All India Mock SBI PO Prelims 11-Sep-2023

Directions (1-7): Read the following passage and answer the questions given below. Some words are highlighted to help you answer some of the questions.

Cybersecurity is the practice of being protected against the criminal or unauthorized use of electronic data, or the measures taken to achieve this. At least, that's what the dictionary says. Over the years the term cybersecurity has been thrown around to the point where it is almost synonymous with terms like IT security or information security. It's kind of like saying every square is a rectangle, but not every rectangle is a square.

Every square is a rectangle because a square is a quadrilateral with all four angles being right angles. Similarly, cybersecurity is a part of the IT security umbrella, along with its counterparts, physical security and information security. But not every rectangle is a square, since the criteria to qualify as a square means all sides must be the same length. The point is, not all IT security measures qualify as cybersecurity, as cybersecurity has its own distinct assets to protect.

CompTIA's Chief Technology Evangelist, James Stanger says it best when he defines cybersecurity as "focusing on protecting electronic assets – including internet, WAN and LAN resources – used to store and transmit that information." Of course, the threat to these electronic assets are hackers who have **malicious** intent to steal proprietary data and information via data breaches. Thus, it would seem the fully realised definition should include an evolving set of cybersecurity tools designed to protect confidential data from unauthorized access. To do so, it's necessary to consider how people, processes and technology all play equally important roles in keeping information safe.

One of the many advantages to living in a world where every device is _____ is convenience. It's incredibly easy to conduct work, manage your social calendar, shop and make appointments from your smartphone or device. That's why it's become second nature to many of us.

But, of course, the **convenience** of connected data also means threats from bad actors can do a lot of damage. Cybersecurity initiatives are essential to protecting our data and thus, our way of life.

Q1. Which of the following statements is inferred from the passage?
(a) People, processes and technology all play very important roles in keeping information safe.
(b) Cyber-attacks can have various objectives like financial gain, disruption and revenge and cyberwarfare.
(c) Every square is a rectangle but every rectangle is not a square.
(d) Brutal terrorist attacks all take place due to lack of cyber security.
(e) None of these.

Q2. Choose the most appropriate antonym of the word 'MALICIOUS', as highlighted in the given passage.
(a) malignant
(b) decent
(c) mischievous
(d) nasty
(e) None of these

Q3. Choose the most appropriate word from the following options to fill in the blank in the given passage.
(a) worsening
(b) earnest
(c) reluctant
(d) connected
(e) esurient

Q4. Choose the most appropriate synonym of the word 'CONVENIENCE', as highlighted in the given passage.
(a) annihilation
(b) usefulness
(c) hindrance
(d) accessory
(e) All of these

Q5. What are the threats to the electronic assets mentioned in the passage?
(a) Exploitation of weakness of and breaches in data security by hackers
(b) Governments that try to incept data transmissions for the purposes of spying
(c) Inter-governmental policies putting up restrictions on means of data security
(d) Knowledge of mechanisms of cybersecurity widely available to the public
(e) All of these

Q6. Which of the following most resembles the definition of cybersecurity according to the author?
(a) Cybersecurity is defined as the maintenance of internet resources in order of sustenance of security measures.
(b) Cybersecurity can be defined as the measures taken by a particular service to strengthen the security on the service for the protection of data.
(c) Cybersecurity incorporates any measures taken towards securing electronic assets responsible for storage of transmission of data.
(d) Cybersecurity involves the privacy settings chosen by the user on an electronic platform regarding the sharing of private data.
(e) None of these

Q7. Which of the following statements does the passage mention to be true?
(a) Cybersecurity initiatives are non-essential to overall structure of society and thus, can be neglected in that regard only.
(b) The full measure of cybersecurity can only be realised by the evolution of cybersecurity tools designed to protect confidential data from unauthorized access.
(c) Both (a) and (b)
(d) It's incredibly difficult to conduct work, manage your social calendar, shop and make appointments from your smartphone or device
(e) None of these

Q8. Which of the given statements cannot be justified from the information in the passage?
(a) Malware is a software used to disrupt computer operation, gather sensitive information, or gain access to private computer systems.
(b) Both (A) and (C)
(c) It is said that future wars will not be like traditional wars fought on land and air but will take the form of cyber warfare.
(d) Cybersecurity is often confused with IT security and information security due to lack of awareness.
(e) None of these

Directions (9-14): In the following questions, a paragraph is given. There are several words which are highlighted, each followed by a number. These words may or may not be used in their correct sense in the given paragraph. The numbers provided with these words are then followed by five options. Each option contains words that can replace the words in the paragraph. You need to find the words that can replace the highlighted words and mark them as your answers. If the word highlighted is used correctly then mark option (E) i.e. **"**No replacement is required" as your answer.

Q9. Print media is dying. And social media has become a **defunct (9)** platform for the exchange of what maybe widely divergent views. These are perspectives which carry factual weight. Having said this, the curation of an international online **notion (10)** has undoubtedly brought with it enhanced citizens participation across democratic processes and broader social movements – but at the same time, one feels that the role of independent media and journalism as bearers of the foundations of democratic systems, is slowly but surely **diminishing (11)**.
The good thing about social media is that everyone can have an opinion or a voice on a particular issue – which unfortunately also seems to be a bad thing in certain cases. This is where it gets **minimising (12)**. On one end norms such as freedom of thought and expression are universally accepted as pillars of constitutionally democratic systems – **challenge (13)** free speech in any form is thus a touchy subject. On the other end there are those who argue that free speech has its defined limits – free speech can be censored if one is using their perspectives as a means to incite hate or violence. Policymakers have not found a **vintage (14)** answer to which of these two positions is correct and applicable in the context of a connected and deeply integrated global political order.
(a) mobilise
(b) traditionally
(c) toxic
(d) suspension
(e) No replacement required

Q10. Print media is dying. And social media has become a **defunct (9)** platform for the exchange of what maybe widely divergent views. These are perspectives which carry factual weight. Having said this, the curation of an international online **notion (10)** has undoubtedly brought with it enhanced citizens participation across democratic processes and broader social movements – but at the same time, one feels that the role of independent media and journalism as bearers of the foundations of democratic systems, is slowly but surely **diminishing (11)**.
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(a) ecosystem
(b) demand
(c) autonomous
(d) speedy
(e) No replacement required.

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(a) tryst
(b) recuperate
(c) justify
(d) organic
(e) No replacement required

Q12. Print media is dying. And social media has become a **defunct (9)** platform for the exchange of what maybe widely divergent views. These are perspectives which carry factual weight. Having said this, the curation of an international online **notion (10)** has undoubtedly brought with it enhanced citizens participation across democratic processes and broader social movements – but at the same time, one feels that the role of independent media and journalism as bearers of the foundations of democratic systems, is slowly but surely **diminishing (11)**.

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(a) unreliable
(b) tricky
(c) beautiful
(d) tremendous
(e) No replacement required

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(a) false
(b) auspicious
(c) costly
(d) limiting
(e) No replacement required

Q14. Print media is dying. And social media has become a **defunct (9)** platform for the exchange of what maybe widely divergent views. These are perspectives which carry factual weight. Having said this, the curation of an international online **notion (10)** has undoubtedly brought with it enhanced citizens participation across democratic processes and broader social movements – but at the same time, one feels that the role of independent media and journalism as bearers of the foundations of democratic systems, is slowly but surely **diminishing (11)**.

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(a) vehemently
(b) expansion
(c) debarred
(d) concrete
(e) No replacement required

Directions (15-19): In each of the questions given below four words are given in bold. These four words may or may not be in their correct position. The sentence is then followed by options with the correct combination of words that should replace each other in order to make the sentence grammatically and contextually correct. Find the correct combination of the words that replace each other. If the sentence is correct as it is then select option 'No correction required' as your choice.

Q15. With parts of the **pipes (1)** being covered after laying of the **canal (2)** and construction material and debris **strewn** (**3**) along the banks, **encroachers (4)** are taking over the canal.
(a) 2-4 and 1-3
(b) Only 2 - 4
(c) No correction required
(d) Only 1- 2
(e) 1-4 and 2-3

Q16. People thronged the burial **families** (**1**) to offer a range of dishes and **departed (2)** to the deceased members of their **ground (3)** in a symbolic gesture of love towards the **desserts (4)** ones.
(a)1-3 and 2-4
(b) Only 1 -3
(c) Only 2 -4
(d) No correction required
(e) 1-2 and 3-4

Q17. Authoritarian regimes, in **strength** (**1**), are static regimes **where** (**2**) a supreme leader **assumes (3)** know-it-all power and **essence** (**4**).
(a) Only 2 -3
(b) 1-3 and 2-4
(c) 1 -4 only
(d) No correction required
(e) Only 2 -4

Q18. Indian news consumers' trust in **lower (1)** TV news channels is much **private (2)** than their belief in newspapers and yet **source (3)** continues to be the dominant news **television (4)**.
(a) Only 2 -3
(b) 1-2 and 3-4
(c) 1 -4 only
(d) No correction required
(e) Only 2 -4

Q19. The Commission for Air Quality Management in NCR and the **adjoining (1) areas (2)** has developed a framework for the **effective** (**3**) prevention and control of stubble **burning** (**4).**
(a) Only 1 and 2
(b) Only 1 and 3
(c) 1-3 and 2-4
(d) 1-4 and 2-3
(e) No correction required

Directions (20-24): Certain words are highlighted in the following sentences. It is possible that one of them has incorrect spelling. Select the word which has been incorrectly spelled. If all of them are correct, choose (E) All are correct.

Q20. The renewable energy **revolution** is taking shape in India with the **first** bio-energy plant in Punjab **having** commenced **operrations** in October**.**
(a) revolution
(b) first
(c) having
(d) operrations
(e) All are correct

Q21. It has become common **practice** among farmers to **dispoze** off paddy s**tubble** by setting it on fire to prepare fields for the next crop, which has to be **sown** in a window of three to four weeks.
(a) practice
(b) dispoze
(c) stubble
(d) sown
(e) All are correct

Q22. There is a need to find **alternative** sources of energy in the form of **reneuable** energy which can **tide** away the oil price **shocks**.
(a) alternative
(b) reneuable
(c) tide
(d) shocks
(e) All are correct

Q23. For the second **straight** day, several leading names **struggled** to play to their **reputation** in both sections of the Asian Chess **championship**.
(a) straight
(b) struggled
(c) reputation
(d) championship
(e) All are correct

Q24. The European Central Bank **raised** interest rates and **announced** it was changing the terms of its loans to **commertial** banks in a bid to **shrink** its bloated balance sheet.
(a) raised
(b) announced
(c) commertial
(d) shrink
(e) All are correct

Directions (25-30): Each question below has one blank, which is indicating that something has been omitted. Find out which option can be used to fill up the blank in the sentence to make it grammatically as well as contextually correct.

