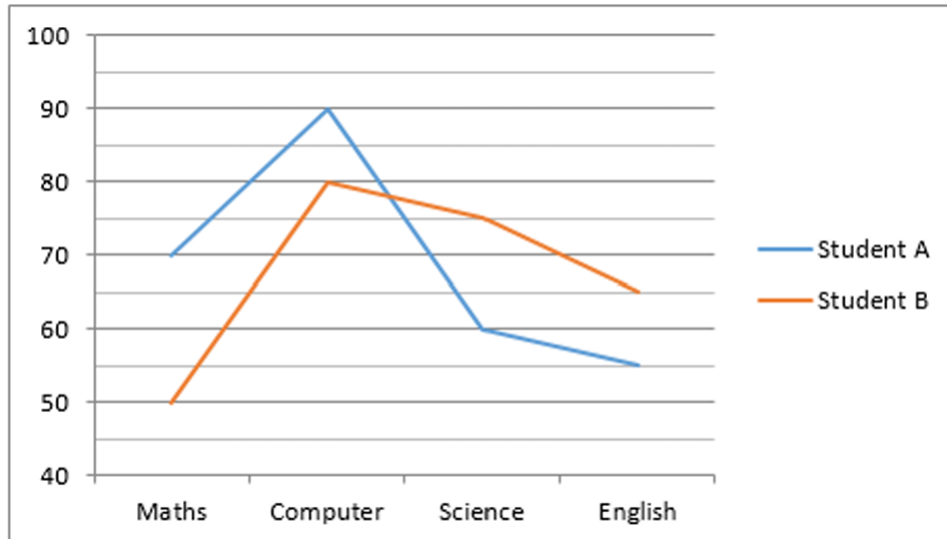# Recruitment of Junior Associates 2025

Pre-Examination Training for Eligible Candidates

Quantitative Aptitude Set 1

Direction (1 – 5): Following Line Graph shows the marks scored by Student A and Student B in high school in different Subjects.(Maximum Marks is 100 for each subject). Study the data carefully and answer the following questions.

Q1. What is difference between average marks scored by Student A and Student B in all subjects?
(a) 1.75   (b) 1.45   (c) 1.50   (d) 1.25   (e) 1

Q2. What is Ratio of marks obtained by Student A in Maths and Computer together to the marks obtained by Student B in Science and English together?
(a) 7:5   (b) 7:8   (c) 8:7   (d) 8:5   (e) 5:7

Q3. What is the overall percentage marks scored by Student B?
(a) 68.75 %   (b) 67.5 %   (c) 68%   (d) 67%   (e) 69.25%

Q4. Marks Scored by Student A in Math is what percent of marks scored by Student B in Science and English together?
(a) 40%   (b) 60%   (c) 50%   (d) 70%   (e) 80%

Q5. If passing marks for each subject is 40% of 120, then what is the difference between passing marks and marks scored by Student B in Computer?

(a) 30   (b) 32   (c) 36   (d) 40   (e) 45

Directions (6-10): Study the radar chart given below and answer the following questions. Radar chart shows the number of buses manufactured by 5 different companies (A, B, C, D& E) in 2016, 2017 & 2018.
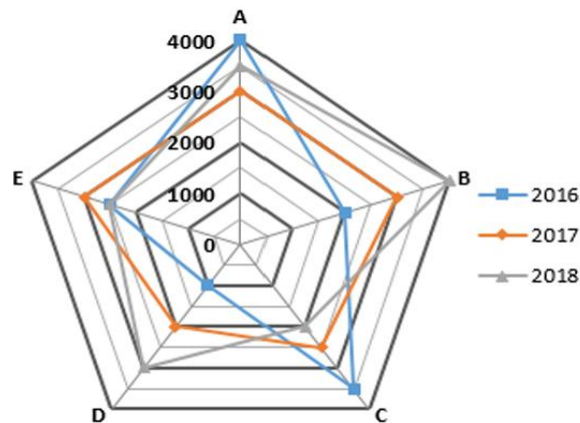
Note – Buses manufactured by a company in any year = (Sold + unsold) buses of that company in that year.

Q6. If company – B sold 80%, 90% and 80% buses manufactured by it in 2016, 2017 & 2018 respectively, then find average number of unsold buses of company – B in 2016, 2017 & 2018.

 (a) 400　　　(b) 900　　　(c) 500　　　(d)200　　　(e) 100

Q7. Buses manufactured by company – A in 2016 & 2018 together are what percent more or less than buses manufactured by company – D in 2017 & 2018 together?

