Quiz Date: 24th June 2020

Directions (1-5): The given line graph shows the number of candidates who qualified IIT exam from Aakash and FIIT JEE in 5 years.
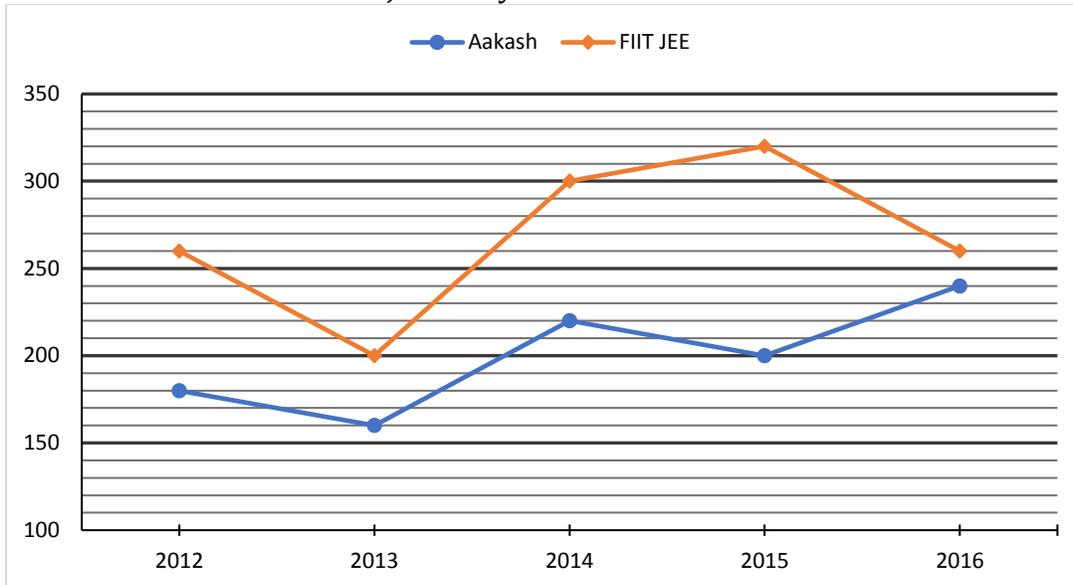
Q1. If number of candidates who appeared for IIT JEE from FIIT JEE in 2015 is 20% more than candidates appeared in 2014 from FIIT JEE. And 0.6% candidates out of total appeared candidates from FIIT JEE qualified for IIT in 2014. Find the qualifying percentage from FIIT JEE in 2015.
(a) 0.15%
(b) 0.7%
(c) 0.53%
(d) 0.2%
(e) 0.4%

Q2. Candidates qualified from Aakash in 2012 and 2016 together are what percent less than candidates qualified from FIIT JEE in 2013 and 2014 together.
(a) 20%
(b) 12%
(c) 25%
(d) 16%
(e) 8%

Q3. If female candidates qualified from Aakash in 2012 and 2016 are 20% and 40% less than male candidates in the same years respectively then find the ratio of male candidates to female candidate qualified from Aakash in 2012 and 2016 together.
(a) 25 : 17
(b) 15 : 23
(c) 19 : 25
(d) 31 : 19

(e) 26 : 19

Q4. Find the difference of average number of students qualified from FIIT JEE in 2012, 2014 & 2015 and average number of students qualified from Aakash in 2012, 2014 & 2016.
(a) 115
(b) 74
(c) 80
(d) 97
(e) 63

Q5. If every year 40% of qualified candidate from FIIT JEE and 60% of qualified candidate from Aakash are female, then find the sum of the male candidate qualified from FIIT JEE in 2015 and male candidates qualified from Aakash in 2013.
(a) 174
(b) 256
(c) 241
(d) 192
(e) 224

Directions (6-10): Find the wrong term in the following series.

Q6. 196, 168, 143, 120, 99, 80, 63
(a) 168
(b) 120
(c) 99
(d) 196
(e) 143

Q7. 3, 5, 14, 48, 200, 1008, 6072
(a) 200
(b) 1008
(c) 14
(d) 5
(e) 6072

Q8. 2, 6, 24, 96, 285, 568, 567

(a) 285
(b) 24
(c) 567
(d) 2
(e) 568

Q9. 32,   16,   24,   65,   210,   945,   5197.5
(a) 945
(b) 16
(c) 24
(d) 210
(e) 65

