# IASBABA'S 60 DAYS PLAN

# CSAT (SOLUTIONS)

Q.1) Solution (c)

First light flashes after 60/7 sec

Second light flashes after 120/13 sec they blink together after

( LCM of 60/7 , 120/13) = 120sec = 2 min,

So in one hour they blink together = 60/2=30 times.

Q.2) Solution (a)

Since PQR is divisible by 3 hence P+Q+R must be divisible by 3.

Now PRQ is divisible by 6 which means the number PQR is an even number

Because for it to be divisible by 6, it should be divisible by 2 and 3 first

The minimum value of three digit number PQR=123, and the PRQ=132.

So the sum of digits is 6.

Q.3) Solution (a)

Let the numbers are in the form of (10x+y), so when the digits of the number are reversed the number becomes (10y+x).

According to question,

(10y+x) - (10x+y) = 18;

9(y-x) = 18; →y-x = 2.

So, the possible pairs of (x, y) are (1, 3), (2, 4), (3, 5), (4, 6), (5, 7), (6, 8) and (7, 9).

But, we need the number other than 13.

Thus, there are 6 possible numbers i.e. 24, 35, 46, 57, 68, 79.

So, total numbers of possible numbers are 6.

Q.4) Solution (b)

In column I; (6-3)×10 =30

In column II; (8-6)×9=18

Therefore In column III; (5-4)×11=11

Q.5) Solution (c)

Let the total work be 3 units and additional men employed after 18 days be 'x'.

➔Work done in first 18 days by 20 men working 8 hours a day = (1/3) x 3 = 1 unit

➔ Work done in last 10 days by (20 + x) men working 9 hours a day = (2/3) x 3 = 2 unit

Here, we need to apply the formula M1 D1 H1 E1 / W1 = M2 D2 H2 E2 / W2, where

M1 = 20 men D1 = 18 days H1 = 8 hours/day W1 = 1 unit

E1 = E2 = Efficiency of each man

M2 = (20 + x) men D2 = 10 days H2 = 9 hours/day W2 = 2 unit

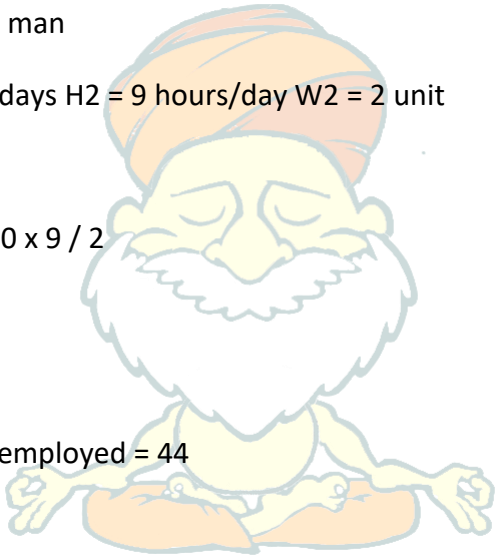
So, we have

20 x 18 x 8 / 1 = (20 + x) x 10 x 9 / 2

➔ x + 20 = 64

➔ x = 44

Therefore, additional men employed = 44



Q.6) Solution (d)

Let the cost price be Rs 100

Marked price = Rs (100 + 20% of 100) = Rs 120

The goods are sold at the discount of 10%.

S.P. = (120 – 10% of 120)

➔ Rs (120 – 12) = Rs 108

Profit = Rs (108 – 100) = Rs 8

Profit percentage = 8/100*100 = 8%

Q.7) Solution (d)

Let the sum invested in Scheme A be Rs X and that in Scheme B be Rs (12800 - X)

Then, (X*12*2)/100 + ((12,800-X)*9*2)/100 = 2,400

24X - 18X = 2,40,000 - (12,800 x 18)

6X = 9,600

X = 1,600 Rs

So, sum invested in Scheme B = Rs (12,800 – 1,600) = Rs 11,200.

Q.8) Solution (c)

From the first paragraph it is apparent that the author provides generalised explanation for the world food shortages and provides evidence such as fish-protein concentrate and protein from algae grown on petroleum substrates, have since fallen by the wayside.