(a) 50%　　　(b) 90%　　　(c) 70%　　　(d) 60%　　　(e) 80%

Q8. If buses sold by company – B and company – E in 2016 are 75% and 80% respectively, then find ratio of buses sold by company – B & E together in 2016 to unsold buses of company – B & E together in 2016.

(a) 11 : 5　　　(b) 5 :1　　　(c) 8 :5　　　(d) 7 : 2　　　(e) None of the above.

Q9. Buses manufactured in 2018 by all these 5 companies together are approximately what percent of buses manufactured in 2016 by all these 5 companies together?

(a) 104%   (b) 108%   (c) 102%   (d) 118%   (e) 115%

Q10. Average number of buses manufactured by company – B, C & D in 2017 are how much more or less than buses manufactured by company – D & E together in 2016?

(a) 1500   (b) 2500   (c) 2000   (d)1000   (e) 500

Q11. If the shopkeeper marked the price of an item 60% above the cost price and then gives two successive discount of 10% and 15% respectively, then find the profit percentage of the shopkeeper on selling the item?

(a) 25.4%   (b)22.4%   (c) 20%   (d) 28.5%   (e)32%

Q12. The average wt. of boys in school is 60kg while average wt. of girls is 55 kg. The average wt. of both boys and girls is 58kg. Find the number girls in school if number of boys is 720.

(a) 480   (b) 720   (c) 240   (d) 360   (e) 600

Q13. If 21 is added in a number, the result becomes 116⅔% of itself. Find the new number?

(a) 126   (b) 147   (c) 130   (d) 136   (e) 125

Q14. The amount invested by P and Q is in the ratio 2 : 3 and that invested by P and R is 5:7. If the profit earned by P at the end of year is Rs. 76 less than that earned by R. Find the profit earned by Q.

(a) Rs. 95   (b) Rs. 228   (c) Rs. 285   (d) Rs. 380   (e) Rs. 114

Q15. Average weight of A, B and C is 93 kg.. If another man D joins the group whose weight is 81 kg then new average of the four people will be equal to: -

(a) 65 kg   (b) 67 kg   (c) 86 kg   (d) 90 kg   (e) 96 kg

Q16. An article when sold at 4/5 of its original selling price, gives a profit of 20%. Find the profit % when the same article is sold at its actual selling price.

(a) 15 %   (b) 20 %   (c) 25%   (d) 22 %   (e) None of these

Q17. An amount of Rs. 20000 when invested at R% simple interest for 2 years becomes Rs. 24000. What will it become in 3 years if invested at (R+2)%? (in Rs.)

(a) 27200   (b) 26300   (c) 25200   (d) 27400   (e) 28100

Q18. Karan purchased an article marked up by 50% at a discount of 20% but later he found that the article was having a defect so he decided to return it but the shopkeeper returned him only 90% of what he had paid. What is profit/loss (in %) of the shopkeeper in the whole transaction?

(a) 8   (b) 10   (c) 12   (d) 15   (e) None of these

Q19. A sum of Rs. x was invested at 10% simple interest for 3 years. If the same sum was invested at 4% more for same period, then it would have fetched Rs. 120 more. Find the value of 5x. (in Rs.)

(a) 5000   (b) 4800   (c) 3600   (d) 5500   (e) 4000

Q20. A sum of Rs. P was invested at 10% for 2 years at simple interest. If the same sum was invested at 20% for 'x' years, it would have fetched Rs. 200 more. Find 'x' if Px = 5000. (value of x is given in months)

(a) 12   (b) 18   (c) 15   (d) Cannot be determined

(e) None of these

Directions (96-101): Line graph shows the quantity of 5 different products purchased by a person.
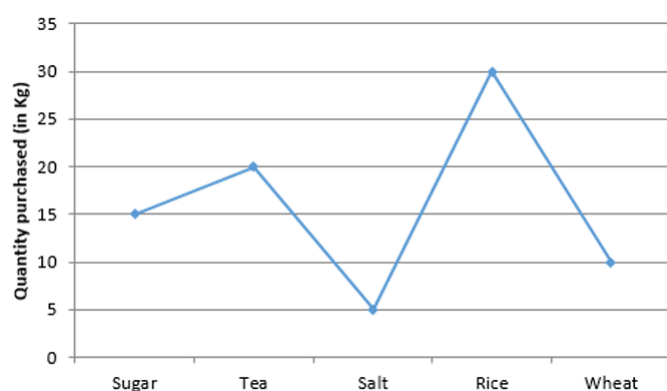
Q21. If sum of per kg cost of sugar and that of salt is Rs.90 and the ratio between per kg cost of sugar and that of salt is 3 : 2. Then, find the difference of total cost of sugar and total cost of salt ?