Q25. Over his decade in power, Chinese President Xi Jinping has pushed a _____ anti-corruption drive that has seen tens of millions of cadres investigated.
(a) relentless
(b) favour
(c) narrowly
(d) possibility
(e) procured

Q26. The world has warmed since the start of the Industrial Revolution and already faces increasingly _____ climate-enhanced weather extremes like heatwaves and floods.
(a) underscored
(b) ferocious
(c) undermining
(d) lament
(e) inject

Q27. _____with COVID-19 cases, the health department decided to take the aid of district officials for providing better treatment to patients.
(a) arrival
(b) instinct
(c) inundated
(d) disappear
(e) cease

Q28. The HT technology is a killer technology that kills soil, microbes, pollinators, almost all medicinal herbs and _____ affects crop diversity.
(a) released
(b) coordinated
(c) ethic
(d) adversely
(e) yielding

Q29. The writer has tried to construct a _____ between faith and science, between myth and oral history, and between religion and culture, in his new novel.
(a) adverse
(b) bridge
(c) difficulty
(d) miniscule
(e) biogenic

Q30. Yudhishthira says a victory through gambling is no victory at all as the _____ will not earn any respect because of his success.
(a) gentle
(b) violent
(c) victor
(d) vengeance
(e) pride

Q31. The length and breadth of a rectangular field is 90 meters & 80 meters respectively. If the area of rectangular field is equal to the area of a square plot, then find the length of the diagonal of the square plot?
(a) 120 m
(b) 100 m
(c) 90 m
(d) 105 m
(e) 110 m

Q32. The present age of Ram is three times of his son's present age and two-third of his father's present age. At present, the average age of all three is 34 years. Find the difference between present age (in years) of Ram's son and his father's age?
(a) 36
(b) 42
(c) 48
(d) 54
(e) 52

Q33. S_1 is a series of five consecutive multiple of four whose sum is 100. S_2 is a series of four consecutive even inters such that the second smallest number of S_2 is six less than largest number of S_1. Find the average of series S_2.
(a) 28
(b) 25
(c) 32
(d) 34
(e) 23

Q34. 20 men and 35 women can complete a piece of work in 'y' and 'y – 3' days respectively, while 15 men and 20 women can complete same piece of work in 'x – 4' and 'x' days respectively. If a man is 60% more efficient than a woman, then find difference between x and y.
(a) 11
(b) 21
(c) 14
(d) 12
(e) 15

Q35. Rajdhani express is running at the speed of 90 km/hr and crosses a platform in 36 seconds. Another train which is 240 meters smaller than the Rajdhani express is running at speed of 54km/hr. Find in how much time the second train can cross the same platform?
(a) 44 seconds
(b) 42 seconds
(c) 32 seconds
(d) 36 seconds
(e) 40 seconds

Q36. A, B and C started a business with investment of Rs. 12,000, Rs. 12,000 and Rs. 8,000 respectively. B invested only for 'x' months, while C left the business 'x' month before a year. If A got Rs 1800 out of annual profit of Rs 3200, then find the value of 'x'.
(a) 2
(b) 8
(c) 6
(d) 4
(e) 5

Q37. In a test consisting of 120 questions carrying one mark each. Arpita answers 40% of the first 40 questions correctly. What percent of the other 80 questions does she need to answer correctly to score 60% in the entire test?
(a) 60%
(b) 50%
(c) 70%
(d) 75%
(e) 65%

Q38. A boat can swim 24 km upstream and 36 km downstream in 9 hours. If the difference between upstream speed and downstream speed of boat is 8 km/hr, then find the speed of boat in still water.
(a) 6 km/hr
(b) 9 km/hr
(c) 10 km/hr
(d) 8 km/hr
(e) 7 km/hr

Q39. 80 l mixture of milk and water contains 25% of water. If 24 l of mixture taken out from mixture, then find what quantity of water should be mixed in remaining mixture to make water 65% of resulting mixture?
(a) 56 l
(b) 44 l
(c) 42 l
(d) 40 l
(e) 64 l

Q40. Raja invested Rs. x in a bank offering 25% simple interest for four years. Sankalp invested Rs. (x+4000) in a bank offering 20% simple interest for three years. If the interest received by Sankalp is Rs.800 more than the interest received by Raja, then find the value of 'x'.
(a) Rs3000
(b) Rs2500
(c) Rs4000
(d) Rs4500
(e) Rs4200

Directions (41-45): Study the passage given below and answer the following questions.
The data given about selling price of six (A, B, C, D, E and F) different articles. The selling price of A is 80% more than that of C and selling price of D is 130% of B. The ratio of selling price of A to that of B is 36 : 25, while the selling price of E is equal to the average of selling price of B and C. The selling price of F is Rs.800 which is Rs.150 more than selling price of D.

Q41. If shopkeeper sold A at 10% loss and E at 12.5% profit, then find his overall profit/loss on selling A and E together is what percent of selling price of C?
(a) 12.5%
(b) 7.5%
(c) 16.5%
(d) 22.5%
(e) 15.5%

Q42. Find ratio of selling price of B & C together to selling price of E & F together.
(a) 3 : 4
(b) 4 : 5
(c) 18 : 25
(d) 20 : 23
(e) None of the above.

Q43. If shopkeeper marked C & F, 100% and 33⅓% above their cost price respectively and allowed 20% discount on each of C & F, then find total profit earned by shopkeeper on C & F.
(a) Rs.150
(b) Rs.270
(c) Rs.230
(d) Rs.180
(e) Rs.200

Q44. If shopkeeper allowed Rs.150 discount on each of D & E and he has marked D & E, 60% and 50% above their cost price respectively, then find cost price of D & E together are what percent of selling price of A?
(a) 140%
(b) 125%
(c) 195%
(d) 150%
(e) 180%

Q45. For how many articles, selling price of that particular article is more than the average of selling price of all six articles?
(a) 3
(b) 2
(c) 5
(d) 4
(e) None of the above.

Directions (46-50): Find the wrong number in the following number series.

Q46. 2030, 2050, 2000, 2100, 1900, 2300, 1500
(a) 1500
(b) 2030
(c) 2050
(d) 2100
(e) 1900

Q47. 10, 6, 6, 9, 18, 45, 135
(a) 9
(b) 18
(c) 135
(d) 10
(e) 45

Q48. 337, 318, 301, 278, 249, 218, 181
(a) 318
(b) 278
(c) 301
(d) 249
(e) 218

Q49. 75, 100, 200, 425, 820, 1450, 2350
(a) 2350
(b) 425
(c) 200
(d) 820
(e) 1450

Q50. 81, 100, 130, 171, 223, 285, 360
(a) 81
(b) 285
(c) 360
(d) 171
(e) 100

Directions (51-55): In each question two equations numbered (I) and (II) are given. You have to solve both the equations and mark appropriate answer.

Q51.
I. $2x^2 - 17x + 36 = 0$
II. $3y^2 - 22y + 40 = 0$
(a) If x<y
(b) If x>y
(c) If x≥y
(d) If x≤y
(e) If x=y or no relation can be established.

Q52.
I. $x^2 + 21x + 108 = 0$
II. $y^2 + 14y + 48 = 0$
(a) If x<y
(b) If x>y
(c) If x≥y
(d) If x≤y
(e) If x=y or no relation can be established.

Q53.
I. $2x^2 + 7x - 60 = 0$
II. $3y^2 - 28y + 64 = 0$
(a) If x<y
(b) If x>y
(c) If x≥y
(d) If x≤y
(e) If x=y or no relation can be established.

Q54.
I. $x^2 - 2x - 24 = 0$
II. $y^2 + 3y - 40 = 0$
(a) If x<y
(b) If x>y
(c) If x≥y
(d) If x≤y
(e) If x=y or no relation can be established.

Q55.
I. $x^3 = 729$
II. $y^2 - 15y + 54 = 0$
(a) If x<y
(b) If x>y
(c) If x≥y
(d) If x≤y
(e) If x=y or no relation can be established.

Directions (56-60): Bar- Graph given below shows the percentage of males out of total persons who visits zoo in six different cities. Study the bar-graph carefully & answer the question.
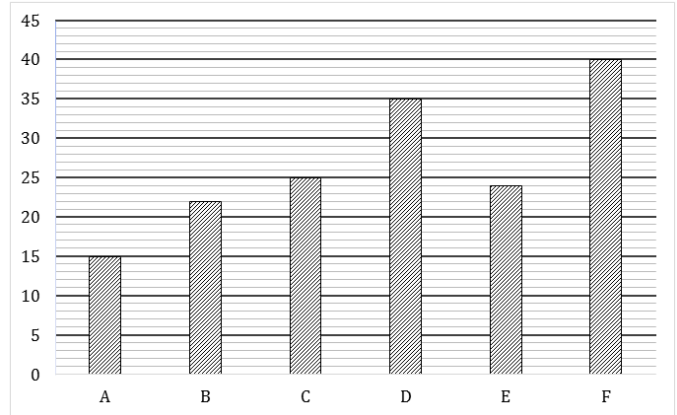
Q56. If total population visiting zoo in city C is 75,000 then find total female who visitor zoo in city C?
(a) 44,000
(b) 62,480
(c) 48,500
(d) 56,250
(e) 52,800

Q57. If ratio of total male population visiting zoo in city C to E is 2 : 3 then total population visiting zoo in city E is what percent of total population visiting zoo in city C?
(a) 120%
(b) 240⅓%
(c) 156¼%
(d) 180%
(e) 152½%

Q58. If total population in city F is 21000 of which 60% are visiting zoo. Then total male population visiting zoo in city F is how much more or less than total population in city A visiting zoo. Total population visiting zoo in city A is 50% more than total population visiting zoo in city F?
(a) 12,480
(b) 16,550
(c) 13,860
(d) 14,575
(e) 18,000

Q59. If males visiting zoo in city B is 4400 and males visiting zoo in city F is 50% of total males visiting zoo in city B then male zoo visitor in city B is what percent more or less than total zoo visitor in city F?
(a) 20%
(b) 25%
(c) 42½%
(d) 35%
(e) 47%

Q60. If total males visiting zoo in city E and A together is 39000 & males visiting zoo E is 60% more than A, then find total females visiting zoo in city E.
(a) 120,000
(b) 76,000
(c) 132,000
(d) 144,000
(e) 84,830

Directions (61-65): line graph given below shows the number of employees (in '00) in five different companies (P, Q, R, S & T) in 2018 & 2019. Study the radar chart given below and answer the following questions.
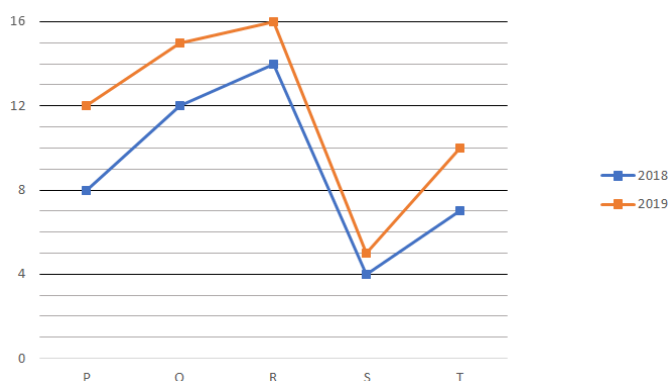
Q61. Total employees in P in 2018 & 2019 together are what percent more or less than total employees in Q & T together in 2019?
(a) 80%
(b) 30%
(c) 50%
(d) 20%
(e) 60%

Q62. If ratio of male employees to female employees in R in 2018 and 2019 is 3 : 2 and 5 : 3 respectively, then find ratio of number of male employees in R in 2018 and 2019 together to total employees in Q in 2018.
(a) 7 : 5
(b) 23 : 15
(c) 3 : 2
(d) 21 : 13
(e) 4 : 3

Q63. Total employees in R & T together in 2018 are what percent of total employees in S in 2018 & 2019 together?
(a) 233⅓%
(b) 266⅔%
(c) 250%
(d) 225%
(e) 275%

Q64. If total employees in U in 2018 are 900 more than total employees in T in 2018 and ratio of male employees to female employees in Q & U in 2018 is 11 : 9 and 3 : 7 respectively, then find number of female employees in Q & U together in 2018.
(a) 1450
(b) 1280
(c) 1340
(d) 1660
(e) None of the above.

Q65. Average number of employees in Q, R & S in 2019 are how much more or less than total employees in P & T together in 2018?
(a) 100
(b) 200
(c) 300
(d) 500
(e) 400

Directions (66-70): Study the following information carefully and answer the questions given below.

Six persons i.e., P, Q, R, S, T and U sit around a triangular table such that two persons sit at each side of the table. All of them face towards the centre of the table. Each of them wears different colour shirts i.e., Black, Blue, White, Red, Pink and Green. All the information is not necessarily in the same order.

The one who wears red coloured shirt sits second to the right of P. R sits adjacent to the one who wears red coloured shirt and both sit at the same side of the table. One person sits between R and U. The one who wears green coloured shirt sits second to the right of U. R doesn't wear green coloured shirt. S sits adjacent to P. Two persons sit between S and T who doesn't wear red coloured shirt. Q sits third to the left of the one who wears white coloured shirt. The one who wears pink coloured shirt sits to the immediate right of the one who wears blue coloured shirt.