Q.9) Solution (d)

From the second paragraph we can extract this "For example, the better protein quality in tortillas made from opaque-2 maize will be of only limited benefit to a family on the margin of subsistence if the new maize is not culturally acceptable or is more vulnerable to insects."

Hence option d is correct

Q.10) Solution (c)

Again from the second paragraph we can observe the following statements

"Security of crop yield, practicality of storage, palatability, and costs are much more significant than had previously been realized by the advocates of new technologies."

Also…… the better protein quality in tortillas made from opaque-2 maize will be of only limited benefit to a family on the margin of subsistence if the new maize is not culturally acceptable

From these statements we can infer that author is opposed to the case of Quality of the crop's protein in the success of a new food crop

Q.11) Solution (b)

The first paragraph says "Recent innovations such as opaque-2 maize, Antarctic krill, and the wheat-rye hybrid triticale seem more promising, but it is too early to predict their ultimate fate."

Hence option b is correct

Q.12) Solution (c)

In the second paragraph author makes a strong case for the economic policies of the government like this "economic factors and governmental policies also strongly influence the ultimate success of any innovation."

He further continues by saying ….. they tend to be the losers in this system unless they are aided by a government policy that takes into account the needs of all sectors of the economy.

Hence option c is the correct answer

Q.13) Solution (a)

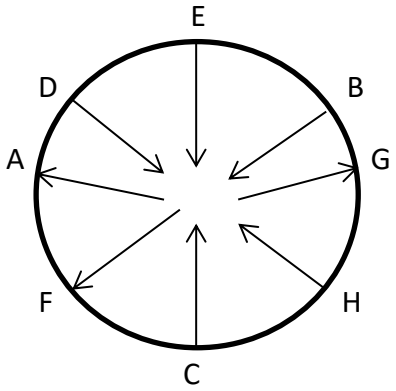
You have to select 2 cards from 5.

Since the order in which they are drawn matters,

There are 5P2 = 5!/3! = 20 elementary events from which there are 4 favourable number of cases: 5 before 4, 4 before 3, 3 before 2 and 2 before 1.

Hence, probability = 4/20 = 1/5

Q.14) Solution (c)




Following the final solution we can say that D sits second to the right of F.

Hence, the correct answer is option c.

Q.15) Solution (a)

Here, we can see that position of none of the persons is unchanged

Q.16) Solution (d)

Following the final solution we can say that C sits in front of E.

Q.17) Solution (a)

Following the final solution we can say that only one person sit between E and A when counted from the right of A.

Q.18) Solution (c)

Following the final solution we can say that D sits third to the left of G.

Q.19) Solution (d)

Logic is 2×1 + 1 = 3, 3 × 2 + 4 =10, 10 × 3 + 9 = 39, 39 × 4 + 16 = 172…. So in place of 38, it should be 39.

Q.20) Solution (d)

The logic is 8 × 3 – 5 = 19, 19 × 3 – 5 = 52, 52 × 3 – 5 = 151. So in place of 447, it should be 448.

Q.21) Solution (c)

Logic is 4 × .5 = 2, 2 × 1.5 = 3, 3 × 2.5 = 7.5, 7.5 × 3.5 = 26.25. In place of 26.75, it should be 26.25.

Q.22) Solution (c)

The passage says "A significant factor in this shifting world economy is the trend toward regional trading blocs of nations, which has a potentially large effect on the evolution of the world trading system. Two examples of this trend are the United States-Canada Free Trade Agreement and Europe 1992"

Hence option c is correct

Q.23) Solution (a)

The passage says "Two examples of this trend are the United States-Canada Free Trade Agreement and Europe 1992, the move by the European Community to dismantle impediments to the free flow of goods, services, capital, and labour among member states by the end of 1992."

From this we can infer that there were restrictions on commerce between the member nations prior to the adoption of the Europe 1992 program

Q.24) Solution (a)

But a historical perspective leads to a different conclusion. When the two top Japanese automobile makers matched and then doubled United States productivity levels in the mid-sixties..

This line makes it clear that option a is the correct answer

Q.25) Solution (a)

"Surprisingly, however, when we added a large amount of protein to the meal, brain tryptophan and serotonin levels fell."