(a) Rs. 530   (b) Rs. 630   (c) Rs. 670   (d) Rs. 750   (e) Rs. 720

Q22. If total cost of Tea is Rs. 5000 and that of wheat is Rs. 450. Then cost per kg of wheat is what percent more or less than cost per kg of Tea ?

(a) 72%   (b) 86%   (c) 82%   (d) 78%   (e) 92%

Q23. One kg of rice and one kg of sugar is purchased in Rs 450. If cost per kg of rice decreases by 33 ⅓% & cost per kg of Sugar increases by 33 ⅓% then total cost per kg of rice and sugar is Rs. 500. Then find cost per kg of sugar ?

(a) Rs. 300   (b) Rs. 350   (c) Rs. 200   (d) Rs. 250   (e) Rs. 450

Q24. If cost per kg of Tea & per kg of Rice is Rs. 220 & Rs. 50 respectively then find the ratio of total cost of tea to total cost of rice ?

(a) 53 : 15   (b) 44 : 17   (c) 41 : 17   (d) 47 : 15   (e) 44 : 15

Q25. Total quantity of sugar and salt purchased together is what percent more/less than the total quantity of Tea & wheat purchased together?

(a) $48\frac{2}{3}\%$

(b) $37\frac{1}{3}\%$

(c) $66\frac{2}{3}\%$

(d) $33\frac{1}{3}\%$

(e) $42\frac{2}{3}\%$

Directions (26-30): What will come in the place of the question mark (?) in the following number series?

Q26.   5,   7,   25,   131,   ?,   8335

(a) 845   (b) 940   (c) 965   (d) 925   (e) 825

Q27.   81,   86,   94,   111,   135,   ?

(a) 172   (b) 176   (c) 192   (d) 182   (e) 186

Q28.   61,   32,   55,   36,   53,   ?

(a) 50   (b) 42   (c) 40   (d) 65   (e) 48

Q29.   5,   ?,   11.5,   35,   164,   1360

(a) 7.5   (b) 11   (c) 8.5   (d) 9   (e) 5.5

Q30.   1656,   549,   180,   ?,   16

(a) 63   (b) 73   (c) 85   (d) 57   (e) 67

Q31. If cost per kg of sugar, salt & rice is Rs. 10, Rs. 30 & Rs. 20 respectively then find the sum of difference of total cost of sugar and that of salt and difference of total cost of sugar and that of rice?

(a) Rs. 500 (b) Rs. 475   (c) Rs. 400   (d) Rs. 450   (e) Rs. 435

Q32. A train crosses a tunnel which is half of its length with a speed of 144 km/hr. in ½ min, then find the time in which it will cross another train which is double of its length and standing on platform in opposite direction with 60% of its initial speed ?

(a) 120 sec.   (b) 90 sec.   (c) 150 sec.   (d) 100 sec.   (e) 180 sec.

Q33. Arun sells his watch at a profit of 33 ⅓% & his purse at a loss of 16 ⅔% & on whole he gains Rs. 50. And if he sells his watch at a loss of 16 ⅔% & purse at profit of 33 ⅓% then there will be no profit no loss. Find cost price of the watch ?

(a)Rs. 300 (b) Rs. 100   (c) Rs. 250   (d) Rs. 200   (e) Rs. 150

Q34. A boat can cover an equal distance in upstream and in downstream in 6 hours. If speed of boat in still water is 200% more than the speed of stream then find the time taken to cover the same distance in upstream.

(a) 5 hours (b) 3 hours   (c) 4.5 hours   (d) 3.5 hours   (e) 4 hours

Q35. Prabhat invested Rs. 15600 on SI at rate of R% p.a. for 3 years & the interest obtained is Rs. 7020. If he invested the same amount at rate of (R+5)% p.a. for two years on CI then find the interest obtained by Prabhat?

(a)   Rs. 6864   (b) Rs. 6250   (c) Rs. 6748   (d) Rs. 6468   (e) Rs. 6648

Directions (Q36-Q40): Study the paragraph carefully and answer the following questions.
Navneet publications sold three books i.e. Quant, English and reasoning on three different stores i.e. A, B and C. Quant, reasoning and English book are sold at 20% discount by store A, C and B respectively. Quant, reasoning and English book are sold at 15% discount by store C, B and A respectively. Discount percent given on Quant book by store B is half of discount percent given on reasoning book by store C. M.R.P. for each book is same at every store.