Q66. How many persons sit between T and the one who wears black coloured shirt when counts to the left of T?
(a) Two
(b) Four
(c) Three
(d) One
(e) None

Q67. Which among the following statement(s) is/are not true?
(a) U sits second to the left of S
(b) S doesn't wear black coloured shirt
(c) T and R are immediate neighours
(d) P and U sit at the same side of the table
(e) All are true

Q68. If all the persons sit in alphabetical order in anticlockwise direction starts from P, then the position of how many persons remains unchanged (excluding P)?
(a) None
(b) Two
(c) Three
(d) One
(e) None of these

Q69. Who among the following wears black coloured shirt?
(a) U
(b) R
(c) Either R or T
(d) T
(e) P

Q70. Which among the following combination is correct?
(a) T- White
(b) U- Green
(c) Q- Black
(d) R-Blue
(e) None is correct

Directions (71-75): Study the following alpha numeric symbol series carefully and answer the questions given below:

7 Q T @ X 8 L 3 & U 4 7 X $ # 9 J B 8 % L β 1 9 F P ∞

Q71. How many symbols are there in the series which are immediately followed by a letter and immediately preceded by a number?
(a) None
(b) One
(c) Two
(d) Three
(e) Four

Q72. If all the symbols are dropped from the series, then which among the following will be the 13th element from the left end?
(a) 8
(b) L
(c) 9
(d) J
(e) U

Q73. What is the sum of the digits which are immediately followed by a consonant?
(a) 30
(b) 26
(c) 38
(d) 28
(e) 40

Q74. Which among the following element is 8th to the left of the symbol which is 4th from the right end in the series?
(a) 8
(b) L
(c) &
(d) T
(e) 3

Q75. How many letters are immediately preceded by an odd number?
(a) One
(b) None
(c) Three
(d) Two
(e) More than three

Q76. If all the digits within the given number are arranged in ascending order "9638572483" from left to right. Then, find the sum of the digits which are fifth from the left end and fourth from the right end?
(a) 14
(b) 12
(c) 13
(d) 11
(e) 15

Directions (77-81): Study the following information carefully and answer the questions given below.
Seven persons go to Shimla on seven different days from Monday to Sunday. Two persons go between A and B who goes after Thursday. C goes just before A. The number of persons goes before C is one less than the number of persons goes after D. G goes three persons before F and goes after E. At least one person goes before E.

Q77. How many persons go after A?
(a) One
(b) Two
(c) Three
(d) Four
(e) More than four

Q78. Who among the following goes on Wednesday?
(a) C
(b) A
(c) E
(d) D
(e) None of these

Q79. If the position of D and G interchanged then who among the following will go three persons before G?
(a) E
(b) A
(c) F
(d) Either A or F
(e) Either E or A

Q80. Which among the following statement(s) is/are true?
I. G goes after C
II. No one goes after F
III. More than three persons go between A and D
(a) Only I
(b) Both I and III
(c) Both I and II
(d) Only II
(e) All I, II and III

Q81. If C is related to E in the similar manner A is related to G, then who among the following is related to F?
(a) A
(b) D
(c) E
(d) B
(e) None of these

Q82. How many pairs of letters are there in the word **"BENEVOLENT",** each of which has as many letters between them as they have in English alphabetical series only in forward direction?
(a) One
(b) Three
(c) None
(d) Two
(e) Four

Directions (83-84): Study the following information carefully and answer the questions given below.
Seven persons play hide and seek and all of them hide in different direction at different distance with respect to each other. A is 5m to the west of D who is 7m to the north of G. I is 9m to the east of G. The distance between J and G is twice to the distance between A and D. J is to the west of I. H is 4m to the north of I. B is 11m to the south of G.

Q83. What is the total distance between A and B?
(a) 29m
(b) 25m
(c) 23m
(d) 18m
(e) 13m

Q84. In which direction is H hides with respect to B?
(a) South east
(b) South
(c) North west
(d) North east
(e) East

Directions (85-89): Study the following information carefully and answer the questions given below.
Eight persons i.e. A, B, C, D, E, F, G and H sit in a parallel row such that four persons sit in row 1 and the remaining four persons sit in row 2 but not necessarily in the same order. The persons sit in row 1 face south and the persons sit in row 2 face north. Each of them has different brand cars i.e., Ford, Fiat, Kia, Tata, Skoda, Toyota, Hyundai and Maruti. All the information is not necessarily in the same order.
H sits second to the left of the one who has Tata car. H sits at the extreme end of the row. Two persons sit between D and A. The one who has Skoda car sits second to the right of A. One person sits between B and C who faces the one who has fiat car. G sits immediate left of F who doesn't face north direction. The one who has kia car faces the one who has Toyota car. The one who has Ford car sits to the right of E. One person sits between C and the one who has Hyundai car.

Q85. Who among the following has Kia brand car?
(a) D
(b) H
(c) B
(d) Either D or H
(e) Either H or B

Q86. Which among the following statement(s) is/are not true?
(a) G faces E
(b) A doesn't sit at the extreme end
(c) D and H face opposite direction
(d) F has Skoda brand car
(e) All are true

Q87. Four of the following five are alike in a certain way and thus form a group. Who among the following does not belong to the group?
(a) D
(b) C
(c) H
(d) B
(e) E

Q88. Which among the following brand car does G have?
(a) Skoda
(b) Kia
(c) Maruti
(d) Fiat
(e) Hyundai

Q89. If all the persons in row 2 sit according to alphabetical order from left to right, then who among the following will face H?
(a) D
(b) F
(c) The one who has Skoda car
(d) G
(e) The one who has Fiat car

Q90. If we form a four-letter meaningful word by using the first, third, fifth and seventh letter from the left end of the word **"RANDOMLY",** then which of the following will be the third letter of the meaningful word thus formed? If more than one meaningful word is formed, mark Y as your answer. If no meaningful word is formed, mark X as your answer.
(a) X
(b) O
(c) L
(d) Y
(e) R

Directions (91-95): Study the information carefully and answer the questions given below.
In a certain code language
"Done better than before" is coded as "ed   be   fr   tn"
"Better days come before" is coded as "fr   be   yd   cm"
"Think than do now "is coded as "kt   wp   tn   nh"
"Days are better now" is coded as "rt   yd   be   wp"

Q91. What is the code for the words "better before" in the given code language?
(a) be   tn
(b) fr   rt
(c) be   fr
(d) fr   tn
(e) Can't be determined

Q92. Which among the following word is coded as "rt"?
(a) Do
(b) Think
(c) Come
(d) Are
(e) Days

Q93. If the phrase "think before act" is coded as "nh   fr   at" then what is the code for "act do"?
(a) nh   kt
(b) kt   at
(c) at   cm
(d) kt   cm
(e) None of these

Q94. Which among the following combination of word and its code is correctly matched?
(a) Are - wp
(b) Now - rt
(c) Days - fr
(d) Than - be
(e) Done – ed

Q95. What is the code for the word "do" in the given code language?
(a) cm
(b) rt
(c) wp
(d) kt
(e) be

Directions (96-100): Study the information carefully and answer the questions given below.

Nine persons work in a company in three different departments i.e. Finance, Production and HR. At least two persons work in each department.

P works with S but not in HR department. R works with Y but not in the same department as P works. T works only with W. V doesn't work with Y. The number of persons work in HR department is more than the number of persons work in Finance department. U and Q works in the same department. Even number of persons works in production department.

Q96. How many persons work in HR department?
(a) Three
(b) Four
(c) Two
(d) Either two or three
(e) Either three or four

Q97. Which among the following statement(s) is/are true?
I. Only two persons work in production department
II. Maximum number of persons works in HR department
III. R and P works in different departments
(a) Only I
(b) Both I and III
(c) Both I and II
(d) Only II
(e) All I, II and III

Q98. What is the sum of the number of persons work in both finance and HR departments?
(a) 5
(b) Either 7 or 6
(c) 7
(d) 6
(e) 4

Q99. In which among the following department does U works?
(a) Finance
(b) HR
(c) Production
(d) Either HR or Finance
(e) Either Production or HR

Q100. Four of the following five pairs are alike in a certain way and thus form a group. Which among the following pair does not belong to the group?
(a) P-T
(b) W-R
(c) Q-S
(d) Y-U
(e) V-R

S1. Ans.(a)
Sol. In the last paragraph, it is given that it's necessary to consider how people, processes and technology all play equally important roles in keeping information safe. Thus, it can be inferred that all these things play very important roles in keeping information safe. All the other options cannot be inferred. Hence, option (a) appears to be the most appropriate answer choice.

S2. Ans.(b)
Sol. Here, "malicious" means characterised by malice.
(a) malignant- used about a disease that spreads in the body, likely to cause death if not controlled.
(b) decent- honest and fair.
(c) mischievous- causing or showing a fondness for causing trouble in a playful way.
(d) nasty- very bad or unpleasant.

S3. Ans.(d)
Sol. The concerned sentence states that one of the many advantages to living in a world where every device is linked is convenience. Thus, we can infer that "connected" is the most appropriate word to fill in the given blank.
(a) worsening- to become worse or to make something worse.
(b) earnest- resulting from or showing sincere and intense conviction.
(c) reluctant- unwilling and hesitant; disinclined.
(d) craving- a powerful desire for something.
(e) esurient- hungry or greedy.

S4. Ans.(b)
Sol. Here, "convenience" means the state of being able to proceed with something without difficulty.
(a) annihilation- complete destruction or obliteration.
(b) usefulness- the quality or state of being useful.
(c) hindrance- an obstacle or obstruction.
(d) accessory- aiding an activity or process in a minor way; subsidiary or supplementary.

S5. Ans.(a)
Sol. In the third paragraph, second line, it is mentioned that the threat to electronic assets are hackers who have malicious intent to steal propriety data and information via data breaches. All the other options are not threats to electronic assets. Hence, option (a) is the most appropriate answer choice.

S6. Ans.(c)
Sol. Referring to the opening lines of the third paragraph, it is given
"CompTIA's Chief Technology Evangelist, James Stanger says it best when he defines cybersecurity as "focusing on protecting electronic assets – including internet, WAN and LAN resources – used to store and transmit that information." Hence, option (c) is correct.

S7. Ans.(e)
Sol. None of the statements can be verified to be true according to the passage, and thus, the correct option is option (e).

S8. Ans.(b)
Sol. From the first paragraph, it can be deduced that the author has used the example of a square and a rectangle to relate IT security and cyber security. He makes the user aware of the differences that have dissolved over the years between the terms, as he mentioned earlier in the passage, specifically, in the first paragraph. Hence, option (b) appears to be the most appropriate answer choice.

S9. Ans.(c)
Sol. The given sentence talks about the fact that digital media has become a medium to represent widely divergent views. Therefore, the highlighted word 'defunct doesn't fit contextually and needs to be changed. Its correct replacement is thus 'toxic'.
mobilise: to organise people or things to do something
traditionally: as part of a long-established custom, practice, or belief; typically
toxic: poisonous.
suspension: delaying something for a period of time
Further, "typically" is an adverb and cannot be used as an adjective is required to define the noun "social media".

S10. Ans.(a)
Sol. The given sentence talks about the fact that the curation of an international online network has undoubtedly brought with it enhanced citizens participation across democratic processes and broader social movements. Therefore the highlighted word 'notion' doesn't fit contextually and needs to be changed. Its correct replacement is thus 'ecosystem', because an ecosystem is a system controlled by flow of various components like data etc.
autonomous: independent and having the powers to make decision for oneself
notion: a conception of or belief about something
speedy: done or occurring quickly

S11. Ans.(e)
Sol. The word used is correct contextually and grammatically and no replacement of the word is required. Hence, option (e) is the correct answer choice.

S12. Ans.(b)
Sol. The given sentence talks about the fact that everyone seems to have an opinion on social media which sometimes is a bad thing and can get tricky. Therefore the highlighted word 'minimising' doesn't fit contextually and needs to be changed. Its correct replacement is thus 'tricky'.
unreliable: not able to be relied upon
tricky: difficult to do or deal with
tremendous: very great in amount, scale or intensity

S13. Ans.(d)
Sol. The given sentence talks about the fact that limiting free speech is a touchy subject because freedom of speech and expression is a very important pillar of democracy. Therefore, the highlighted word 'challenge' doesn't fit contextually and needs to be changed. Its correct replacement is thus 'limiting'.
false: not according with truth or fact
costly: expensive; costing a lot
auspicious: that seems likely to be successful in future
limiting: putting limits on what can happen or is possible

S14. Ans.(d)
Sol. The given sentence talks about the fact that free speech can be censored if one is using it as a means to incite hate or violence. The other means is to promote freedom. Policymakers have not found a definite answer to which of these perspectives is correct. Therefore, the highlighted word 'vintage' doesn't fit contextually and needs to be changed. Its correct replacement is thus 'concrete'.
vehemently: in a forceful, passionate or intense manner
expansion: the increase of something in size, number or importance
debarred: exclude or prohibit someone officially from doing something
concrete: real and definite, not existing in imagination

S15. Ans.(d)
Sol. Here, 1-2 i.e., 'pipes – canal' will be replaced to make the sentence grammatically and contextually correct.
The sentence thus formed is: With parts of the canal being covered after laying of the pipes and construction material and debris strewn along the banks, encroachers are taking over the canal.