From this line from the passage we can infer that option a is correct

Q.26) Solution (c)

"We gave the rats a carbohydrate-containing meal that we knew would elicit insulin secretion"

From this line from the passage we can infer that option a is correct

Q.27) Solution (c)

"Since protein contains tryptophan, why should it depress brain tryptophan levels? The answer lies in the mechanism that provides blood tryptophan to the brain cells. This same mechanism also provides the brain cells with other amino acids found in protein, such as tyrosine and Leucine"

From this argument we can infer that the author is explaining why a particular research finding was obtained

Q.28) Solution (b)

60 men can make a road in 50 days.

=> Total work = 60 x 50 = 3,000 units

Now, 60 men start working but after every ten days, 5 men leave the work.

=> Work done in first 10 days = 60 x 10 = 600 units and total work done = 600 units

=> Work done in next 10 days = 55 x 10 = 550 units and total work done = 1,150 units

=> Work done in next 10 days = 50 x 10 = 500 units and total work done = 1,650 units

=> Work done in next 10 days = 45 x 10 = 450 units and total work done = 2,100 units

=> Work done in next 10 days = 40 x 10 = 400 units and total work done = 2,500 units

=> Work done in next 10 days = 35 x 10 = 350 units and total work done = 2,850 units

=> Work done in next 5 days = 30 x 5 = 150 units and total work done = 3,000 units

Therefore, total time (days) taken to make the road = 65 days

Q.29) Solution (c)

Since we know one outcome is head, there are only three possibilities {h, t}, {h, h}, {t, h}

The probability of both heads = 1/3

Q.30) Solution (b)

A 18 sided polygon has 9 diagonals that are passing through the geometrical centre of it

Each pair of diagonal will give a specific rectangle

Hence the total rectangles that can be formed in 18 sided polygon = $9C_2$ = (9*8)/2 = 36

Q.31) Solution (c)

In the first and second statements, the common code digit is '5' and the common word is 'bad'.

So, '5' stands for 'bad'.

In the second and third statements, the common code digit is '7' and the common word is 'pictures'.

So, '7' means 'pictures'.

Thus, in the second statements, '8' means 'see'.

Q.32) Solution (b)

In the given code, A = 2, B = 4, C = 6,...., Z = 52.

So, CAT = 6 + 2 + 40 = 48 and

BOSS = 4 + 30 + 38 + 38 = 110

Q.33) Solution (c)

Let the speed of the two trains be 9x and 8x.

Then, 8x = 800 / 8

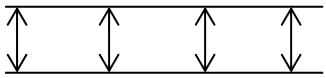
⇒ 8x = 100 ⇒ x = 12.5 km/h.

Hence, speed of the first train = 9x = 9 × 12.5 = 112.5 km/h

Q.34) Solution (d)

According to the problem statements the final seating arrangement will be

Rocky Arpita Siddu Pavitra **Bench 2**



**Bench 1**

Pinky Amogh Rosy Diana

Clearly Pinky faces Rocky

Q.35) Solution (a)

From the final arrangement it is clear that Rosy sits on bench 1 and is the odd one out because all other persons sit on bench 2.

Q.36) Solution (a)

Diana and Rocky sit at the extreme ends

Q.37) Solution (b)

As seen clearly from the arrangement, Arpita sits second to the right of Pavitra

Q.38) Solution (a)

"Already, the country has chalked out an ambitious policy on renewable energy, hoping to generate 175 gigawatts of power from green sources by 2022."

If the country has hoped to generate power through renewable energy then there is no point to shift focus from it. Thus statement 3 is absurd.

The phrase 'chalked out' means to outline or to plan.

This makes statement II wrong as it is about focusing only and not shaping that focus. In this scenario, statement 1 gives the correct connotation as it implies that the country has planned to do so.

Q.39) Solution (b)

Of course, India could further raise its ambition in the use of green technologies and emissions cuts, which would give it the mantle of global climate leadership.

With the above excerpt it is clear that statements 1 and 2 are the only factors that contribute India to be a global leader.

Statement 3 is not mentioned in the passage in context of ensuring India as a global leader of climate change.

Q.40) Solution (a)

"What is not, however, is the impact of extreme weather events such as droughts and floods that would have a bearing on economic growth."

With the above text it is clear that Weather condition is the only factor that could affect economic growth of a country.