Q36. Store A sold reasoning book at Rs. 880, find M.R.P of the book if discount given by store A on reasoning book is 20% more than discount given by store B on quant book?

(a) Rs. 1200   (b) Rs. 1000   (c) Rs. 960   (d)Rs. 1240   (e) None of these.

Q37. If total selling price of Quant book for store A and B together is Rs. 510. Find M.R.P. of Quant for store B?
(a) Rs.240 (b) Rs.270   (c) Rs.280   (d) Rs.300   (e) Rs.600

Q38. If market price of a reasoning book was 50% more than cost price of the book for store C. Find profit percent on selling a reasoning book by store C?
(a) 20%   (b) 15%   (c) 25%   (d) 10%   (e) 12.5%

Q39. What is the ratio of average discount given on quant book by store A, reasoning book by store C and English book by store B to market price of a book?
(a) 5:4   (b) 2:3   (c) 3:2   (d) 1:5   (e) 4:5

Q40. If an English book is sold at Rs. 170 by store A, the find selling price of reasoning book for store C?
(a) Rs. 160 (b) Rs. 170   (c) Rs. 135   (d) Rs. 105   (e) None of these.

Q41. 4 men & 3 children completes a project for Rs. 600 in 3 days. If a man completes same project in 15 days. Find daily wage of a man.
(a) Rs 36   (b) Rs.40   (c) Rs.44   (d) Rs.48   (e) Rs.42

Q42. Difference between 50% of y and 10% of x is 170 whereas difference between 40% of x and 30% of y is zero. Find the sum of 'x' and 'y' ?
(a) 770   (b) 630   (c) 600   (d) 700   (e) 560

Q43. If ratio of time periods of investment of P and Q is 4:5, profit at the end of the year is 75000 and P's share is Rs 15000, then what is the ratio of Q's and P's investment?   (a) 5:16   (b) 6:7   (c) 12:13   (d) 16:5   (e) 8:5

Q44. Average of 8 consecutive odd numbers is 10. What will be the average of smallest 4 numbers out of 8 numbers?
(a) 7   (b) 8   (c) 6   (d) 4   (e) 5

Q45. The work done by 5 boys in 20 days can be done by 10 men in 8 days. 4 Men & 4 boys undertook a work to complete in 3 days for Rs. 540. Find the amount earned by boys for their whole contribution.
(a) Rs 236   (b) Rs.240   (c) Rs.244   (d) Rs.248   (e) Rs.242

Q46. Sanjay scored 56% marks and passed an exam by 10 marks while Rohit scored 48% marks but failed by 6 marks. What is the pass percentage?
(a)52.5%   (b) 51.5%   (c) 52%   (d) 51%   (e) None of these

Q47. Four books are to be distributed among seven students. If no students gets more than one book, then the number of ways possible to do it is?
(a) 180   (b) 240   (c) 260   (d) 210   (e) 220

Q48. In a basket, there are 8 red ball and 6 green ball. If 2 balls are taken out from the basket, then find what is the probability of both ball being either red or green?
(a) 43/91   (b) 47/91   (c) 51/91   (d) 43/87   (e) 43/82

Q49. The parallel sides of a trapezium are 4 cm & 10 cm respectively while non-parallel sides are equal to side of square of area 25 sq.cm. find area of trapezium. (in sq.cm.)
(a) 50   (b) 42   (c) 56   (d) 28   (e) 14

Q50. The ratio of area of square to that of rectangle of length 10 cm is 4 : 5. If breadth of rectangle is same as side of square. Find length of diagonal of square.
(a) $9\sqrt{2}$ cm   (b) $10\sqrt{2}$ cm   (c) $6\sqrt{2}$ cm   (d) $4\sqrt{2}$ cm   (e) $8\sqrt{2}$ cm

Answers:

Q1. d

required difference = average marks scored by Student A - Average marks scored by Student B

$$\therefore \frac{70+90+60+55}{4} - \frac{50+80+75+65}{4} = \frac{5}{4} = 1.25$$

Q2. c

marks obtained by student A in Math and Computer together =70 + 90 = 160
marks obtained by student B in Science and English together=75+65 =140
required ratio = 160:140= 8:7

Q3. b

Overall percentage marks of Student B = $\frac{50+80+75+65}{400} \times 100 = 67.5$