S16. Ans.(a)
Sol. Here, 1-3 and 2-4 i.e., 'families–ground' and 'departed- desserts' will be replaced to make the sentence grammatically and contextually correct.
The sentence thus formed is: People thronged the burial ground to offer a range of dishes and desserts to the deceased members of their families in a symbolic gesture of love towards the departed ones**.**

S17. Ans.(c)
Sol. Here, 1-4, i.e., 'strength– essence' will be replaced to make the sentence grammatically and contextually correct.
The sentence thus formed is: Authoritarian regimes, in essence, are static regimes where a supreme leader assumes know-it-all power and strength.

S18. Ans.(b)
Sol. Here, 1-2 and 3-4 i.e., 'lower–private' and 'source- television 'will be replaced to make the sentence grammatically and contextually correct.
Indian news consumers' trust in private TV news channels is relatively much lower than their belief in newspapers and yet television continues to be the dominant news source.

S19. Ans.(e)
Sol. The sentence is correct as it is and no correction is required. Hence, option (e) is the correct answer choice.

S20. Ans.(d)
Sol. The word with incorrect spelling is: operrations. The correct spelling: operations.

S21. Ans.(b)
Sol. The word with incorrect spelling is: dispoze. The correct spelling is: dispose.

S22. Ans.(b)
Sol. The word with incorrect spelling is: reneuable. The correct spelling is: renewable.

S23. Ans.(e)
Sol. All the highlighted words have correct spellings. Hence, option (e) is the correct answer choice.

S24. Ans.(c)
Sol. The word with incorrect spelling is: commertial. The correct spelling is: commercial.

S25. Ans.(a)
Sol. Options (b), (d) and (e) don't fit meaningfully and hence get eliminated. 'Narrowly' also doesn't provide a proper meaning to the sentence. Hence, 'relentless' is the correct answer choice.
relentless: not stopping or changing
favour: liking or approval
narrowly: only by a small amount
procured: obtain something, especially with care and effort

S26. Ans.(b)
Sol. Only option (b) i.e., ferocious fits the blank correctly and hence, it is the correct answer.
underscored: past tense of underscore (to stress; emphasise)
undermining: to make something weaker, often gradually
lament: a passionate expression of grief or sorrow
ferocious: savagely fierce, cruel or violent

S27. Ans.(c)
Sol. The blank requires an adjective and we need to select from options (b) and (c), so, looking into the meaning, we can say that option (c) is the appropriate answer choice because instinct doesn't provide a proper meaning to the sentence whereas 'inundated is more apt and goes with the meaning the sentence tries to convey.
arrival: the action or process of arriving
instinct: a natural ability that helps you decide what to do or how to act without thinking
inundate: overwhelm (someone) with things or people to be dealt with

S28. Ans.(d)
Sol. Option (d) seems to be the most appropriate from the meaning.
coordinated: past tense of coordinate (to organise different things or people so that they work together)
ethic: a set of moral principles, especially ones relating to or affirming a specified group, field or form of conduct
adversely: in a way that is harmful or likely to cause problems
yielding: to produce or provide crops, profits or results

S29. Ans.(b)
Sol. Options (a), (d) and (e) are adjectives whereas the blank needs a noun. Among the nouns 'difficulty' and 'bridge' bridge fits the blank contextually . Hence, option (b) seems to be the correct answer choice.

S30. Ans.(c)
Sol. Options (d), (e) are abstract nouns and are eliminated. Since, the word 'victory' is present in the sentence so 'victor' suits the blank contextually. Hence, option (c) seems to be the correct answer.

S31. Ans.(a)
Sol.
Area of rectangular field = area of square
$90 \times 80 = a^2$
$a = 60\sqrt{2}$ m
Diagonal of square = $\sqrt{2}a = 120$ m

S32. Ans.(b)
Sol. Let Ram's present age be x, his son's age be y, his father's age be z.
ATQ,
$x = 3y$
$x = \dfrac{2}{3}z$
$\dfrac{x+y+z}{3} = 34$
$x + \dfrac{x}{3} + \dfrac{3}{2}x = 102$
$6x + 2x + 9x = 102 \times 6$
$17x = 102 \times 6$
$x = 36$
$y = \dfrac{x}{3} = 12$
$z = \dfrac{3}{2}x = \dfrac{3}{2} \times 36 = 54$
$\Rightarrow y - z = 54 - 12 = 42$ years

S33. Ans.(e)
Sol. Let 5 consecutive multiple of 4 be 4(x - 2), 4(x - 1), 4x 4(x + 1), 4(x + 2)
ATQ,
4(x - 2) + 4(x - 1) + 4x + 4(x + 1) + 4(x + 2) = 100
20x = 100
x=5
∴ S_1 series is 12, 16, 20, 24, 28
Let S2 series be
y – 2, y, y + 2, y+ 4
now,
ATQ,
y = 28 – 6 = 22
Required average = $\dfrac{20+22+24+26}{4} = \dfrac{92}{4} = 23$

S34. Ans.(a)
Sol.
ATQ,
$20M \times y = 35W \times (y - 3)$ ...(i)
$15M \times (x - 4) = 20W \times (x)$ ..(ii)
Also,
$1M = \dfrac{160}{100}W$
$1M = \dfrac{8}{5}W$ ...(iii)
From (i) & (iii), y = 35
From (ii) & (iii), x = 24
∴ y – x = 35 – 24 = 11

S35. Ans.(a)
Sol. Let the length of platform be x meter and the length of Rajdhani express be y m.
So, $\dfrac{x+y}{36} = 90 \times \dfrac{5}{18} \Rightarrow x + y = 900$ ------ (i)
And, let in 't' sec second train can cross the platform
So, $\dfrac{x+y-240}{t} = 54 \times \dfrac{5}{18}$
$x + y = 15t + 240$ -------- (ii)
From (i) & (ii) –
$900 - 240 = 15t$
$660 = 15t$
$t = 44$ sec

S36. Ans.(d)
Sol.
Ratio of profit ⇒
A	:	B	:	C
12×12	:	12×x	:	8×(12−x)
36	:	3x	:	2(12−x)

ATQ,
$\dfrac{36}{60+x} = \dfrac{1800}{3200}$
$\Rightarrow 60 + x = 64$
$\Rightarrow x = 4$

S37. Ans(c)
Sol. Let x percent of the other 80 questions Arpita needed to answer correct,
So, $120 \times \dfrac{60}{100} = \dfrac{40}{100} \times 40 + \dfrac{x}{100} \times 80$
Now, $72 = 16 + \dfrac{4x}{5}$
∴ $4x = 56 \times 5$
So, x = 70%

S38. Ans.(d)
Sol.
Let speed of boat in still water be x km/hr
And speed of stream be r km/hr
ATQ,
$\dfrac{24}{x-r} + \dfrac{36}{x+r} = 9$ ...(i)
Also,
$(x + r) - (x - r) = 8$
or, $2r = 8$
or, $2r = 8$
or, $r = 4$ km/hr
putting, r = 4 in eqn. (i),
we get, x = 8 km/hr.

S39. Ans.(e)
Sol.
Ratio of milk and water in mixture
$= 80 \times \dfrac{3}{4} : 80 \times \dfrac{1}{4}$
$= 3 : 1$
Remaining water and milk in mixture —
Milk $= 80 \times \dfrac{3}{4} - 24 \times \dfrac{3}{4}$
$= 60 - 18$
$= 42$ liters
Water $= 80 \times \dfrac{1}{4} - 24 \times \dfrac{1}{4}$
$= 20 - 6$
$= 14$ liters
Let x liter of water added
$\dfrac{42}{14+x} = \dfrac{7}{13}$
$98 + 7x = 546$
$7x = 448$
$x = 64$ liters

S40. Ans.(c)
Sol.
$P_1 = $ Rs. x $P_2 = $ Rs. (x+4000)
$R_1 = 25\%$ $R_2 = 20\%$
$T_1 = 4$years $T_2 = 3$years
Simple interest earned by Raja $= \dfrac{x \times 25 \times 4}{100} = x$
Simple interest earned by Sankalp $= \dfrac{(x+4000) \times 20 \times 3}{100} = \dfrac{3(x+4000)}{5}$
And, it is given that Sankalp earned Rs. 800 more that Raja,
So, $\dfrac{3(x+4000)}{5} - x = 800$
$\Rightarrow \dfrac{3x \times 12000 - 5x}{5} = 800 \Rightarrow \dfrac{12000 - 2x}{5} = 800 \Rightarrow 12000 - 2x = 4000$
$\Rightarrow 2x = 8000$

S41. Ans.(b)
Sol.

Given, selling price of F = Rs. 800

So, selling price of D = 800 – 150 = Rs. 650

Now, selling price of B = $650 \times \frac{100}{130}$ = Rs. 500

Now, selling price of A = $500 \times \frac{36}{25}$ = Rs. 720

And, selling price of C = $720 \times \frac{100}{180}$ = Rs. 400

And, selling price of E = $\frac{500 + 400}{2}$ = Rs. 450

Article	Selling price (in Rs.)
A	720
B	500
C	400
D	650
E	450
F	800

Cost price of A = $720 \times \frac{100}{90}$ = Rs. 800

Cost price of E = $450 \times \frac{100}{112.5}$ = Rs. 400

Shopkeeper's overall loss on A & E = (800 + 400) – (720 + 450) = 30

Required % = $\frac{30}{400} \times 100$ = 7.5%

S42. Ans.(c)
Sol.

Given, selling price of F = Rs. 800

So, selling price of D = 800 – 150 = Rs. 650

Now, selling price of B = $650 \times \frac{100}{130}$ = Rs. 500

Now, selling price of A = $500 \times \frac{36}{25}$ = Rs. 720

And, selling price of C = $720 \times \frac{100}{180}$ = Rs. 400

And, selling price of E = $\frac{500 + 400}{2}$ = Rs. 450

Article	Selling price (in Rs.)
A	720
B	500
C	400
D	650
E	450
F	800

Required ratio = $\frac{500+400}{450+800} = \frac{900}{1250}$

= 18 : 25

S43. Ans.(e)
Sol.

Given, selling price of F = Rs. 800

So, selling price of D = 800 – 150 = Rs. 650

Now, selling price of B = $650 \times \frac{100}{130}$ = Rs. 500

Now, selling price of A = $500 \times \frac{36}{25}$ = Rs. 720

And, selling price of C = $720 \times \frac{100}{180}$ = Rs. 400

And, selling price of E = $\frac{500 + 400}{2}$ = Rs. 450

Article	Selling price (in Rs.)
A	720
B	500
C	400
D	650
E	450
F	800

Marked price of C = $400 \times \frac{100}{80}$ = Rs. 500

Marked price of F = $800 \times \frac{100}{80}$ = Rs. 1000

Cost price of C = $500 \times \frac{100}{200}$ = Rs. 250

Cost price of F = $1000 \times \frac{300}{400}$ = Rs. 750

Required amount = (400 - 250) + (800 + 750) = 150 + 50 = Rs. 200

S44. Ans.(b)
Sol.

Given, selling price of F = Rs. 800

So, selling price of D = 800 – 150 = Rs. 650

Now, selling price of B = $650 \times \frac{100}{130}$ = Rs. 500

Now, selling price of A = $500 \times \frac{36}{25}$ = Rs. 720

And, selling price of C = $720 \times \frac{100}{180}$ = Rs. 400

And, selling price of E = $\frac{500 + 400}{2}$ = Rs. 450

Article	Selling price (in Rs.)
A	720
B	500
C	400
D	650
E	450
F	800

Cost price of D = $(650 + 150) \times \frac{100}{160}$ = Rs. 500

Cost price of E = $(450 + 150) \times \frac{100}{150}$ = Rs. 400

Required % = $\frac{(500+400)}{720} \times 100$ = 125%

S45. Ans.(a)
Sol.
Given, selling price of F = Rs. 800
So, selling price of D = 800 – 150 = Rs. 650
Now, selling price of B = 650 × $\frac{100}{130}$ = Rs. 500
Now, selling price of A = 500 × $\frac{36}{25}$ = Rs. 720
And, selling price of C = 720 × $\frac{100}{180}$ = Rs. 400
And, selling price of E = $\frac{500 + 400}{2}$ = Rs. 450

Article	Selling price (in Rs.)
A	720
B	500
C	400
D	650
E	450
F	800

Average of selling price of all 6 articles
$= \frac{(720+500+400+650+450+800)}{6}$
$= \frac{3520}{6}$
$= \frac{1760}{3}$
= 586.67
Required number of articles = 3

S46. Ans.(b)
Sol.
Wrong number = 2030
Pattern of series –

2025　2050　2000　2100　1900　2300　1500
+25　　−50　　+100　　−200　　+400　　−800
×2　　×2　　×2　　×2　　×2
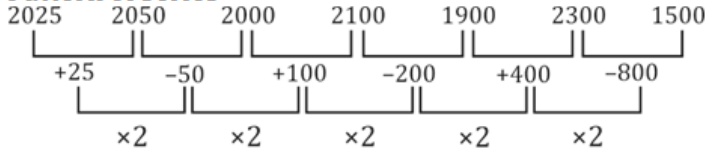
So, there should be 2025 in place of 2030.

