Zomato = 875 – 525 = 350

Number of orders placed through Zomato on Monday = 9/7 × 350 = 450

Total number of orders placed on Wednesday = 0.80 × 875 = 700

Number of orders placed through Zomato on Wednesday = 375 × 3 – 350 – 450 = 325

Number of orders placed through Swiggy on Wednesday = 700 – 325 = 375

Number of orders placed through Swiggy on Monday = 6/5 × 375 = 450

Total number of orders placed on Monday = 450 + 450 = 900

Days	Number of orders placed through Zomato	Number of orders placed through Swiggy	Total number of orders placed
Monday	450	450	900
Tuesday	350	525	875
Wednesday	325	375	700

Desired ratio = 325:375 = 13:15

Hence, option c.

2) Total number of orders placed on Thursday is 12% more than the same on Monday and ratio of number of orders placed through Swiggy on Tuesday and Thursday is 7:8, respectively. Number of orders placed through Zomato on Thursday is:

a) 408

b) 398

c) 418

d) 428

Correct Choice:a

Solution

Total number of orders placed on Tuesday = 525/0.60 = 875

Number of orders placed through Zomato = 875 – 525 = 350

Number of orders placed through Zomato on Monday = 9/7 × 350 = 450

Total number of orders placed on Wednesday = 0.80 × 875 = 700

Number of orders placed through Zomato on Wednesday = 375 × 3 – 350 – 450 = 325

Number of orders placed through Swiggy on Wednesday = 700 – 325 = 375

Number of orders placed through Swiggy on Monday = 6/5 × 375 = 450

Total number of orders placed on Monday = 450 + 450 = 900

Days	Number of orders placed through Zomato	Number of orders placed through Swiggy	Total number of orders placed
Monday	450	450	900
Tuesday	350	525	875
Wednesday	325	375	700

Total number of orders placed on Thursday = 1.12 × 900 = 1008

Number of orders placed through Swiggy on Thursday = 8/7 × 525 = 600

Number of orders placed through Zomato on Thursday = 1008 – 600 = 408

Hence, option a.

3) Number of orders placed through Swiggy on Tuesday is how much percent more/less than the same on Monday?

a) 26.67%

b) 16.67%

c) 13.33%

d) 15.55%

Correct Choice: b

Solution

Total number of orders placed on Tuesday = 525/0.60 = 875

Number of orders placed through Zomato = 875 – 525 = 350

Number of orders placed through Zomato on Monday = 9/7 × 350 = 450

Total number of orders placed on Wednesday = 0.80 × 875 = 700

Number of orders placed through Zomato on Wednesday = 375 × 3 – 350 – 450 = 325

Number of orders placed through Swiggy on Wednesday = 700 – 325 = 375

Number of orders placed through Swiggy on Monday = 6/5 × 375 = 450

Total number of orders placed on Monday = 450 + 450 = 900

Days	Number of orders placed through Zomato	Number of orders placed through Swiggy	Total number of orders placed
Monday	450	450	900
Tuesday	350	525	875
Wednesday	325	375	700

Desired percentage = [(525 – 450)/450] × 100 = 16.67%

Hence, option b.

4) If the delivery agent from Zomato and Swiggy charged Rs. 12 per order and Rs. 16 per order, respectively then find total amount paid by the restaurant on Tuesday if all the orders are delivered through a delivery agent.

a) Rs. 12800

b) Rs. 12400

c) Rs. 12600

d) Rs. 12200
Correct Choice: c

Solution

Total number of orders placed on Tuesday = 525/0.60 = 875

Number of orders placed through Zomato = 875 – 525 = 350

Number of orders placed through Zomato on Monday = 9/7 × 350 = 450

Total number of orders placed on Wednesday = 0.80 × 875 = 700

Number of orders placed through Zomato on Wednesday = 375 × 3 – 350 – 450 = 325

Number of orders placed through Swiggy on Wednesday = 700 – 325 = 375

Number of orders placed through Swiggy on Monday = 6/5 × 375 = 450

Total number of orders placed on Monday = 450 + 450 = 900

Days	Number of orders placed through Zomato	Number of orders placed through Swiggy	Total number of orders placed
Monday	450	450	900
Tuesday	350	525	875
Wednesday	325	375	700

Desire Amount paid = 350 × 12 + 525 × 16 = Rs. 12600

Hence, option c.