Q4. c

Marks Scored by Student A in Math =70
Marks Scored by Student B in Science and English =75+65=140
Required % $= \frac{70}{140} \times 100 = 50\%$

Q5. b

A.T.Q, passing marks $= \frac{40}{100} \times 120 = 48$
$\therefore$ required difference = 80 − 48 = 32

Q6. c

Unsold buses of company – B in 2016, 2017 & 2018 together
$$= \left(2000 \times \frac{20}{100}\right) + \left(3000 \times \frac{10}{100}\right) + \left(4000 \times \frac{20}{100}\right)$$
$$= 400 + 300 + 800$$
$$= 1500$$
Required average $= \frac{1500}{3}$
$$= 500$$

Q7. a

Buses manufactured by company – A in 2016 & 2018 together = 4000 + 3500
= 7500
Buses manufactured by company – D in 2017 & 2018 together = 2000 + 3000
= 5000
Required % $= \frac{7500-5000}{5000} \times 100$
= 50%

Q8. d

Buses sold by company – B & E together in 2016 $= \left(2000 \times \frac{75}{100}\right) + \left(2500 \times \frac{80}{100}\right)$
= 1500 + 2000
= 3500
Unsold buses of company – B & E together in 2016 = (2000 + 2500) − (3500)
= 1000
Required ratio $= \frac{3500}{1000}$
= 7 : 2

Q9. e

Buses manufactured in 2018 by all these 5 companies together
 = 3500 + 4000 + 2000 + 3000 + 2500
= 15000
Buses manufactured in 2016by all these 5 companies together
= 4000 + 2000 + 3500 + 1000 + 2500
= 13000
Required % = $\frac{15000}{13000} \times 100$
= 115.38%
= 115% (approx.)

Q10. d

Average number of buses manufactured by company – B, C & D in 2017
$= \frac{3000+2500+2000}{3}$
= 2500
Buses manufactured by company – D & E together in 2016 = 1000 + 2500
= 3500
Required difference = 3500 − 2500
= 1000

Q11. b

Let cost price of the item be 100x
Marked price of the item=100x+ 100x $\times \frac{60}{100}$
=160x
Selling price of items after giving discounts=160x $\times \frac{90}{100} \times \frac{85}{100}$
=122.4x
Profit percentage= $\frac{122.4x-100x}{100x} \times 100$
=22.4 %

Q12.a

ATQ,

Average wt. of boys		Average wt. of Girls
60		55
	58	
3	:	2
boys		girls
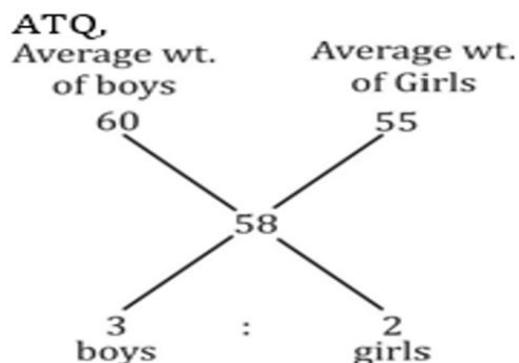
Let no. of boys = 3x and no. of girls = 2x
Number of boys = 3x = 720
$\Rightarrow$ x = 240
No. of girls =2x = 480

Q13.b

$116\frac{2}{3}\% = \frac{7}{6}$
$\Rightarrow 1 \rightarrow 21$
So, $7 \rightarrow 147$
New no. is 147.

Q14.c

P : Q = 2 : 3
P : R = 5 : 7
$\Rightarrow$ Q : P : R = 15 : 10 : 14
Let profit earned by Q be 15x, by P be 10x and by R be 14x.
ATQ,
4x=76
x=19
Profit earned by Q=15x=15×19=Rs 285

Q15.d

A + B + C = 93 × 3

A + B + C = 279

A + B + C + D = 279 + 81 = 360

Required average $= \dfrac{360}{4} = 90$ kg

Q16.e

let actual SP be Rs. x

New selling price = Rs. $\dfrac{4x}{5}$

Let CP be Rs. y

ATQ, $\dfrac{\frac{4x}{5}-y}{y} = \dfrac{20}{100} = \dfrac{1}{5}$

$\dfrac{4x}{5} - y = \dfrac{y}{5}$

$\dfrac{y}{x} = \dfrac{2}{3}$

When article sold at actual selling price,

Profit % $= \dfrac{x-y}{y} \times 100 = \dfrac{\frac{3y}{2}-y}{y} \times 100 = 50\%$