Options 2,3 and 4 are not related to the passage

Q.41) Solution (b)

India's progress in reducing the intensity of its greenhouse gas emissions per unit of GDP by 20-25% from 2005 levels by 2020, based on the commitment made in Copenhagen in 2009.

This makes statement 1 to be incorrect.

As the 23rd conference of the UN Framework Convention on Climate Change in Bonn shifts into high gear,..

Thus statement 3 is also incorrect. Hence option b is correct.

Q.42) Solution (d)

"Early studies also suggest that it is on track to achieve the national pledge under the 2015 Paris Agreement for a 33-35% cut in emissions intensity per unit of growth from the same base year by 2030"….

This shows that India is to achieve 33-35% cut in emissions intensity by 2030. It has not achieved yet.

Thus statement 1 is incorrect

...Transport Decarbonisation Alliance has been declared. It is aimed at achieving a shift to sustainable fuels, getting cities to commit to eco-friendly mobility and delivering more walkable communities, all of which will improve the quality of urban life.

It is clear from the above underlined text that it's Transport Decarbonisation Alliance.

Thus statement 2 is also incorrect

….developing countries including India are focussing on the imperatives of ensuring adequate financing for mitigation and adaptation.

Thus statement 3 is correct

Q.43) Solution (a)

"In the Middle Ages, however, the practice of ransoming, or returning prisoners in exchange for money, became common. Though some saw this custom as a step towards a more humane society, the primary reasons behind it were economic rather than humanitarian."

In this excerpt from the passage the author is saying about the practice of ransoming and in the further paragraphs he explains the economic basis for that practice.

Q.44) Solution (a)

"One such device was a rule asserting that the prisoner had to assess his own value. This compelled the prisoner to establish a value without much distortion"

From this statements we can conclude that option a is correct

Q.45) Solution (c)

"In the Middle Ages, however, the practice of ransoming, or returning prisoners in exchange for money, became common. Though some saw this custom as a step towards a more humane society, the primary reasons behind it were economic rather than humanitarian."

These lines from the passage support the answer

Q.46) Solution (b)

"In those times, rulers had only a limited ability to raise taxes. They could neither force their subjects to fight nor pay them to do so."

This line suggest the lesser degree of direct control medieval rulers had over their subjects

Q.47) Solution (a)

In statements 1 and 2, the common code word is 'nu' and the common word is 'milk'

So, 'nu' means 'milk'

In statements 2 and 4, the common code word is 'jai' and the common word is 'murder'

So, 'jai' means 'murder'

Thus, in statements 2, 'tode' represents 'is'

Q.48) Solution (b)

We get the series of publications as n, n+7, n+14, n+21, n+28, n+35, n+42.

We know the formula for Sum of AP series

Sn = n/2[2a + (n-1) d]

Sum of publications = 13524 = 7/2[2n + (7-1)*7]

We get, n = 1911

Q.49) Solution (a)

Since they can do 17 programs in 17 days, Then 48 programs can be done in 48 hours respectively.

Also they take 30 hours interval

Therefore, total time they take to do 48 programs is 48 days 30 hours

Q.50) Solution (b)

We need to use f(1) to calculate the value of f(17)

f(17) can be written as f(1+16)

f(16) can be written as f(8+8)

f(8) can be written as f(4+4)

f(4) can be written as f(2+2)

f(2) can be written as f(1+1)

f(1) = 0, so f(2) = f(1+1) = f(1)+f(1)+4(9*1*1-1) = 32.

f(4) = f(2+2) = f(2)+f(2)+4(9×2×2 – 1) = 32+32+4×35 = 204

f(8) = f(4+4) = f(4)+f(4)+4(9×4×4 – 1) = 204+204+4×143 = 980

f(16) = f(8+8) = f(8)+f(8)+4(9×8×8 – 1) = 980+980+4×575 = 4260

f(17) = f(1+16) = f(16)+f(1)+4(9×16×1 –1) = 4260+0+ 4×143 = 4832

Q.51) Solution (b)