S47. Ans.(d)
Sol.
Wrong number = 10
Pattern of series –

12　6　6　9　18　45　135
×0.5　×1　×1.5　×2　×2.5　×3
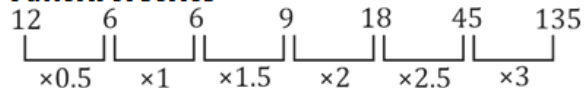
So, there should be 12 in place of 10.

S48. Ans.(a)
Sol.
Wrong number = 318
Pattern of series –

337　320　301　278　249　218　181
−17　−19　−23　−29　−31　−37
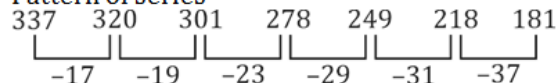
So, there should be 320 in place of 318.

S49. Ans.(d)
Sol.
Wrong number = 820
Pattern of series –

75　100　200　425　825　1450　2350
+25　+100　+225　+400　+625　+900
$(5)^2$　$(10)^2$　$(15)^2$　$(20)^2$　$(25)^2$　$(30)^2$
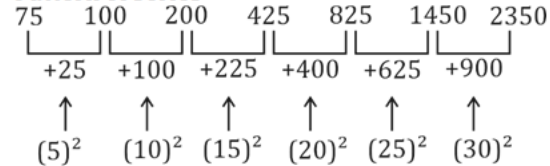
So, there should be 825 in place of 820.

S50. Ans.(b)
Sol.
Wrong number = 285
Pattern of series –

81　100　130　171　223　286　360
+19　+30　+41　+52　+63　+74
+11　+11　+11　+11　+11
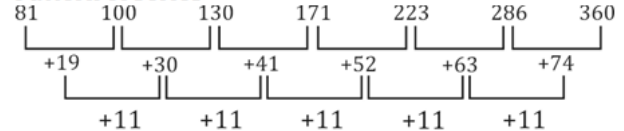
So, there should be 286 in place of 285.

S51. Ans.(c)
Sol.
I. $2x^2 - 17x + 36 = 0$
$2x^2 - 8x - 9x + 36 = 0$
$2x(x - 4) - 9 (x - 4) = 0$
$(2x - 9) (x - 4) = 0$
$x = \frac{9}{2}, 4$
II. $3y^2 - 22y + 40 = 0$
$3y^2 - 12y - 10y + 40 = 0$
$3y(y - 4) - 10 (y - 4) = 0$
$(y - 4) (3y - 10) = 0$
$y = 4, \frac{10}{3}$
$x \geq y$

S52. Ans.(a)
Sol.
I. $x^2 + 21x + 108 = 0$
$x^2 + 9x + 12x + 108 = 0$
$x(x + 9) + 12 (x + 9) = 0$
$(x + 12) (x + 9) = 0$
$x = -12, -9$
II. $y^2 + 14y + 48 = 0$
$y^2 + 6y + 8y + 48 = 0$
$y(y + 6) + 8 (y + 6) = 0$
$(y + 8) (y + 6) = 0$
$y = -8, -6$
$y > x$

S53. Ans.(d)
Sol.

I. $2x^2 + 7x - 60 = 0$
$2x^2 + 15x - 8x - 60 = 0$
$x(2x + 15) - 4(2x + 15) = 0$
$(x - 4)(2x + 15) = 0$
$x = 4, \dfrac{-15}{2}$
II. $3y^2 - 28y + 64 = 0$
$3y^2 - 12y - 16y + 64 = 0$
$3y(y - 4) - 16(y - 4) = 0$
$(3y - 16)(y - 4) = 0$
$y = \dfrac{16}{3}, 4$
$y \geq x$

S54. Ans.(e)
Sol.

I. $x^2 - 2x - 24 = 0$
$x^2 - 6x + 4x - 24 = 0$
$x(x - 6) + 4(x - 6) = 0$
$(x + 4)(x - 6) = 0$
$x = 6, -4$
II. $y^2 + 3y - 40 = 0$
$y^2 + 8y - 5y - 40 = 0$
$y(y + 8) - 5(y + 8) = 0$
$(y - 5)(y + 8) = 0$
$x = 5, -8$
No relation can be established

S55. Ans.(c)
Sol.

I. $x^3 = 729$
$x = \sqrt[3]{729}$
$x = 9$
II. $y^2 - 15y + 54 = 0$
$y^2 - 6y - 9y + 54 = 0$
$y(y - 6) - 9(y - 6) = 0$
$(y - 6)(y - 9) = 0$
$y = 9, 6$
So, $x \geq y$.

S56. Ans.(d)
Sol. Total population visiting zoo in city C = 75,000
Female population visiting zoo from city C = $75{,}000 \times \dfrac{(100-25)}{100} = 56{,}250$

S57. Ans.(c)
Sol. Let total male population in city C be 2x & total male population in city E be 3x
Required percentage $= \dfrac{3x \times \frac{100}{24}}{2x \times \frac{100}{25}} \times 100$
$= 156\dfrac{1}{4}\%$

S58. Ans.(c)
Sol. Total population visiting zoo in city F = 21000 × $\dfrac{60}{100}$ = 12,600
Total male population visiting zoo in city F = $21{,}000 \times \dfrac{60}{100} \times \dfrac{40}{100} \times 5040$
Total population in city A visiting zoo = 12600 × 1.5 = 18,900
Required difference = 18,900 – 5040 = 13860

S59. Ans.(a)
Sol. Total males visiting zoon in city B = 4,400
So, total zoo visitor in City B = $\dfrac{4400}{22} \times 100 = 20{,}000$
Male zoo visitor in city F = $\dfrac{4400}{2} = 2200$
Total zoo visitor in City F = $\dfrac{2200}{40} \times 100 = 5500$
Required percentage $= \dfrac{(5500-4400)}{5500} \times 100 = 20\%$

S60. Ans.(b)
Sol.
Total males visiting zoo in city A be x
∴ total males visiting in city E = 1.6x
ATQ,
x + 1.6x = 39000
2.6x = 39000
x = 15000
So, total females visiting zoo in city E = 1.6 × $15{,}000 \times \dfrac{76}{24} = 76{,}000$

S61. Ans.(d)
Sol. Total employees in P in 2018 & together = 800 + 1200 = 2000
Total employees in Q & T together in 2019 = 1500 + 1000 = 2500
Required percentage $= \dfrac{2500-2000}{2500} \times 100 = 20\%$

S62. Ans.(b)
Sol. Number of male employees in R in 2018 and 2019 together $= \left(1400 \times \dfrac{3}{5}\right) + \left(1600 \times \dfrac{5}{8}\right)$
= 840 + 1000
= 1840
= Required ratio $= \dfrac{1840}{1200} = 23 : 15$

S63. Ans.(a)
Sol.
Total employees in R & T together = 1400 + 700 = 2100
Total employees in S in 2018 & 2019 together = 400 + 500 = 900
Required percentage = $\frac{2100}{900} \times 100 = 233\frac{1}{3}\%$
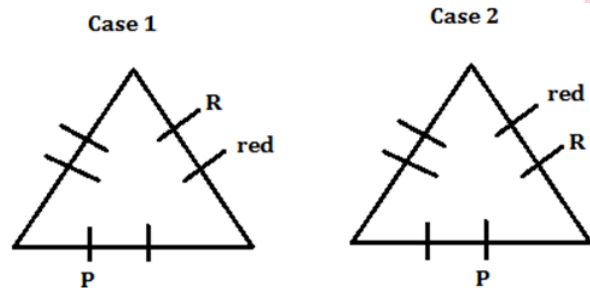
S64. Ans.(d)
Sol.
Total employees in U in 2018 = 900 + 700 = 1600
Total female employees in U = $1600 \times \frac{7}{10} = 1120$
Total female employees in Q = $1200 \times \frac{9}{20} = 540$
So, required number of female employees = 1120 + 540 = 1660

S65. Ans.(c)
Sol. Average number of employees in Q, R & S in 201=
1/3×(1500+1600+500) = 1200
Total employees in P & T together in 2018 = 800 + 700 = 1500
Required difference = 1500 – 1200 = 300

S66. Ans.(c)
Sol. The one who wears red coloured shirt sits second to the right of P. So, here we have two possible cases. R sits adjacent to the one who wears red coloured shirt and both sit at the same side of the table.
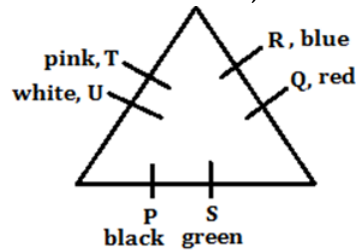

One person sits between R and U. The one who wears green coloured shirt sits second to the right of U. R doesn't wear green coloured shirt.
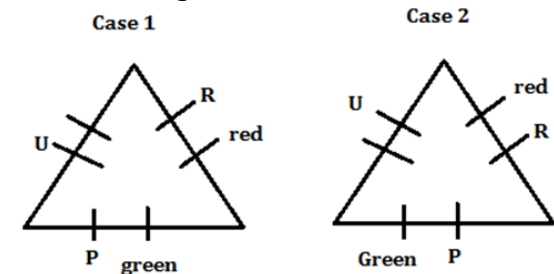
S sits adjacent to P. Two persons sit between S and T who doesn't wear red coloured shirt. So, case 2 gets eliminated here. Q sits third to the left of the one who wears white coloured shirt.
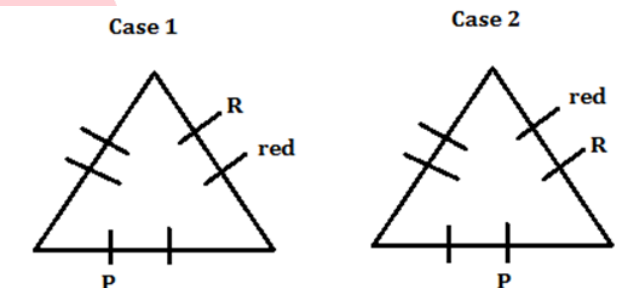

The one who wears pink coloured shirt sits to the immediate right of the one who wears blue coloured shirt. Black coloured shirt is left only so, P wears black coloured shirt. Thus, the final arrangement is:
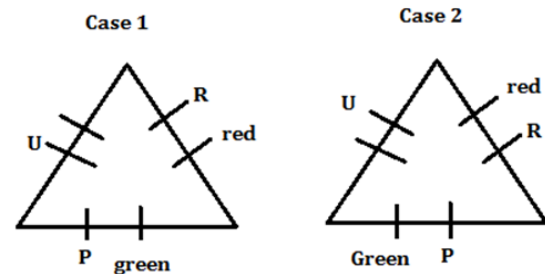

Three persons sit between T and the one who wears black coloured shirt when counts to the left of T.
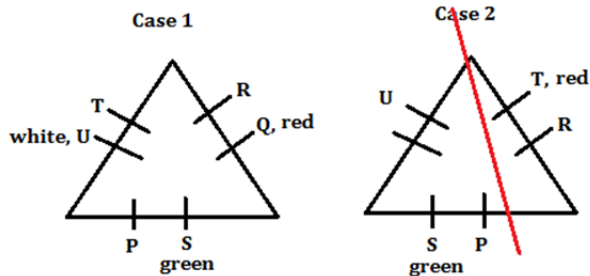
S67. Ans.(d)
Sol. The one who wears red coloured shirt sits second to the right of P. So, here we have two possible cases. R sits adjacent to the one who wears red coloured shirt and both sit at the same side of the table.
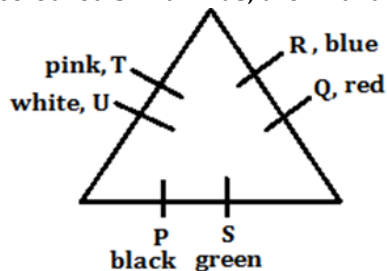

One person sits between R and U. The one who wears green coloured shirt sits second to the right of U. R doesn't wear green coloured shirt.