Q10. 7,   13,   25,   49,   97,   194,   385
(a) 13
(b) 49
(c) 97
(d) 194
(e) 25

Directions (11-15): **Study the bar graph to answer the following questions.**
The given bar graph shows the total investment of Richa and Diksha (in Rs. thousand) and Percentage of Richa's investment out of total Richa's and Diksha's investment in 6 schemes (A, B, C, D, E and F)
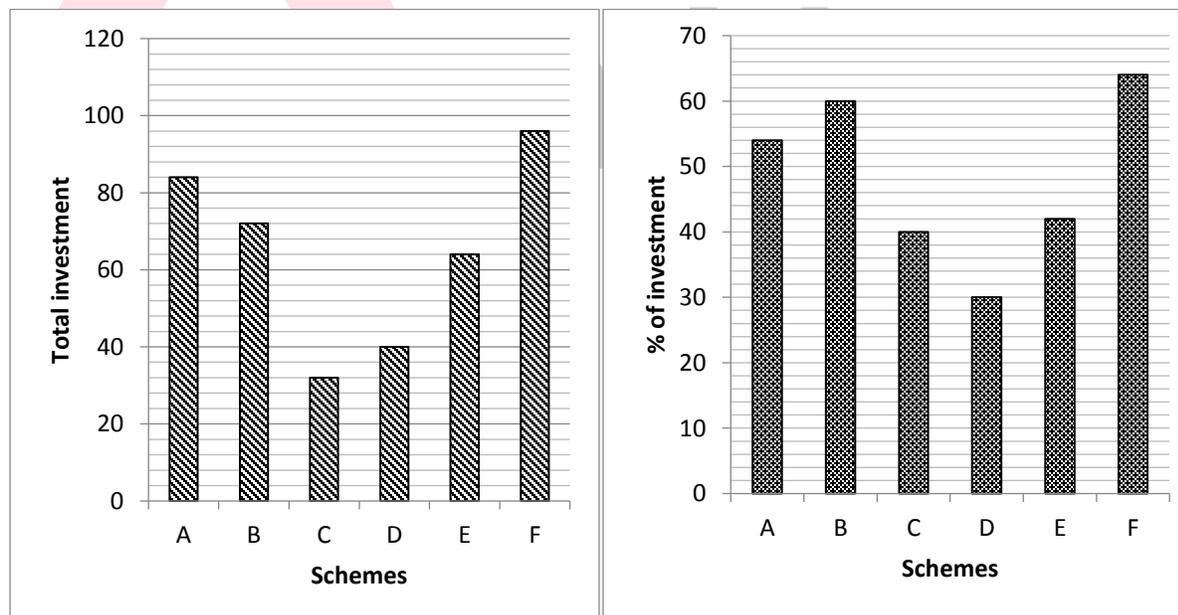
Q11. Scheme A offers simple interest at a certain rate of internet (per cent per annum). If the difference between the interest earned by Richa and Diksha from scheme A after 4 yr is Rs. 4435.20, then what is the rate of interest (per cent per annum)?
(a) 17.5

(b) 18
(c) 16.5
(d) 20
(e) 15

Q12. What is the respective ratio between total amount invested by Richa in schemes C and E together and total amount invested by Diksha in the same scheme together?
(a) 31 : 44
(b) 31 : 42
(c) 27 : 44
(d) 35 : 48
(e) 29 : 38

Q13. If scheme C offers compound interest (compounded annually) at 12% per annum, then what is the difference between interest earned by Richa and Diksha from scheme C after 2 years?
(a) Rs. 1628.16
(b) Rs. 1584.38
(c) Rs. 1672.74
(d) Rs. 1536.58
(e) Rs. 1722.96

Q14. Diksha invested in scheme F for 4 yr. If scheme F offers simple interest at 7% per annum for the first two years and then compound interest at 10% per annum (compound annually) for the 3rd and 4th year, then what will be the interest earned by Diksha after 4 yr?
(a) Rs. 13548.64
(b) Rs. 13112.064
(c) Rs. 12242.5
(d) Rs. 12364
(e) Rs. 11886

Q15. Amount invested by Richa in scheme G is equal to the amount invested by her in scheme B. The rate of interest per annum of schemes G and B is same. The only difference is scheme G offers compound interest (compounded annually), whereas the scheme B offers simple interest. If the difference between the interest earned by Richa from both the schemes after 2 yr is Rs. 349.92, then what is the rate of interest?
(a) 9%
(b) 5%
(c) 13%
(d) 11%
(e) 7%

Solutions

S1. Ans.(c)
Sol.