5) What is the number of orders placed through Zomato on Monday?

a) 450

b) 432

c) 360

d) 540

Correct Choice:a

Solution

Total number of orders placed on Tuesday = 525/0.60 = 875

Number of orders placed through Zomato = 875 – 525 = 350

Number of orders placed through Zomato on Monday = 9/7 × 350 = 450

Total number of orders placed on Wednesday = 0.80 × 875 = 700

Number of orders placed through Zomato on Wednesday = 375 × 3 – 350 – 450 = 325

Number of orders placed through Swiggy on Wednesday = 700 – 325 = 375

Number of orders placed through Swiggy on Monday = 6/5 × 375 = 450

Total number of orders placed on Monday = 450 + 450 = 900

Days	Number of orders placed through Zomato	Number of orders placed through Swiggy	Total number of orders placed
Monday	450	450	900
Tuesday	350	525	875

Wednesday	325	375	700

Number of orders placed through Zomato on Monday = 450

Hence, option a.

Topic – Mixtures & Allegations

6) 448 ml of mixture A containing milk and water in the ratio of 9:5, respectively is mixed with ‘x’ ml of mixture B containing milk and water in the ratio of 11:10, respectively. If the ratio of milk to water in the final mixture is 3:2, then find the value of x.

a) 252

b) 210

c) 336

d) 294

Correct Choice: a

Solution

Quantity of milk in mixture A = 9/14 × 448 = 288 ml

Quantity of water in mixture A = 448 – 288 = 160 ml

Let amount of milk and water in mixture B is 11y and 10y respectively.

So, (288 + 11y)/(160 + 10y) = 3/2

Or, 576 + 22y = 480 + 30y

Or, 8y = 96

Or, y = 12

So, x = 21y = 21 × 12 = 252

Hence, option a.

Topic – Time & work

7) A and B together can complete 75% of a work in 33 days while A, B and C together can complete the whole work in 26 days. If 'C' is 12.5% more efficient than B then find the time taken by A and C together to complete 70% of the work.

a) 29.2 days

b) 28.4 days

c) 27.8 days

d) None of these

Correct Choice: d

Solution

Total time taken by A and B together to complete the whole work = 33/0.75 = 44 days

Let total amount of work = 572 units (LCM of 44 and 26)

Efficiency of (A + B) = 572/44 = 13 units per day

Efficiency of (A + B + C) = 572/26 = 22 units per day

Efficiency of C = 22 – 13 = 9 units per day

Efficiency of B = 9/1.125 = 8 units per day

Efficiency of A = 13 – 8 = 5 units per day

Desired Time = (0.70 × 572)/14 = 28.6 days

Hence, option d.

Topic – Compound Interest

8) A certain sum of money at a certain rate of compound interest compounded annually becomes Rs. 12500 after 2 years and Rs. 19531.25 after 4 years. Find the rate of compound interest.

a) 20%

b) 15%

c) 17.5%

d) 25%

Correct Choice: d

Solution

Let the principal amount is Rs. P and the rate of compound interest is R% p.a.

So, $P(1 + R/100)^2 = 12500$……..(1)

And, $P(1 + R/100)^4 = 19531.25$……..(2)

On dividing equation (2) by equation (1), we get

$(1 + R/100)^2 = 19531.25/12500 = 1.5625$

Or, $(1 + R/100) = 1.25$

Or, $R/100 = 0.25$

Or, $R = 25\%$

Hence, option d.

Topic – Boats & streams

9) Ratio of speed of a boat in still water to speed of stream is 9:2. The boat travels a distance of (D + 40) km in downstream and D km in upstream. If the ratio of time taken by the boat to travel in upstream and in downstream is 4:3, respectively then find the value of D.

a) 220

b) 240

c) 212

d) 224
Correct Choice: d

Solution

Let speed of boat in still water and speed of stream is 9x km/h and 2x km/h respectively.

So, Upstream speed = 9x – 2x = 7x km/h

And, downstream speed = 9x + 2x = 11x km/h

According to question;

{D/7x}/{(D + 40)/11x} = 4/3

Or, 33D = 28D + 1120

Or, 5D = 1120

Or, D = 224

Hence, option d.