Given, quantity of the cocktail = 200 litres

If Beer : Vodka = 2 : 3

Then quantity of Beer = 2/5(200) = 80 litres

And quantity of Vodka = 3/5(200) = 120 litres

As per the question,

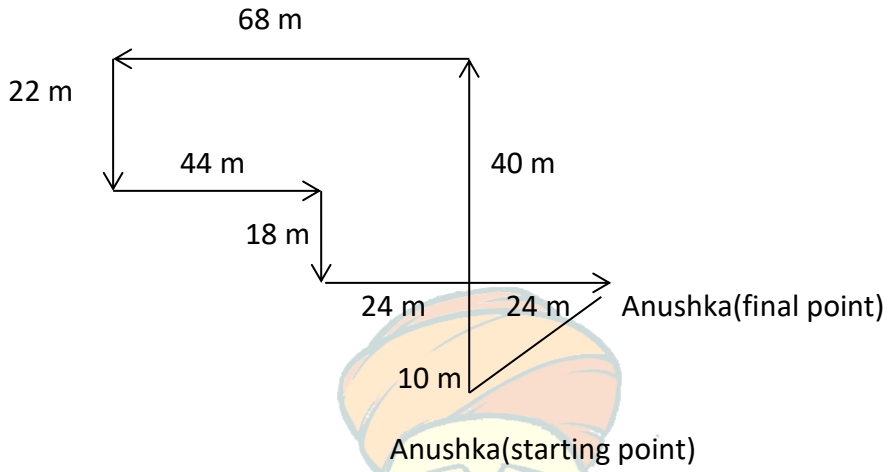
(80 + x)/120 = 3/2

⇒ X = 100 litres

Therefore, the quantity of Beer to be added is 100 litres

Q.52) Solution (d)

Using the instructions given in the problem,




Using Pythagoras theorem, We find the distance to be = $24^2 + 10^2 = 26^2$, Hence the shortest distance of Anushka's starting point and final point is 26 m, and she is in northeast direction with respect to her starting point.

Q.53) Solution (c)

Let the side of the equilateral triangle be 'a' unit and that of the regular hexagon be 'b' unit.

So perimeter of the triangle = 3a and perimeter of the hexagon is 6b unit.

or, 3a = 6b

or a/b = 2/1

The area of the equilateral triangle = sqrt(3)/4 $a^2$

The area of the regular hexagon = 3 *sqrt(3)/2 $a^2$

Solving this and substituting a/b we get the answer as 2:3

Q.54) Solution (a)

X number of bangles cost her Y rupees. So, 1 bangle will cost her Y/X rupees.

12 bangles will cost her rupees 12 Y/X.

The shopkeeper says,

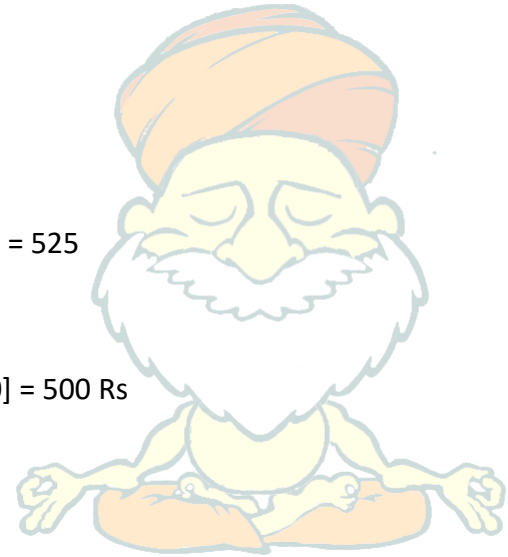
X + 10 bangles cost her 2 rupees

1 bangle will cost her 2/(x+10) rupees

12 bangles will cost her 24/(x+10) rupees

So, 12Y/X – 24/(10+X) = 4/5

Analysing the given choices, we get (5, 1) satisfies the equation.



Q.55) Solution (a)

Let the sum be Rs P

Then,$[P (1 + (10/100)^2 - P] = 525$

On solving, P = 2,500 Rs

Hence, SI = [2,500*5*4/10] = 500 Rs

Q.56) Solution (d)

Let SP is X

Arun's profit = X*20/120 = X/6 [Arun calculated his profit % on the selling price, so at 20% profit, selling price = 100+20] Parul's profit =X*20/100 = X/5

Difference is X/6 - X/5=150

X/30=150 ➔ X=4500

Q.57) Solution (c)