Candidates qualified from FIIT JEE in 2014 = 300
So, candidates appeared from FIIT JEE in 2014 =
$\dfrac{300}{0.6} \times 100$
= 50000
Candidates appeared from FIIT JEE in 2015
$= 50000 \times \dfrac{120}{100} = 60000$
Required percentage $= \dfrac{320}{60000} \times 100 = 0.53\%$

S2. Ans.(d)
Sol.
Candidates qualified from Aakash in 2012 and 2016
= 180 + 240 = 420
Candidates qualified from FIIT JEE in 2013 and 2014
= 200 + 300 = 500
Required percentage $= \dfrac{500 - 420}{500} \times 100 = 16\%$

S3. Ans.(a)
Sol.
Let no. of male candidate in 2012 = x
ATQ,
$x + \dfrac{80}{100} \times x = 180$
x = 100
so, male candidates in 2012 from Aakash = 100
female candidates in 2012 from Aakash
= 180 – 100 = 80
Let no. of male candidate from Aakash in 2016 = y
ATQ,
$y + \dfrac{60}{100} y = 240$
$y = 150$
So male candidates of Aakash in 2016 = 150
Female candidates of Aakash in 2016
= 240 – 150 = 90
Required ratio $= \dfrac{(100+150)}{80+90} = \dfrac{250}{170}$
= 25: 17

S4. Ans.(c)
Sol. Average student qualifies from FIIT JEE in 2012, 2014, 2015
$= \dfrac{260+300+320}{3}$
$= \dfrac{880}{3}$
Average student qualified from Aakash in 2012, 2014, 2016

$= \frac{180+220+240}{3} = \frac{640}{3}$

Required difference $= \frac{880}{3} - \frac{640}{3}$

$= \frac{240}{3} = 80$

S5. Ans.(b)
Sol.
Qualified male from FIIT JEE in 2015
$= \frac{60}{100} \times 320 = 192$
Qualified male from Aakash in 2013
$= \frac{40}{100} \times 160 = 64$
Required no. of candidates = 192 + 64 = 256

S6. Ans.(d)
Sol.

The pattern in the series will be

195	168	143	120	99	80	63

27   25   23   21   19   17
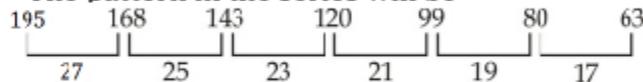
∴ Wrong term is 196

S7. Ans.(b)
Sol.
Wrong number = 1008
The pattern of series -
3 ×1 + 2 = 5
5 × 2 + 4 = 14
14 × 3 + 6 = 48
48 × 4 + 8 = 200
200 × 5 + 10 = 1010
1010 × 6 + 12 = 6072
1010 should be place of 1008

S8. Ans.(b)

Sol.
Wrong number = 24
The pattern of series -
× 6 − 6, × 5 − 5, × 4 − 4, × 3 − 3, × 2 - 2
25 should be place of 24

S9. Ans.(e)
Sol.

32	16	24	60	210	945	5197.5
	×0.5	×1.5	×2.5	×3.5	×4.5	×5.5

65 is written in place of 60.

S10. Ans.(d)
Sol.

7	13	25	49	97	193	385
	+6	+12	+24	+48	+96	+192

194 is written in place of 193.

S11. Ans.(c)
Sol.
Amount invested by Richa in scheme A
= 54% of 84000
= Rs. 45360
∴ Amount invested by Diksha in scheme A
= 84000 − 45360
= Rs. 38640
Let the required rate be r% per annum. Then,
$$= \frac{45360 \times r \times 4}{100} - \frac{38640 \times r \times 4}{100} = 4435.20$$
$$\Rightarrow 6720 \times r \times 4 = 443520$$
$$\Rightarrow r = 16.5\%$$

S12. Ans.(a)

Sol.
Required ratio = (Total amount invested by Richa in schemes C and E together) : (Total amount invested by Diksha in schemes C and E together)
= (40% of 32000 + 42% of 64000): (60% of 32000 + 58% of 64000)
= 39680: 56320 = 31: 44

S13. Ans.(a)
Sol.
Difference of amount invested by Richa and Diksha in
Scheme C = 60% of 32000 – 40% of 32000 = 20% of 32000
= Rs. 6400
∴ Required difference in their interest

$$= 6400 \left[\left(1 + \frac{12}{100}\right)^2 - 1 \right] = 6400 \times 0.2544$$
$$= Rs.\, 1628.16$$

S14. Ans.(b)
Sol.
Amount invested by Diksha in investment F
= (100 – 64) % of 96000 = 36% of 96000 = Rs. 34560
Then, total interest earned by Diksha after 4 years

$$= \frac{34560 \times 7 \times 2}{100} + (34560 + SI\ of\ first\ 2\ years) \left[\left(1 + \frac{10}{100}\right)^2 - 1 \right]$$
= 4838.40 + 8273.664 = Rs. 13112.064

S15. Ans.(a)
Sol.
Amount invested by Richa in each of scheme G and B
= 60% of 72000 = 43200
Let the rate of interest be r% per annum.
Then, according to the question,

$$C.I - S.I. = \frac{PR^2}{100^2} \ (for\ two\ years)$$
$$349.92 = \frac{43200 \times r^2}{100^2}$$
$$or, r^2 = 81$$
∴ r = 9%

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