Topic – Partnership

10) A and B entered into a business with an initial investment of Rs. 1800 and Rs. 1500 respectively. After 7 months, A added Rs. 680 more while B withdrew Rs. 600 and C entered into the business investing Rs. 80x. At the end of year profit share of C, out of total profit of Rs. 7200 is Rs. 2400. Find the value of x.

a) 60

b) 50

c) 40

d) 80

Correct Choice: b

Solution

Ratio of profit share of A, B and C = {1800 × 7 + 2480 × 5}:{1500 × 7 + 900 × 5}:{80x × 5} = 25000:15000:400x = 125:75:2x

According to question;

2x/(125 + 75 + 2x) = 2400/7200 = 1/3

Or, 6x = 200 + 2x

Or, 4x = 200

Or, x = 50

Hence, option b.

Topic – Discounts

11) Gunja marked an article 50% above the cost price and sold it after giving a discount of 20%. Had she bought the article for Rs. 150 less and sold it for Rs. 240 more then she would have made a profit of 60%. New selling price is how much percent more than original selling price.

a) 20%

b) 25%

c) 15%

d) None of these
Correct Choice: d

Solution

Let cost price of the article is Rs. x

Marked price of the article = 1.50 × x = Rs. 1.5x

Selling price of the article = 0.80 × 1.5x = Rs. 1.2x

According to question;

1.60 × (x – 150) = 1.2x + 240

1.6x – 240 = 1.2x + 240

Or, 0.4x = 480

Or, x = 1200

Original selling price = 1.2 × 1200 = Rs. 1440

Desired percentage = 240/1440 × 100 = 16.67%

Hence, option d.

Topic – Problems on Ages

12) Ratio of ages of A and B, 8 years ago was 5:4 respectively. If present average age of B and C is 38 years and age of C after 24 years will be 20% more than age of A after 2 years. Find the ratio of present age of B to present age of C.

a) 9:10

b) 10:9

c) 9:8

d) 8:9

Correct Choice: b

Solution

Let age of A and B, 8 years ago was 5x years and 4x years respectively.

Present age of C = 'y' years

So, 4x + 8 + y = 38 × 2 = 76

Or, 4x + y = 68

And, y + 24 = 1.20 × (5x + 8 + 2)

Or, y + 24 = 6x + 12

Or, 68 – 4x + 24 = 6x + 12

Or, 10x = 80

Or, x = 8

So, present age of B = 8 × 4 + 8 = 40 years

Present age of C = 68 – 4 × 8 = 36 years

Desired ratio = 40:36 = 10:9

Hence, option b.

Topic – Data Interpretation (Bar Graphs on Absolute Values)

(13-14) Directions: Answer the questions based on the information given below.

The bar graph given below shows total number of questions attempted by five different students in an exam and the number of questions which are answered correctly by the respective student.

13) What is the ratio of total number of question answered correctly by Amar and Anthony together to total number of questions attempted by Jai?

a) 11:10

b) 9:10

c) 7:10

d) 9:11
Correct Choice: b

Solution

Students	Total number of questions attempted	Number of questions answered correctly	Number of wrongly answered questions
Amar	288	180	288 – 180 = 108
Akbar	336	240	336 – 240 = 96
Anthony	264	144	264 – 144 = 120
Jai	360	168	360 – 168 = 192
Veeru	300	132	300 – 132 = 168

Kalia	312	192	312 – 192 = 120

Desired ratio = (180 + 144):360 = 324:360 = 9:10

Hence, option b.

14) If number of questions attempted by Amar, Akbar, Anthony and Kalia is represented in a pie chart then central angle made by number of questions attempted by Anthony is:

a) 79.2^o

b) 89.2^o

c) 86.4^o

d) 100.8^o

Correct Choice: a

Solution

Students	Total number of questions attempted	Number of questions answered correctly	Number of wrongly answered questions

Amar	288	180	288 – 180 = 108
Akbar	336	240	336 – 240 = 96
Anthony	264	144	264 – 144 = 120
Jai	360	168	360 – 168 = 192
Veeru	300	132	300 – 132 = 168
Kalia	312	192	312 – 192 = 120

Total number questions attempted by Amar, Akbar, Anthony and Kalia = 288 + 336 + 264 + 312 = 1200

Desired Central angle = 264/1200 × 360 = 79.2^{o}

Hence, option a.