Let's try to find the relative speed = 45 – 9 = 36km/hr

= 36 * 5/18 = 10m/s

Now the total distance needed to be covered by the train to completely cross the athlete = 240 + 120 = 360m

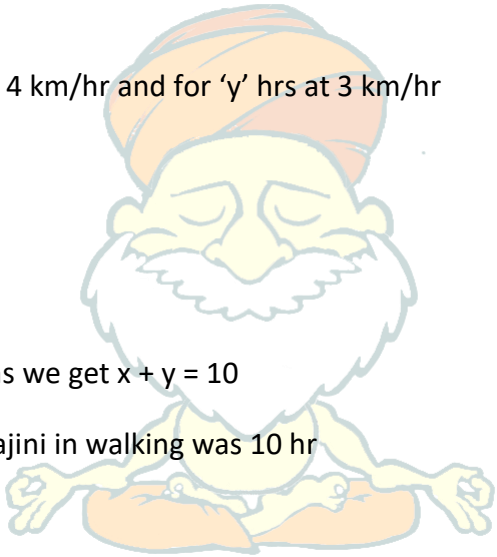
So time = distance/speed = 360/10 = 36 seconds

Q.58) Solution (b)

There are in all 20 places out of which if one girl sits in one position then the other girl may sit either to her left or right skipping one place, which is to be filled by a boy. So total number of ways the boys can sit = 18! ways and girls may alternate their positions

Therefore the answer would be = 18! * 2 ways.

Q.59) Solution (c)



Let Rajini walk for 'x' hrs at 4 km/hr and for 'y' hrs at 3 km/hr

Given,

4x + 3y = 36

3x + 4y = 34

Solving these two equations we get x + y = 10

Hence the time spent by Rajini in walking was 10 hr

Q.60) Solution (c)

Let the total capacity of the tank be 'x' litres

According to the question,

=> x/8 + 30 = x/5

=> x/5 – x/8 = 30

=> x = 400 litres

Q.61) Solution (b)

Assuming that 1 unit of work is done in 1 hour

Let's calculate the total number of working hours:

=> 4 * 8 * 5 = 160 units

Now the work is doubled:

=> 160 * 2 = 320 units

Let 'x' be the number of hours taken by 2 men to complete the work in 20 days.

Therefore,

=> 2 * 20 * x = 320

=> x = 8 hours

Q.62) Solution (c)

We have two dice one is black and other one is red: There will be total 36 outcomes

We have to find the probability of outcome of first dice divides outcome of second one.

1 divides 1, 2, 3, 4, 5, 6.

2 divides 2, 4, 6.

3 divides 3, 6.

4 divides 4.

5 divides 5.

6 divides 6.

There are 14 number which will be counted in favourable outcome;

probability = favorable outcome / total outcome i.e. = 14 / 36.

Q.63) Solution (d)

Given that, Diagonal of Square = Diameter of Circle.

Let side of square be x.

From Pythagoras theorem

Diagonal = √(2*x*x)

We know area of square = x * x = d

Diameter = Diagonal = √(2*d)

Radius = √(d/2)

Area of Circle = π * √(d/2) * √(d/2) = 1/2 * π * d

Q.64) Solution (a)

A computer can be declared faulty in two cases

1) It is actually faulty and correctly declared so (p*q)

2) Not faulty and incorrectly declared (1-p)*(1-q)

Therefore total probability is pq + (1-p)*(1-q)

Q.65) Solution (c)

It is given that A, B and C makes 60, 30 and 40 cakes respectively in an hour.

=> In 30 minutes, they will make 30, 15 and 20 cakes respectively.

So, in one cycle of 1 hour 30 minutes where each works for 30 minutes, cakes made = 30 + 15 + 20 = 65

Now, in 2 cycles (3 hours), 130 cakes would be made.

In the next 30 minutes, A would make 30 cakes.

So, total time elapsed = 3 hours 30 minutes and cakes made = 130 + 30 = 160

In the next 30 minutes, B would make 15 cakes.

So, total time elapsed = 4 hours and cakes made = 160 + 15 = 175

In the next 15 minutes, C would make 10 cakes.

So, total time elapsed = 4 hours 15 minutes and cakes made = 175 + 10 = 185

Therefore, total time taken = 4 hours 15 minutes

Q.66) Solution (a)

Let the ten's digit be x.