Q17.a

SI = 24000 − 20000 = $Rs. 4000$

$4000 = \frac{20000 \times 2 \times R}{100}$

$R = 10\%$

Required amount = $20000 + \frac{20000 \times 12 \times 3}{100} = Rs. 27200$

Q18. c

let CP be Rs. x

MP = $\frac{150}{100} \times x = Rs. 1.5x$

SP = $\frac{80}{100} \times 1.5x = Rs. 1.2x$

Amount returned to Karan = $\frac{90}{100} \times 1.2x = Rs. 1.08x$

Profit % (shopkeeper) = $\frac{1.2x - 1.08x}{x} \times 100 = 12\%$

Q19. a

ATQ,

$\frac{x \times 14 \times 3}{100} - \frac{x \times 10 \times 3}{100} = 120$

$\frac{(42 - 30)x}{100} = 120$

$x = Rs. 1000$

Required answer = $5x = 5 \times 1000 = Rs. 5000$

Q20. c

ATQ, $\frac{P \times 10 \times 2}{100} + 200 = \frac{P \times 20 \times x}{100}$

$\frac{20Px}{100} - 200 = \frac{20P}{100}$

$\frac{20P}{100} = \frac{20 \times 5000}{100} - 200 = 800$

$P = Rs. 4000$

$x = \frac{5000}{4000} = \frac{5}{4} years \ or \ 15 \ months$

Q21. b

Cost per kg of sugar = $90 \times \frac{3}{5}$ = Rs. 54

Cost per kg of salt = $90 \times \frac{2}{5}$ = Rs. 36

Required difference = 15 × 54 – 5 × 36

= 810 – 180

= Rs. 630

Q22. c

Cost per kg of tea = $\frac{5000}{20}$ = Rs. 250

Cost per kg of wheat = $\frac{450}{10}$ = Rs. 45

Required percentage = $\frac{250-45}{250} \times 100$ = 82%

Q23. a

Let cost per kg of rice be Rs. x
& cost per kg of sugar be Rs. y
ATQ,
$x + y = 450$ ...(i)
After change
$x \times \frac{2}{3} + y \times \frac{4}{3} = 500$
$2x + 4y = 1500$
$x + 2y = 750$ ...(ii)
From (i) & (ii)
$y = $ Rs. 300

Q24. e

Required ratio $= \frac{20 \times 220}{30 \times 50} = 44 : 15$

Q25. d

Required percentage $= \frac{(20+10)-(15+5)}{(20+10)} \times 100 = 33\frac{1}{3}\%$

Q26. d
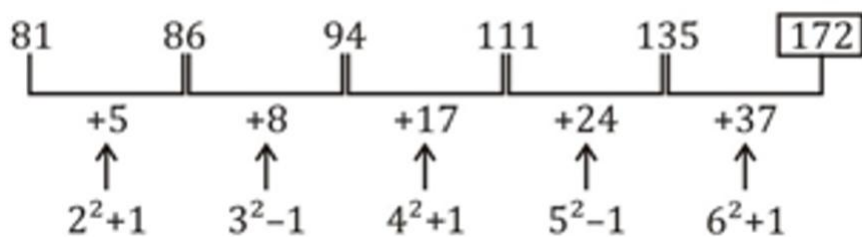
Pattern is
$5 \times 1 + 2 = 7$
$7 \times 3 + 4 = 25$
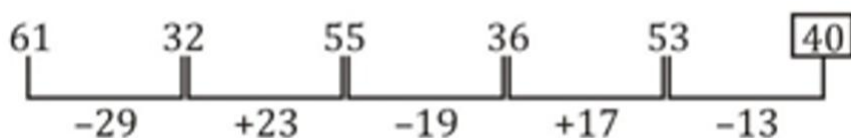$25 \times 5 + 6 = 131$
$131 \times 7 + 8 = 925$
$925 \times 9 + 10 = 8335$

Q27. a

Pattern is

81	86	94	111	135	172

$$+5 \quad +8 \quad +17 \quad +24 \quad +37$$

$$2^2+1 \quad 3^2-1 \quad 4^2+1 \quad 5^2-1 \quad 6^2+1$$

Q28. c

61	32	55	36	53	40

$$-29 \quad +23 \quad -19 \quad +17 \quad -13$$

Q29. e

Pattern is

$5 \times 0.5 + 3 = 5.5$

$5.5 \times 1 + 6 = 11.5$

$11.5 \times 2 + 12 = 35$

$35 \times 4 + 24 = 164$

$164 \times 8 + 48 = 1360$

Q30. d

Pattern is

$\frac{1656}{3} - 3 = 549$

$\frac{549}{3} - 3 = 180$

$\frac{180}{3} - 3 = 57$

$\frac{57}{3} - 3 = 16.$

Q31.d

Required sum = $(15 \times 10 - 5 \times 30) + (30 \times 20 - 15 \times 10) = $ Rs. 450