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Topic – Data Interpretation (Dual Pie Chart on Percentages)

(15-16) Directions: Answer the questions based on the information given below.

The pie chart given below shows the percentage distribution of total number employees in five companies.

Note:

1. Total number of employees in all five companies together = 3600

2. Total number of male employees in all five companies together = 2000

The pie chart given below shows the percentage distribution of number of female employees in all five companies.

15) Number of male employees in company D is 48% of total number of employees in company F. If the ratio of number of male to female employees in company F is 3:2, then find the number of male employees in company F.

a) 475

b) 415

c) 435

d) 425

Correct choice: c

Solution

Number of female employees in all five companies together = 3600 – 2000 = 1600

Companies	Total number of employees	Number of female employees	Number of male employees
A	0.20 × 3600 = 720	0.22 × 1600 = 352	720 – 352 = 368
B	0.12 × 3600 = 432	0.18 × 1600 = 288	432 – 288 = 144
C	0.28 × 3600 = 1008	0.33 × 1600 = 528	1008 – 528 = 480
D	0.15 × 3600 = 540	0.12 × 1600 = 192	540 – 192 = 348

E	0.25 × 3600 = 900	0.15 × 1600 = 240	900 – 240 = 660

Total number of employees in company F = 348/0.48 = 725

Number of male employees in company F = 3/5 × 725 = 435

Hence, option c.

16) Number of female employees in company C is how much percent more/less than number of male employees in same company?

a) 12%

b) 10%

c) 15%

d) 20%

Correct Choice: b

Solution

Number of female employees in all five companies together = 3600 – 2000 = 1600

Companies	Total number of employees	Number of female employees	Number of male employees
A	0.20 × 3600 = 720	0.22 × 1600 = 352	720 – 352 = 368

B	0.12 × 3600 = 432	0.18 × 1600 = 288	432 – 288 = 144
C	0.28 × 3600 = 1008	0.33 × 1600 = 528	1008 – 528 = 480
D	0.15 × 3600 = 540	0.12 × 1600 = 192	540 – 192 = 348
E	0.25 × 3600 = 900	0.15 × 1600 = 240	900 – 240 = 660

Desired Percentage = [(528 – 480)/480] × 100 = 10%

Hence, option b.

Topic – Simplifications

17) If $x^2 + 16x – 5 = 0$, then find the value of $5x/(x^2 – 9x – 5)$.

a) 1/7

b) 1/9

c) -1/3

d) -1/5

Correct Choice: d

Solution

$5x/(x^2 – 9x – 5)$

$= 5x/(x^2 + 16x – 5 – 25x)$

$= 5x/-25x = -1/5$

Hence, option d.

Topic – Averages

18) The average of 50 observations is 42. Later it was found that 46 was misread as 64. Find the correct average. https://www.freshersnow.com/placement-papers-download/

a) 41.64

b) 40.58

c) 39.88

d) 40.36

Correct Choice: a

Solution

Correct average = {(50 × 42) – 64 + 46}/50 = 41.64

Hence, option a.

Topic – Simplifications

19) Find the value of $\{(2744)^{1/3} \times 25\} \div 7$.

a) 20

b) 30

c) 40

d) 50

Correct Choice: d

Solution

$\{(2744)^{1/3} \times 25\} \div 7$

$= (14 \times 25) \div 7 = 50$

Hence, option d.

Topic – Simple Interest – Compound Interest

20) Sourav invested Rs. 2500 on 30% p.a. compound interest, compounded annually for 2 years. He then gave 20% of the amount received at 40% p.a. simple interest for 3 years. Find the simple interest received.

a) Rs. 1242

b) Rs. 1014

c) Rs. 972

d) Rs. 1146

Correct Choice: b

Solution

Amount received at compound interest = $2500(1 + 30/100)^2$ = Rs. 4225

Interest received at simple interest = $(0.20 \times 4225 \times 40 \times 3)/100$ = Rs. 1014

Hence, option b.