S sits adjacent to P. Two persons sit between S and T who doesn't wear red coloured shirt. So, case 2 gets eliminated here. Q sits third to the left of the one who wears white coloured shirt.
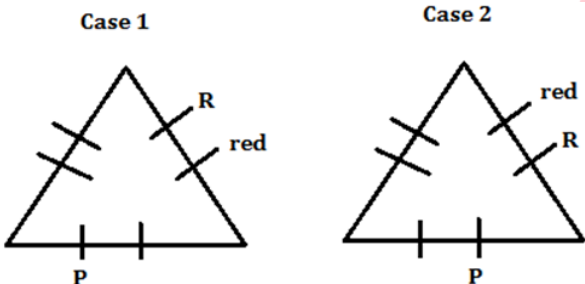
Case 1   Case 2

The one who wears pink coloured shirt sits to the immediate right of the one who wears blue coloured shirt. Black coloured shirt is left only so, P wears black coloured shirt. Thus, the final arrangement is:
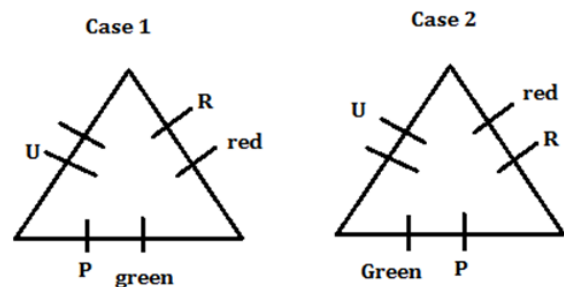

Statement given in option (d) is not true.
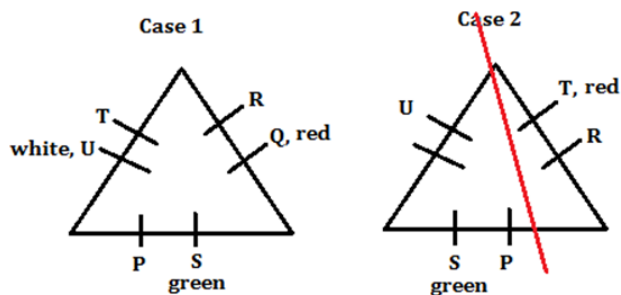
S68. Ans.(b)

Sol. The one who wears red coloured shirt sits second to the right of P. So, here we have two possible cases. R sits adjacent to the one who wears red coloured shirt and both sit at the same side of the table.

One person sits between R and U. The one who wears green coloured shirt sits second to the right of U. R doesn't wear green coloured shirt.

S sits adjacent to P. Two persons sit between S and T who doesn't wear red coloured shirt. So, case 2 gets eliminated here. Q sits third to the left of the one who wears white coloured shirt.

The one who wears pink coloured shirt sits to the immediate right of the one who wears blue coloured shirt. Black coloured shirt is left only so, P wears black coloured shirt. Thus, the final arrangement is:

Position of two persons (T and U) remains unchanged after the rearrangement.

S69. Ans.(e)

Sol. The one who wears red coloured shirt sits second to the right of P. So, here we have two possible cases. R sits adjacent to the one who wears red coloured shirt and both sit at the same side of the table.
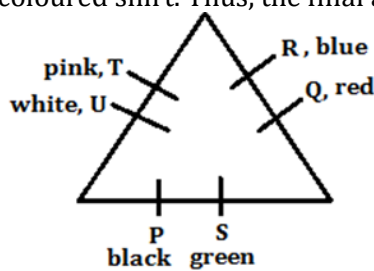

One person sits between R and U. The one who wears green coloured shirt sits second to the right of U. R doesn't wear green coloured shirt.

S sits adjacent to P. Two persons sit between S and T who doesn't wear red coloured shirt. So, case 2 gets eliminated here. Q sits third to the left of the one who wears white coloured shirt.
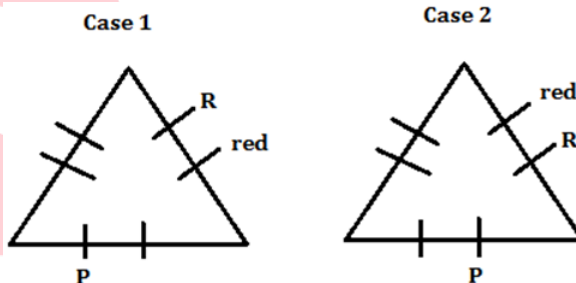
The one who wears pink coloured shirt sits to the immediate right of the one who wears blue coloured shirt. Black coloured shirt is left only so, P wears black coloured shirt. Thus, the final arrangement is:
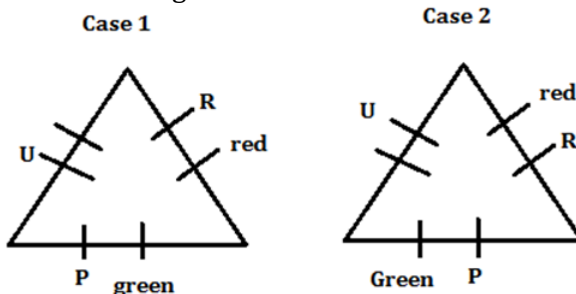

P wears black coloured shirt.
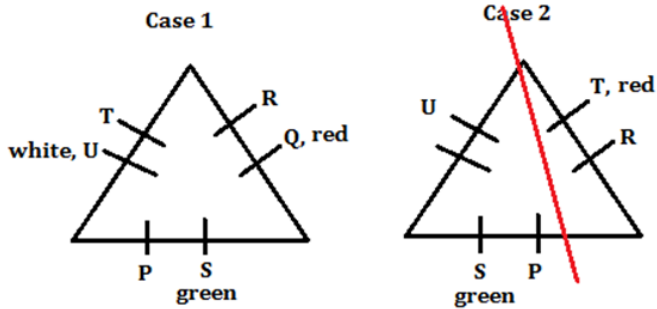
S70. Ans.(d)
Sol. The one who wears red coloured shirt sits second to the right of P. So, here we have two possible cases. R sits adjacent to the one who wears red coloured shirt and both sit at the same side of the table.
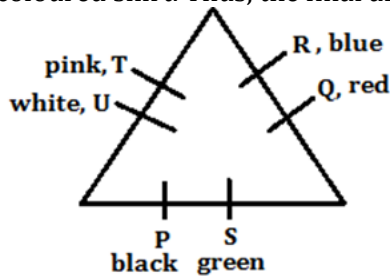

One person sits between R and U. The one who wears green coloured shirt sits second to the right of U. R doesn't wear green coloured shirt.

S sits adjacent to P. Two persons sit between S and T who doesn't wear red coloured shirt. So, case 2 gets eliminated here. Q sits third to the left of the one who wears white coloured shirt.
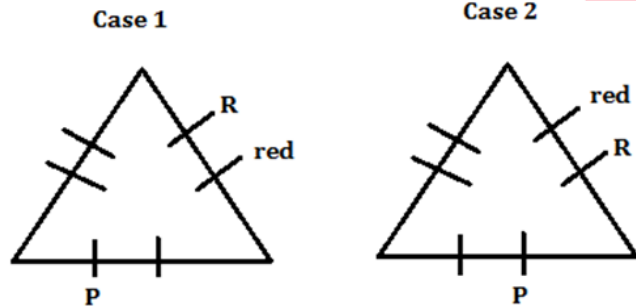
The one who wears pink coloured shirt sits to the immediate right of the one who wears blue coloured shirt. Black coloured shirt is left only so, P wears black coloured shirt. Thus, the final arrangement is:
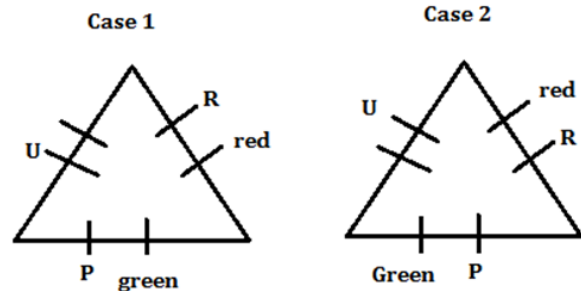

R- Blue is the correct combination.

S71. Ans.(c)
Sol. 3 & U , 8 % L

S72. Ans.(d)
Sol. 7 Q T X 8 L 3 U 4 7 X 9 **J** B 8 L 1 9 F P

S73. Ans.(e)
Sol. 7 **Q** T @ X **8 L** 3 & U 4 **7 X** $ # **9 J** B 8 % L β 1 **9 F** P ∞
7+8+7+9+9=40

S74. Ans.(b)
Sol. Symbol which is 4th from the right end in the series is #
Element which is 8th to the left of # is L

S75. Ans.(e)
Sol. 7 **Q** , 7 **X** , 9 **J** , 9 **F**

S76. Ans.(b)
Sol. Given number- 9638572483
After arrangement – 2334567889
Sum – 5 + 7=12

S77. Ans.(e)
Sol. Two persons go between A and B who goes after Thursday. So, here we have three possible cases. C goes just before A.

Days	Case 1 Persons	Case 2 Persons	Case 3 Persons
Monday	C		
Tuesday	A	C	
Wednesday		A	C
Thursday			A
Friday	B		
Saturday		B	
Sunday			B

The number of persons goes before C is one less than the number of persons goes after D. So, case 3 gets eliminated here. G goes three persons before F and goes after E.

Days	Case 1 Persons	Case 2 Persons	~~Case 3 Persons~~
Monday	C	E	
Tuesday	A	C	
Wednesday	E	A	~~C~~
Thursday	G	G	~~A~~
Friday	B	D	
Saturday	D	B	
Sunday	F	F	~~B~~

At least one person goes before E. So, case 2 gets eliminated here.

Days	Case 1 Persons	~~Case 2 Persons~~
Monday	C	~~E~~
Tuesday	A	~~C~~
Wednesday	E	~~A~~
Thursday	G	~~G~~
Friday	B	~~D~~
Saturday	D	~~B~~
Sunday	F	~~F~~

Thus, the final arrangement is:

Days	Persons
Monday	C
Tuesday	A
Wednesday	E
Thursday	G
Friday	B
Saturday	D
Sunday	F

Five persons go after A.

S78. Ans.(c)
Sol. Two persons go between A and B who goes after Thursday. So, here we have three possible cases. C goes just before A.

Days	Case 1 Persons	Case 2 Persons	Case 3 Persons
Monday	C		
Tuesday	A	C	
Wednesday		A	C
Thursday			A
Friday	B		
Saturday		B	
Sunday			B

The number of persons goes before C is one less than the number of persons goes after D. So, case 3 gets eliminated here. G goes three persons before F and goes after E.

Days	Case 1 Persons	Case 2 Persons	~~Case 3 Persons~~
Monday	C	E	
Tuesday	A	C	
Wednesday	E	A	~~C~~
Thursday	G	G	~~A~~
Friday	B	D	
Saturday	D	B	
Sunday	F	F	~~B~~

At least one person goes before E. So, case 2 gets eliminated here.

Days	Case 1 Persons	~~Case 2 Persons~~
Monday	C	~~E~~
Tuesday	A	~~C~~
Wednesday	E	~~A~~
Thursday	G	~~G~~
Friday	B	~~D~~
Saturday	D	~~B~~
Sunday	F	~~F~~

Thus, the final arrangement is:

Days	Persons
Monday	C
Tuesday	A
Wednesday	E
Thursday	G
Friday	B
Saturday	D
Sunday	F

E goes on Wednesday.

S79. Ans.(a)
Sol. Two persons go between A and B who goes after Thursday. So, here we have three possible cases. C goes just before A.

Days	Case 1 Persons	Case 2 Persons	Case 3 Persons
Monday	C		
Tuesday	A	C	
Wednesday		A	C
Thursday			A
Friday	B		
Saturday		B	
Sunday			B

The number of persons goes before C is one less than the number of persons goes after D. So, case 3 gets eliminated here. G goes three persons before F and goes after E.

