Quantitative Technique 3

Directions (1-5): Read the following information carefully and answer the questions that follow.

A report was published in 'Vidhan Today Magazine' regarding some candidates who appeared in the CLAT exam in the years 2018, 2019, 2020, 2021 and 2022 from a specific centre. According to that report, in the year 2018, a total of 700 candidates appeared. Out of all the students who qualified the exam in this year the ratio of no. of males to no. of females is 3:2. Out of all the students who appeared in CLAT in the year 2019, 50% cleared the exam and out of these students, the ratio of male to female is 2:3. In the year 2020, 480 students appeared in the exam out of which 40% did not clear the exam. Out of all the students who appeared in this exam in the year 2021, 70% did not qualify the exam and out of those who qualified the exam the ratio of no. of males to no. of females is 4:5. In the year 2022, a total of 900 students appeared in the exam out of which 64% were able to clear the exam.

1. In 2019, the number of males who qualified the exam were 50% of the number of males who qualified in 2022. Find the total number of appeared candidates in 2019 if the respective ratio of number of males who qualified and the females who qualified is 13: 11 in 2022.
(a) 760 (b) 728 (c) 720 (d) 780

2. If the ratio of number of qualified male in 2019 and the number of qualified male in 2021 is 4:3 and the total number of males who qualified in 2019 and 2021 together is 392 then, find the total number of candidates who appeared in CLAT in 2019 and 2021.
(a) 2120 (b) 2380 (c) 2570 (d) 2950

3. If the ratio of number of qualified females in 2020 and number of qualified females in 2022 is 3:7 and the number of qualified males in 2020 is same as number of qualified male in 2022 then, find the total number of qualified female candidates in 2020 and 2022 together?
(a) 700 (b) 710 (c) 720 (d) 730

4. In the year 2023 the no. of candidates who appeared in the exam is 125% of the no. of candidates who qualified in 2020. Find the number of qualified females in 2023 if the ratio of number of males who qualified and the number of female candidates who qualified is 7: 3. Also, the no. of candidates who qualified in 2023 is 376 less than the number of candidates who qualified in 2022.
(a) 60 (b) 36 (c) 48 (d) 72

5. The number of candidates who qualified the exam in 2020 is what percent more/less than the number of candidates who qualified the exam in the year 2022?
(a) 60% (b) 40% (c) 50% (d) 30%

1. Ans. d

Sol. COMMON EXPLANATION

YEAR	APPEARED	QUALIFIED	M:F
2018	700	-	3:2
2019	-	50%	2:3
2020	480	60%(40% did not clear)	-
2021	-	30%(70% did not clear)	4:5
2022	900	64%	-

The ratio of male to female who qualified in 2022 = 13:11
Those who qualified = 100-36 = 64%
No. of males who qualified in 2022 = 900*64%*13/24 = 312
Thus, the no. of males who qualified in 2019 = 50% of 312 = 156
Ratio of male to female who qualified in 2019 = 2:3
Now, 2 units = 156 so, 1 unit = 78
So, total qualified = 2+3 = 5 units
So, 5 units = 390
390 have qualified which is 50% of the total
Thus, total = 390*2 = 780
Hence, option (d) is correct.

2. Ans. b

Sol. Following the COMMON EXPLANATION

Total no. of males qualified in these two years = 392

Ratio 2019 to 2021 = 4:3

So, total 4+3 = 7 units = 392

Thus, 4 units = 56*4 = 224 and 3 units = 56*3 = 168

Now, in the year 2019, male to female who qualified = 2:3

So, 2 units = 224

Total 2+3 = 5 units = 5*112 = 560

As, 50% qualified

So, total appeared in 2017 = 560*2 = 1120

Ratio of male to female qualified in 2021 = 4:5

So, 4 units = 168, 1 unit = 42

Total = 4+5 = 9 units = 42*9 = 378

As, only 30% qualified

So, 30% = 378

Total 100% = 1260

Thus, total appeared candidates from 2019 and 2021 = 1120+1260 = 2380

Hence, option (b) is correct.

3. Ans. c

Sol. Following the COMMON EXPLANATION

No. of students who qualified in the year 2020 = 480*60% = 288

No. of students who qualified in the year 2022 = 900*64% = 576

The no. of male qualified is same in 2020 and 2022 = 1a:1a

Now, the ratio of female qualified in the year 2020 to 2022 = 3:7 = 3b:7b

Also,

Now, total qualified in 2020 = 1a+3b = 288

And total qualified in 2022 = 1a+7b = 576

Take their difference

7b-3b = 576-288, 4b = 288 so, b=72

Total females who qualified = 7b+3b = 10b = 10*72 = 720

Hence, option (c) is correct.

4. Ans. a

Sol. Following the COMMON EXPLANATION

Here there is no requirement of the first statement as we only need the no. of qualified candidates.

The no. of candidates who qualified in 2023 is 376 less than the no. of candidates who qualified in 2022

Those who qualified in 2022 = 900*64% = 576

Thus, who qualified in 2023 = 576-376 = 200

The ratio of males who qualified to the no. of females who qualified = 7:3

Thus, males who qualified = 60

Hence, option (a) is correct.

5. Ans. c

Sol. Following the COMMON EXPLANATION

$$\text{Required ratio} = \frac{480 * 60\%}{900 * 64\%} = \frac{36}{72} = \frac{1}{2}$$

So, Number of candidates who qualified the exam in 2020 = 1

Number of candidates who qualified the exam in the year 2022 = 2

Required % = (2-1)/2 = 1/2 = 50%

Hence, option (c) is correct.