Topic –

21) If $(p/q) + (q/p) = 2$, then find the value of $(p^3 + q^3)/pq$

a) 0

b) $(p + q)$

c) -1

d) $– (p + q)$

Correct Choice: b

Solution

$(p/q) + (q/p) = 2$

$= (p^2 + q^2) = 2pq$

Or, $p^2 + q^2 – pq = pq$

Therefore,

$(p^3 + q^3)/pq = \{(p+ q)(p^2 + q^2 – pq)\}/pq$

Or, $(p^3 + q^3)/pq = \{(p+ q)pq\}/pq = (p + q)$

Hence, option b.

Topic – Divisibility Rules

22) For what least value of x, the number 203x88 is divisible by 36

a) 4

b) 6

c) 3

d) 2

Correct Choice: b

Solution

Since the number is divisible by 36 therefore, it has to be divisible by 9 and 4 both

The number formed by the last two digits is 88, therefore, the whole number is divisible by 4

For the number to be divisible by 9, the sum of the numbers should be divisible by 9

$(2 + 0 + 3 + x + 8 + 8) = (21 + x)$

Therefore, least number which will make the number divisible by 9 is 6.

Hence, option b.

Topic – Areas

23) The ratio of the perimeters of a rectangular and squared field is 7:6. Each side of the squared field is equal to the breadth of the rectangle. Find the length of the rectangular field if the area of the rectangular field is 4800 m^2.

a) 60 metres

b) 80 metres

c) 40 metres

d) 120 metres

Correct Chocie: b

Solution

Let the perimeters of the rectangular and squared field be 7x metres and 6x metres respectively

Therefore, breadth of the rectangular field = 6x/4 = 1.5x metres

Or, 2(l + b) = 7x

Or, l = 3.5x – 1.5x = 2x metres

According to the question,

$2x \times 1.5x = 4800$

Or, $x^2 = 1600$

Or, $x = 40$ metres

Therefore, length of the rectangular field = $2x = 80$ metres

Hence, option b.

Topic – Ratios & Proportions

24) The ratio of the number of boys and girls in school ‘A’ is 6:5, respectively and that in school ‘B’ is 8:3, respectively. The number of boys and girls in school ‘A’ is 100 less and 100 more than that in ‘B’. Find the total number of students in school ‘A’.

a) 450

b) 600

c) 550

d) 720

Correct Choice: c

Solution

Let the number of boys and girls in school ‘A’ be 6x and 5x respectively

Therefore, number of boys and girls in school ‘B’ be 8y and 3y respectively

According to the question,

6x – 8y = -100..... (1)

5x – 3y = 100..... (2)

On solving equation (1) and (2), we get

x = 50

Therefore, total number of students in school ‘A’ = 6x + 5x = 11x = 550

Hence, option c.

Topic – Trigonometry

25) The value $(\cos 37^\circ - \sin 53^\circ) + (\sec 41^\circ - \operatorname{cosec} 49^\circ) + (\tan 78^\circ - \cot 12^\circ) + (\tan^2 56^\circ - \sec^2 56^\circ)$ is

a) 1

b) 0

c) -1

d) 2

Correct Choice: c

Solution

$(\cos 37^o - \sin 53^o) + (\sec 41^o - \operatorname{cosec} 49^o) + (\tan 78^o - \cot 12^o) + (\tan^2 56^o - \sec^2 56^o)$

$= \{\cos 37^o - \sin(90 - 37^o)\} + \{\sec 41^o - \operatorname{cosec}(90 - 41^o)\} + \{\tan 78^o - \cot(90 - 78^o) + (-1)$

$= (\cos 37^o - \cos 37^o) + (\sec 41^o - \sec 41^o) + (\tan 78^o - 78^o) - 1$

$= -1$

Hence, option c.

Topic – Data Interpretation (Bar Graphs on Absolute values)

26) The given bar graph shows the number of births of male and female child in six different cities in a month.

Find the difference between the total number of male child born in ‘B’ and ‘C’ together and total number of female child born in ‘D’ and ‘E’ together.

a) 150

b) 180

c) 240

d) 110

Correct Choice: d

Solution

Required difference = (1260 + 980) – (990 + 1140) = 110

Hence, option d.