Days	Case 1 Persons	Case 2 Persons	~~Case 3 Persons~~
Monday	C	E	
Tuesday	A	C	
Wednesday	E	A	~~C~~
Thursday	G	G	~~A~~
Friday	B	D	
Saturday	D	B	
Sunday	F	F	~~B~~

At least one person goes before E. So, case 2 gets eliminated here.

Days	Case 1	Case 2
	Persons	Persons
Monday	C	E
Tuesday	A	C
Wednesday	E	A
Thursday	G	G
Friday	B	D
Saturday	D	B
Sunday	F	F

Thus, the final arrangement is:

Days	Persons
Monday	C
Tuesday	A
Wednesday	E
Thursday	G
Friday	B
Saturday	D
Sunday	F

E will go three persons before G after the rearrangement.

S80. Ans.(c)

Sol. Two persons go between A and B who goes after Thursday. So, here we have three possible cases. C goes just before A.

Days	Case 1	Case 2	Case 3
	Persons	Persons	Persons
Monday	C		
Tuesday	A	C	
Wednesday		A	C
Thursday			A
Friday	B		
Saturday		B	
Sunday			B

The number of persons goes before C is one less than the number of persons goes after D. So, case 3 gets eliminated here. G goes three persons before F and goes after E.

Days	Case 1	Case 2	Case 3
	Persons	Persons	Persons
Monday	C	E	
Tuesday	A	C	
Wednesday	E	A	C
Thursday	G	G	A
Friday	B	D	
Saturday	D	B	
Sunday	F	F	B

At least one person goes before E. So, case 2 gets eliminated here.

Days	Case 1	Case 2
	Persons	Persons
Monday	C	E
Tuesday	A	C
Wednesday	E	A
Thursday	G	G
Friday	B	D
Saturday	D	B
Sunday	F	F

Thus, the final arrangement is:

Days	Persons
Monday	C
Tuesday	A
Wednesday	E
Thursday	G
Friday	B
Saturday	D
Sunday	F

Both I and II statements are true.

S81. Ans.(d)

Sol. Two persons go between A and B who goes after Thursday. So, here we have three possible cases. C goes just before A.

Days	Case 1	Case 2	Case 3
	Persons	Persons	Persons
Monday	C		
Tuesday	A	C	
Wednesday		A	C
Thursday			A
Friday	B		
Saturday		B	
Sunday			B

The number of persons goes before C is one less than the number of persons goes after D. So, case 3 gets eliminated here. G goes three persons before F and goes after E.

Days	Case 1	Case 2	Case 3
	Persons	Persons	Persons
Monday	C	E	
Tuesday	A	C	
Wednesday	E	A	C
Thursday	G	G	A
Friday	B	D	
Saturday	D	B	
Sunday	F	F	B

At least one person goes before E. So, case 2 gets eliminated here.

Days	Case 1	Case 2
	Persons	Persons
Monday	C	E
Tuesday	A	C
Wednesday	E	A
Thursday	G	G
Friday	B	D
Saturday	D	B
Sunday	F	F

Thus, the final arrangement is:

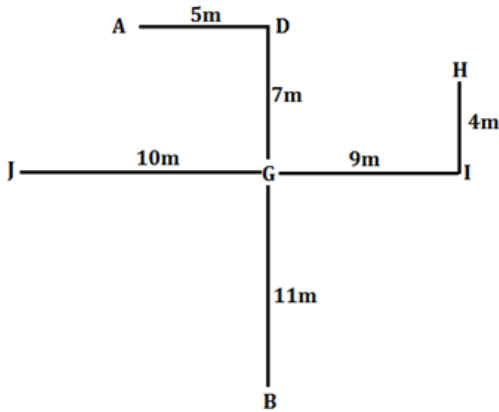| Days	Persons
Monday	C
Tuesday	A
Wednesday	E
Thursday	G
Friday	B
Saturday	D
Sunday	F

B is related to F as first person goes two persons before second person.

S82. Ans.(d)
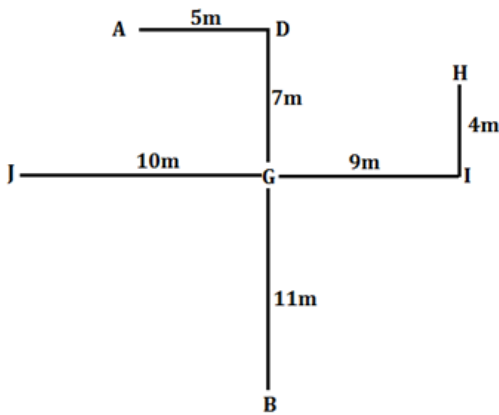Sol.

B E N E V O L E N T

S83. Ans.(c)
Sol.

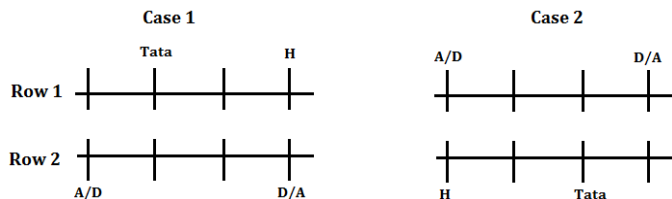Total distance between A and B is (5+7+11) = 23m
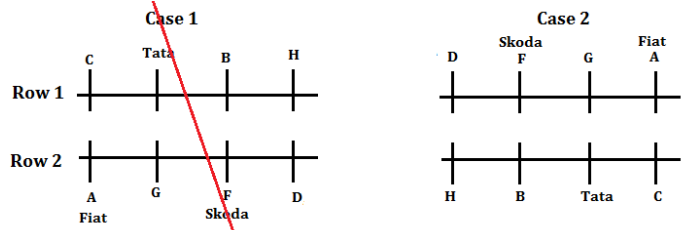
S84. Ans.(d)
Sol.

H hides in north-east direction with respect to B
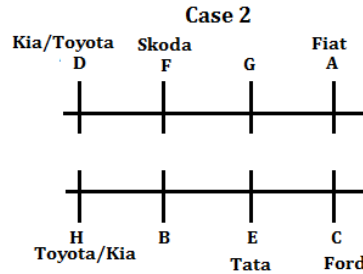
S85. Ans.(d)
Sol. H sits second to the left of the one who has Tata car. H sits at the extreme end of the row. So, here we have two possible cases. Two persons sit between D and A.

The one who has Skoda car sits second to the right of A. One person sits between B and C who faces the one who has fiat car. G sits immediate left of F who doesn't face north direction. So, case 1 gets eliminated here.

The one who has kia car faces the one who has Toyota car. The one who has Ford car sits to the right of E.

One person sits between C and the one who has Hyundai car. Only Maruti is left which is used by G. Thus, the final arrangement is:

Either D or H has kia brand car.

S86. Ans.(b)
Sol. H sits second to the left of the one who has Tata car. H sits at the extreme end of the row. So, here we have two possible cases. Two persons sit between D and A.
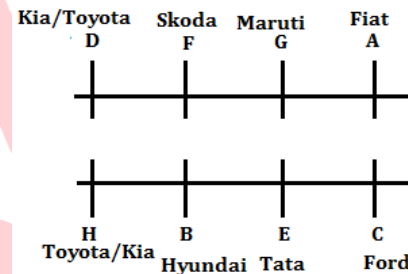

The one who has Skoda car sits second to the right of A. One person sits between B and C who faces the one who has fiat car. G sits immediate left of F who doesn't face north direction. So, case 1 gets eliminated here.

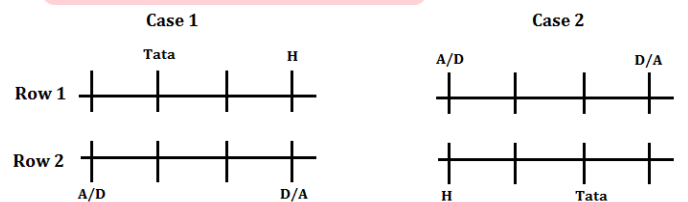The one who has kia car faces the one who has Toyota car. The one who has Ford car sits to the right of E.

Case 2

Kia/Toyota D | Skoda F | G | Fiat A

H Toyota/Kia | B | E Tata | C Ford

One person sits between C and the one who has Hyundai car. Only Maruti is left which is used by G. Thus, the final arrangement is:
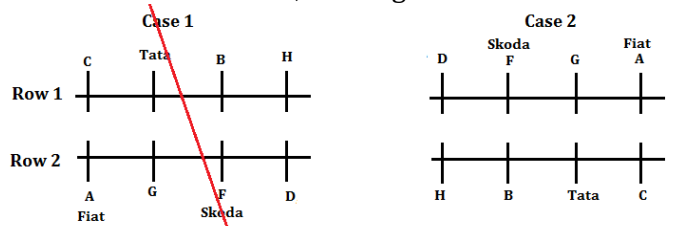

Kia/Toyota D | Skoda F | Maruti G | Fiat A

H Toyota/Kia | B Hyundai | E Tata | C Ford

Statement given in option (b) is not true.
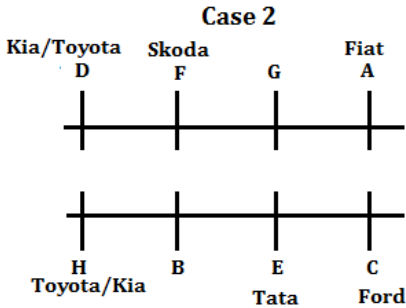
S87. Ans.(a)

Sol. H sits second to the left of the one who has Tata car. H sits at the extreme end of the row. So, here we have two possible cases. Two persons sit between D and A.
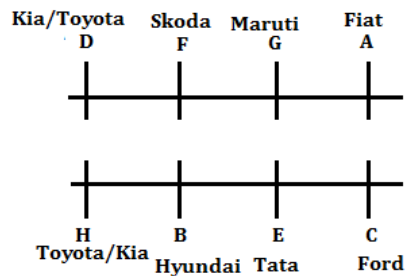

The one who has Skoda car sits second to the right of A. One person sits between B and C who faces the one who has fiat car. G sits immediate left of F who doesn't face north direction. So, case 1 gets eliminated here.

The one who has kia car faces the one who has Toyota car. The one who has Ford car sits to the right of E.

Case 2

Kia/Toyota D | Skoda F | G | Fiat A

H Toyota/Kia | B | E Tata | C Ford

One person sits between C and the one who has Hyundai car. Only Maruti is left which is used by G. Thus, the final arrangement is:

Kia/Toyota D | Skoda F | Maruti G | Fiat A

H Toyota/Kia | B Hyundai | E Tata | C Ford
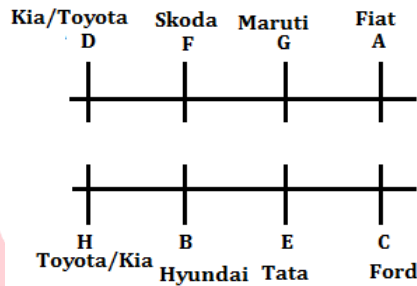
Except D, all face north direction.

S88. Ans.(c)

Sol. H sits second to the left of the one who has Tata car. H sits at the extreme end of the row. So, here we have two possible cases. Two persons sit between D and A.

The one who has Skoda car sits second to the right of A. One person sits between B and C who faces the one who has fiat car. G sits immediate left of F who doesn't face north direction. So, case 1 gets eliminated here.