Q32. d

Let length of train = 2L m
Length of tunnel = L m
ATQ,
$3L = 144 \times \frac{5}{18} \times 30$
L = 400 m
Length of train = 800 m
∴ Length of other train = 2 × 800 = 1600 m
60% of speed = $144 \times \frac{5}{18} \times \frac{60}{100} = 24$ m/sec.
∴ (1600 + 800) = 24 × time
∴ time = 100 sec.

Q33. d

Using Alligation,

Watch   Purse

$-\frac{50}{3}$ % $+\frac{100}{3}$

                0

$+\frac{100}{3}$ $+\frac{50}{3}$

Watch : Purse = 2 : 1
Let cost price of watch be Rs. $2x$
Purse be Rs. x
ATQ,
$\frac{100}{300} \times 2x - \frac{50}{300} \times x = 50$
$x = Rs. 100$
∴ cost price of watch = 2 × 100 = Rs. 200

Q34. e

Let speed of stream be x km/h
So, speed of boat = $3x$ km/h
Speed of boat in upstream = $2x$ km/h
Speed of boat in downstream = $4x$ km/h
Ratio of speed of boat in downstream and upstream is 2 : 1
So ratio of time taken = 1 : 2
So time taken in upstream = $\frac{2}{(1+2)} \times 6$ = 4 hour

Q35. a

We know,

$$S.I. = \frac{P \times R \times time}{100} \qquad \begin{bmatrix} P \to Principal \\ R \to Rate \end{bmatrix}$$

$$7020 = \frac{15600 \times R \times 3}{100}$$

R = 15%
R + 5 = 20%

$$C.I. = 15600 \left[\left(1 + \frac{20}{100}\right)^2 - 1 \right]$$

$$C.I. = 15600 \left[\frac{36}{25} - 1 \right]$$

$$= 15600 \times \frac{11}{25} = Rs.\ 6864$$

Q36. b

Discount percent given on Quant book by store B = $\frac{1}{2} \times 20\% = 10\%$
Table shows discount percent given by three different stores on three different books.

Store and book name	A	B	C
Quant	20%	10%	15%
Reasoning		15%	20%
English	15%	20%	

Discount given by store A on reasoning book = $10 \times \frac{120}{100} = 12\%$
M.R.P. of book = $880 \times \frac{100}{88} = Rs.\ 1000$

Q37. d

Discount percent given on Quant book by store B = $\frac{1}{2}$ × 20% = 10%

Table shows discount percent given by three different stores on three different books.

Store and book name	A	B	C
Quant	20%	10%	15%
Reasoning		15%	20%
English	15%	20%	

let M.R.P. of each book = Rs.100a

ATQ

$$100a \times \frac{80}{100} + 100a \times \frac{90}{100} = 510$$
$$170a = 510$$
$$a = 3$$

So, $100a = Rs.\,300$

Q38. a

Discount percent given on Quant book by store B = $\frac{1}{2}$ × 20% = 10%

Table shows discount percent given by three different stores on three different books.

Store and book name	A	B	C
Quant	20%	10%	15%
Reasoning		15%	20%
English	15%	20%	

let cost price of a reasoning book for store C = Rs. 100y

Market price of a book for store C = $100y \times \frac{150}{100} = Rs.\,150y$

Selling price of book for store C = $150y \times \frac{80}{100} = Rs.\,120y$

Required profit percent = $\frac{120y-100y}{100y} \times 100 = 20\%$

Q39. d

Discount percent given on Quant book by store B $= \frac{1}{2} \times 20\% = 10\%$

Table shows discount percent given by three different stores on three different books.

Store and book name	A	B	C
Quant	20%	10%	15%
Reasoning		15%	20%
English	15%	20%	

let M.R.P. of each book = Rs.100c

$$\text{Required ratio} = \frac{1}{3} \times \left(100c \times \frac{20}{100} + 100c \times \frac{20}{100} + 100c \times \frac{20}{100}\right) : 100c$$
$$= 20 : 100$$
$$= 1 : 5$$

Q40. a

Discount percent given on Quant book by store B $= \frac{1}{2} \times 20\% = 10\%$

Table shows discount percent given by three different stores on three different books.