Then, unit's digit = x + 2.

Number = 10x + (x + 2) = 11x + 2.

Sum of digits = x + (x + 2) = 2x + 2.

(11x + 2)(2x + 2) = 144

22x2 + 26x - 140 = 0

11x2 + 13x - 70 = 0

(x - 2)(11x + 35) = 0

x = 2.

Hence, required number = 11x + 2 = 24.

Q.67) Solution (d)

The gents will be arranged in 20! ways. Now, there are a total of 21 possible places available between gents such that no 2 ladies can be placed together (alternate sequence of gents and ladies, starting and ending positions for ladies).

Therefore, the 18 ladies can stand at these 21 places only.

Hence, the number of ways = $20!* {}^{21}P_{18}$

Q.68) Solution (a)

Using the facts given in the problem

| Day | Person | Degree |
|---|---|---|
| Monday | A | MBA<br>B.E. |
| Tuesday | F | |
| Wednesday | C | B.A. |
| Thursday | E<br>D | |

Now using the following references

G has neither B.Com nor B.E. in graduation.

The one who has BCA has interview with the one who has BBA.

The one who has BCA does not have interview on Tuesday neither with B and F.

The final arrangement will be

| Day | Person | Degree |
|---|---|---|
| Monday | A<br>B | MBA<br>B.E. |
| Tuesday | F<br>G | B.Com<br>M.A. |
| Wednesday | C | B.A. |
| Thursday | E<br>D | BCA<br>BBA |

Following the final solution we can say that B has interview on Monday.

Q.69) Solution (d)

G has graduation degree in M.A.

Q.70) Solution (b)

Following the final solution we can say that A – MBA is the correct combination.

Q.71) Solution (c)

D has interview scheduled on the same day as E.

Q.72) Solution (d)

F has interview scheduled on the same day as the one who has M.A.

Q.73) Solution (d)

A and B have interview on Monday

Q.74) Solution (a)

Let son's present age be x years. Then, (38 − x ) = x

⇒2x = 38

x = 19

Son's age 5 years back = 19 − 5 = 14 years

Q.75) Solution (c)

Each letter of the 1st group is moved 5 steps forward to obtain the corresponding letter of the 2nd group. So, the answer is 'TVX'.

Q.76) Solution (b)

Let the ten's and unit digit be X and 8/X respectively.

Then (10X + 8/X) + 18 = 10X (8/X) + X

$10X^2 + 8 + 18X = 80 + X^2$

$9X^2 + 18X - 72 = 0$

$X^2 + 2X - 8 = 0$

(X + 4)(X - 2) = 0

X = 2.

Q.77) Solution (b)

Let the numbers be 17x and 17y where x and y are co-prime.

LCM = 17xy Now, 17xy = 714;

xy = 42 = 6*7;

→x = 6 and y = 7;

Or x = 7 and y = 6;

1st number = 17*6 = 102;

2nd number = 17*7 = 221;

Sum = 102+119 = 221.

Q.78) Solution (c)

Using options, we find that four consecutive odd numbers are 37, 39, 41 and 43. The sum of these 4 numbers is 160, when divided by 10; we get 16 which is a perfect square.

Thus, 41 is one of the odd numbers

Q.79) Solution (d)

Let the distance covered be D m

The time to cover the starting distance = D/18 secs.

The time taken for the reverse journey = D/28 secs.

According to the question,

D/18 – D/28 = (40 × 60)

On solving this we get,

D = 2400 × 252/5 = 120960 m

Now, the total time taken = (D/18) + (D/28) + 2400 = 13440 seconds

= 3 hours and 44 minutes

Therefore, the bus reaches back at 9:44 PM

Q.80) Solution (b)

Let us solve this by using options

Let's consider the first option. If 12 questions in all were answered correctly, then the total score = 12 * 4 = 48 marks.

If 12 questions were answered correctly, then 18 questions were wrongly answered. So total deductions = 18 * 2 = 36 marks.

So total score = 48 – 36 = 12 which is not correct.

Let's consider the second option. If 10 questions in all were answered correctly, then the total score = 10 * 4 = 40 marks.

If 10 questions were answered correctly, then 20 questions were wrongly answered. So total deductions = 20 * 2 = 40 marks.

So total score = 40 – 40 = 0