The one who has kia car faces the one who has Toyota car. The one who has Ford car sits to the right of E.
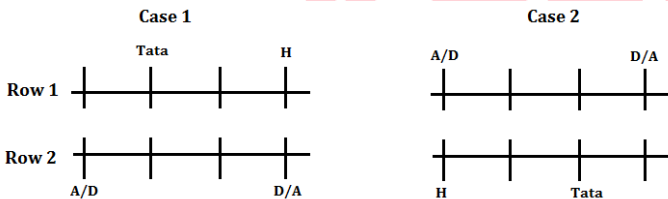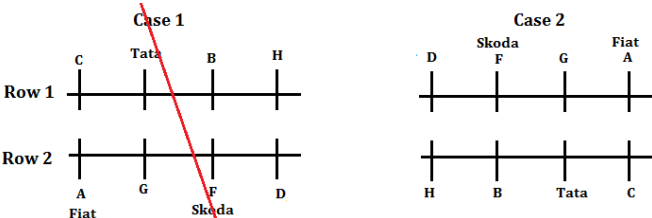
Case 2

Kia/Toyota — Skoda — G — Fiat
D — F — — A

H — B — E — C
Toyota/Kia — Tata — Ford

One person sits between C and the one who has Hyundai car. Only Maruti is left which is used by G. Thus, the final arrangement is:

Kia/Toyota — Skoda — Maruti — Fiat
D — F — G — A

H — B — E — C
Toyota/Kia — Hyundai — Tata — Ford
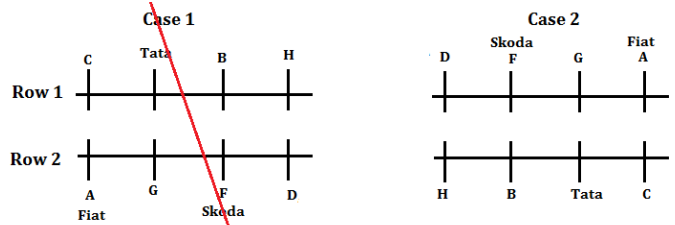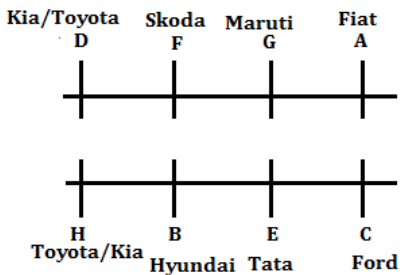
G has Maruti brand car.

S89. Ans.(e)

Sol. H sits second to the left of the one who has Tata car. H sits at the extreme end of the row. So, here we have two possible cases. Two persons sit between D and A.

Case 1

Row 1 — Tata — — H

Row 2 — A/D — — D/A

Case 2

Row 1 — A/D — — D/A
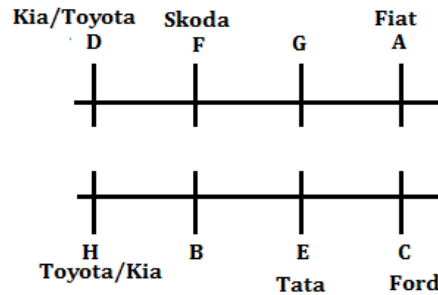
Row 2 — H — — Tata

The one who has Skoda car sits second to the right of A. One person sits between B and C who faces the one who has fiat car. G sits immediate left of F who doesn't face north direction. So, case 1 gets eliminated here.
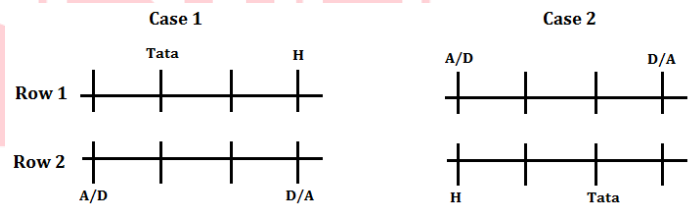

Case 1

Row 1 — C — Tata — B — H

Row 2 — A Fiat — G — F Skoda — D

Case 2

Row 1 — D — Skoda F — G — Fiat A

Row 2 — H — B — Tata — C

The one who has kia car faces the one who has Toyota car. The one who has Ford car sits to the right of E.

Case 2

Kia/Toyota — Skoda — G — Fiat
D — F — — A

H — B — E — C
Toyota/Kia — Tata — Ford

One person sits between C and the one who has Hyundai car. Only Maruti is left which is used by G. Thus, the final arrangement is:

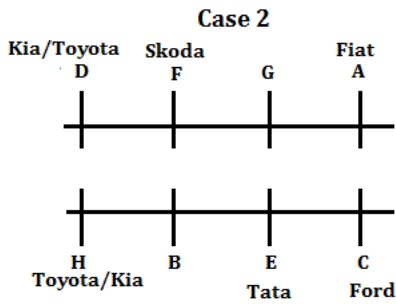Kia/Toyota — Skoda — Maruti — Fiat
D — F — G — A

H — B — E — C
Toyota/Kia — Hyundai — Tata — Ford
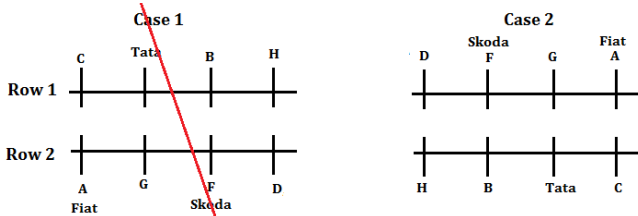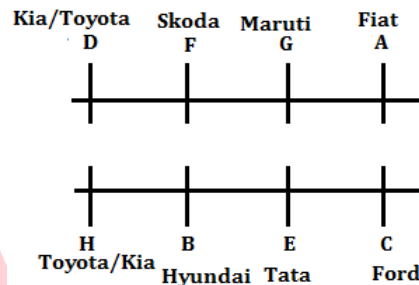
The one who has Fiat car i.e. A will face H after the rearrangement.

S90. Ans.(e)

Sol. Meaningful word formed by using letters R, N, O and L is LORN.

S91. Ans.(c)

Sol.

Words	Codes
Done	Ed
Better	Be
Than	Tn
Before	Fr
Days	Yd
Come	Cm
Think/Do	Nh/kt
Now	Wp
Are	rt

S92. Ans.(d)

Sol.

Words	Codes
Done	Ed
Better	Be
Than	Tn
Before	Fr
Days	Yd
Come	Cm
Think/Do	Nh/kt
Now	Wp
Are	rt

S93. Ans.(b)
Sol.

Words	Codes
Done	Ed
Better	Be
Than	Tn
Before	Fr
Days	Yd
Come	Cm
Think/Do	Nh/kt
Now	Wp
Are	rt

S94. Ans.(e)
Sol.

Words	Codes
Done	Ed
Better	Be
Than	Tn
Before	Fr
Days	Yd
Come	Cm
Think/Do	Nh/kt
Now	Wp
Are	rt

S95. Ans.(d)
Sol.

Words	Codes
Done	Ed
Better	Be
Than	Tn
Before	Fr
Days	Yd
Come	Cm
Think/Do	Nh/kt
Now	Wp
Are	rt

S96. Ans.(b)
Sol. P works with S but not in HR department. So, here we have two possible cases. R works with Y but not in the same department as P works. So, case 1a and case 2a introduced here.

	Finance	Production	HR
Case 1	P, S	R, Y	
Case 2	R, Y	P, S	
Case 1a	P, S		R, Y
Case 2a		P, S	R, Y

T works only with W. V doesn't work with Y. The number of persons works in HR department is more than the number of persons works in Finance department. So, case 1 and case 2 get eliminated here.

	Finance	Production	HR
Case 1	P, S, V	R, Y	T, W
Case 2	R, Y	P, S, V	T, W
Case 1a	P, S, V	T, W	R, Y
Case 2a	T, W	P, S, V	R, Y

U and Q works in the same department which means both U and Q works in HR department in both cases because the number of persons works in HR department is more than the number of persons works in Finance department. Even number of persons works in production department. So, case 2a gets eliminated here.

	Finance	Production	HR
Case 1a	P, S, V	T, W	R, Y, U, Q
Case 2a	T, W	P, S, V	R, Y, U, Q

Thus, the final arrangement is:

Finance	Production	HR
P, S, V	T, W	R, Y, U, Q

Four persons work in HR department.

S97. Ans.(e)
Sol. P works with S but not in HR department. So, here we have two possible cases. R works with Y but not in the same department as P works. So, case 1a and case 2a introduced here.

	Finance	Production	HR
Case 1	P, S	R, Y	
Case 2	R, Y	P, S	
Case 1a	P, S		R, Y
Case 2a		P, S	R, Y

T works only with W. V doesn't work with Y. The number of persons works in HR department is more than the number of persons works in Finance department. So, case 1 and case 2 get eliminated here.

	Finance	Production	HR
Case 1	P, S, V	R, Y	T, W
Case 2	R, Y	P, S, V	T, W
Case 1a	P, S, V	T, W	R, Y
Case 2a	T, W	P, S, V	R, Y

U and Q works in the same department which means both U and Q works in HR department in both cases because the number of persons works in HR department is more than the number of persons works in Finance department. Even number of persons works in production department. So, case 2a gets eliminated here.

	Finance	Production	HR
Case 1a	P, S, V	T, W	R, Y, U, Q
Case 2a	T, W	P, S, V	R, Y, U, Q

Thus, the final arrangement is:

Finance	Production	HR
P, S, V	T, W	R, Y, U, Q

All I, II and III statements are true.

S98. Ans.(c)
Sol. P works with S but not in HR department. So, here we have two possible cases. R works with Y but not in the same department as P works. So, case 1a and case 2a introduced here.

	Finance	Production	HR
Case 1	P, S	R, Y	
Case 2	R, Y	P, S	
Case 1a	P, S		R, Y
Case 2a		P, S	R, Y

T works only with W. V doesn't work with Y. The number of persons works in HR department is more than the number of persons works in Finance department. So, case 1 and case 2 get eliminated here.

	Finance	Production	HR
~~Case 1~~	~~P, S, V~~	~~R, Y~~	~~T, W~~
~~Case 2~~	~~R, Y~~	~~P, S, V~~	~~T, W~~
Case 1a	P, S, V	T, W	R, Y
Case 2a	T, W	P, S, V	R, Y

U and Q works in the same department which means both U and Q works in HR department in both cases because the number of persons works in HR department is more than the number of persons works in Finance department. Even number of persons works in production department. So, case 2a gets eliminated here.

	Finance	Production	HR
Case 1a	P, S, V	T, W	R, Y, U, Q
~~Case 2a~~	~~T, W~~	~~P, S, V~~	~~R, Y, U, Q~~

Thus, the final arrangement is:

Finance	Production	HR
P, S, V	T, W	R, Y, U, Q

Finance (3) + HR (4) = 7

S99. Ans.(b)

Sol. P works with S but not in HR department. So, here we have two possible cases. R works with Y but not in the same department as P works. So, case 1a and case 2a introduced here.

	Finance	Production	HR
Case 1	P, S	R, Y	
Case 2	R, Y	P, S	
Case 1a	P, S		R, Y
Case 2a		P, S	R, Y

T works only with W. V doesn't work with Y. The number of persons works in HR department is more than the number of persons works in Finance department. So, case 1 and case 2 get eliminated here.

	Finance	Production	HR
~~Case 1~~	~~P, S, V~~	~~R, Y~~	~~T, W~~
~~Case 2~~	~~R, Y~~	~~P, S, V~~	~~T, W~~
Case 1a	P, S, V	T, W	R, Y
Case 2a	T, W	P, S, V	R, Y

U and Q works in the same department which means both U and Q works in HR department in both cases because the number of persons works in HR department is more than the number of persons works in Finance department. Even number of persons works in production department. So, case 2a gets eliminated here.

	Finance	Production	HR
Case 1a	P, S, V	T, W	R, Y, U, Q
~~Case 2a~~	~~T, W~~	~~P, S, V~~	~~R, Y, U, Q~~

Thus, the final arrangement is:

Finance	Production	HR
P, S, V	T, W	R, Y, U, Q

U works in HR department.

S100. Ans.(d)

Sol. P works with S but not in HR department. So, here we have two possible cases. R works with Y but not in the same department as P works. So, case 1a and case 2a introduced here.

	Finance	Production	HR
Case 1	P, S	R, Y	
Case 2	R, Y	P, S	
Case 1a	P, S		R, Y
Case 2a		P, S	R, Y

T works only with W. V doesn't work with Y. The number of persons works in HR department is more than the number of persons works in Finance department. So, case 1 and case 2 get eliminated here.

	Finance	Production	HR
~~Case 1~~	~~P, S, V~~	~~R, Y~~	~~T, W~~
~~Case 2~~	~~R, Y~~	~~P, S, V~~	~~T, W~~
Case 1a	P, S, V	T, W	R, Y
Case 2a	T, W	P, S, V	R, Y

U and Q works in the same department which means both U and Q works in HR department in both cases because the number of persons works in HR department is more than the number of persons works in Finance department. Even number of persons works in production department. So, case 2a gets eliminated here.

	Finance	Production	HR
Case 1a	P, S, V	T, W	R, Y, U, Q
~~Case 2a~~	~~T, W~~	~~P, S, V~~	~~R, Y, U, Q~~

Thus, the final arrangement is:

Finance	Production	HR
P, S, V	T, W	R, Y, U, Q

Only Y and U work in the same department among all the given pairs.