Store and book name	A	B	C
Quant	20%	10%	15%
Reasoning		15%	20%
English	15%	20%	

Selling price of reasoning book for store C $= \frac{170}{100-15} \times (100 - 20)$
$$= \text{Rs. } 160$$

Q41. b

1 day wage of 4 men & 3 children = $\frac{600}{3}$ = Rs. 200

Let efficiency of a man & a child be M & C units/day respectively

Equating total work,

$(4M + 3C) \times 3 = M \times 15$

$M : C = 3 : 1$ (this is also ratio of daily wage)

Daily wage of a man = $\frac{3}{15} \times 200$ = Rs. 40

Q42. d

ATQ, $\frac{50}{100}y - \frac{10}{100}x = 170$

$\frac{40}{100}x = \frac{30}{100}y \Rightarrow \frac{x}{y} = \frac{3}{4}$

$\frac{50}{100} \times \frac{4}{3}x - \frac{10}{100}x = 170$

$x = 300 \Rightarrow y = 400$

Required answer = $x + y = 300 + 400 = 700$

Q43. d

Let ratio of P's investment and Q's investment be x:y

Therefore, profit will be shared in the ratio 4x:5y

Given, $\frac{4x}{4x+5y} \times 75000$ =15000

$\frac{4x}{4x+5y} = \frac{1}{5}$

20x =4x +5y

16x =5y

y : x=16:5

Q44. c

let the smallest odd number be 'a' so next odd number be 'a+2' and so on
8th number = $a + (8 - 1) \times 2 = a + 14$ (using AP, nth term = a + (n-1)d)
ATQ, $\frac{a+a+2+\cdots+a+14}{8} = 10$
$8a + 56 = 80$ (using sum of AP)
$a = \frac{80 - 56}{8} = 3$
Since 'a' is smallest number, so smallest 4 numbers will be = 3, 5, 7, 9
Required average = $\frac{3+5+7+9}{4} = 6$

Q45. b

Let efficiency of a man & a boy be M & B units/day respectively
$5B \times 20 = 10M \times 8$
$\frac{M}{B} = \frac{5}{4}$
Total work = $(4 \times 5 + 4 \times 4) \times 3 = 108\ units$
Work done by 4 boys in 3 days = $4 \times 4 \times 3 = 48\ units$
Amount earned by boys for their contribution = $\frac{48}{108} \times 540 = Rs.\ 240$

Q46. d

let maximum marks be x
$\frac{56}{100}x - 10 = \frac{48}{100}x + 6$
$x = 200$
Marks of Sanjay = $\frac{56}{100}x = 112$
Passing marks = $112 - 10 = 102$
Pass % = $\frac{102}{200} \times 100 = 51\%$
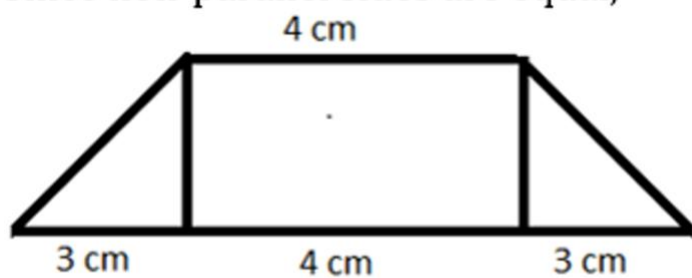
Q47. d

Required number of ways= 7_{P_4}
$=7 \times 6 \times 5 = 210$ ways

Q48. a

In basket, there are 8 red balls and 6 green balls

Probability(both being either red or blue)= $\frac{8_{C_2} + 6_{C_2}}{14_{C_2}}$

$= \frac{28+15}{91} = \frac{43}{91}$

Q49. d

side of square = $\sqrt{25} = 5\ cm$
Since non-parallel sides are equal,

Height of trapezium = $\sqrt{5^2 - 3^2} = 4\ cm$

Area of trapezium $= \frac{1}{2}(base1 + base2) \times height$

$\frac{1}{2} \times (4 + 10) \times 4 = 28\ cm^2$

Q50. e

let side of square be x cm

$$\frac{x^2}{10x} = \frac{4}{5}$$

$x = 8\ cm$

Diagonal of square = $\sqrt{2}x = 8\sqrt{2}\ cm$