ECGC PO Memory Based (Solutions)

Solutions (1-4): In this input output question one number and one word are arranged in each step following a certain pattern. Let us understand the logic behind it-

For Words: Words are arranged according to the place value of the last letter in the alphabetical series from right end. The word which has the last letter, which comes 1st in alphabetical series, is arranged first and so on. For example, "music guide" in which we can see that "c" and "e" are last letters of both words but c comes 1st, so "music" will be arranged 1st.

For Numbers: They are arranged in increasing order. The prime numbers are arranged first followed by composite numbers from left to right in left end.

Input: asset 17 48 good back 23 down 61 25 source 16
Step I: 17 asset 48 back 23 down 61 25 source 16 good
Step II: 17 23 asset 48 back down 61 25 16 source good
Step III: 17 23 61 asset 48 down 25 16 back source good
Step IV: 17 23 61 16 asset 48 25 down back source good
Step V: 17 23 61 16 25 48 asset down back source good

S1. Ans.(c)
S2. Ans.(d)
S3. Ans.(b)
S4. Ans.(e)

Solutions (5-8): From the given statements, C sits third to the right of G, who was born in the month having more than 30 days. Both C and G faces opposite **Solutions**to each other. The one who was born in May sits third to the left of C. Only two persons sit between the one who was born in May and the one who was born in March. C was not born in the month having 31 days.
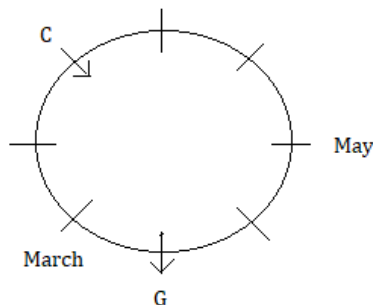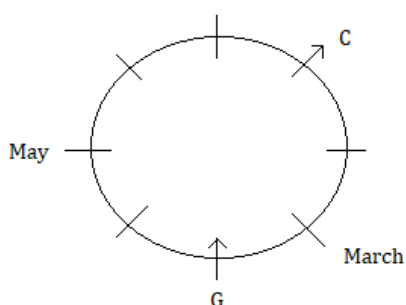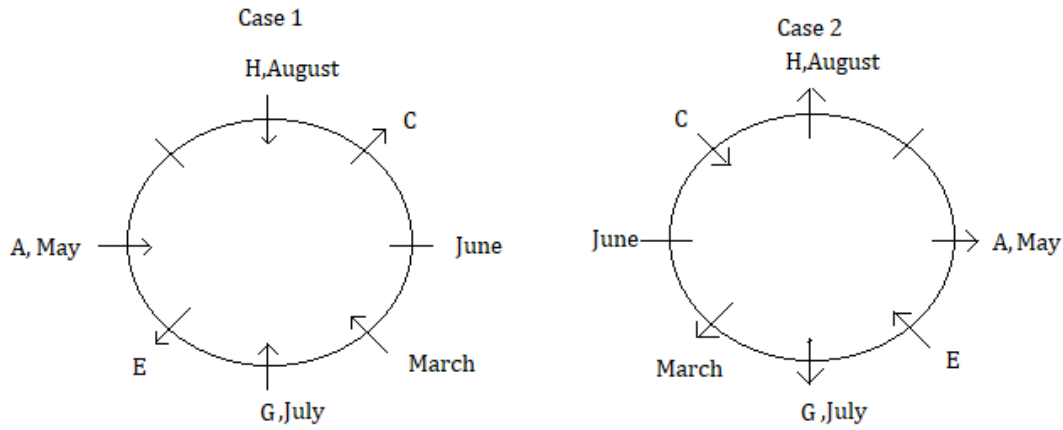

H sits third to the right of the one who was born in March. A sits second to the right of H and opposite to the one who was born in June. H was born in the month immediately after the month in which G was born. H and A both faces same direction. H was not born in the month having 28 days. The one who was born in August sits third to the right of E, who was born in the month immediately after the month in which B was born. B was not born in February.
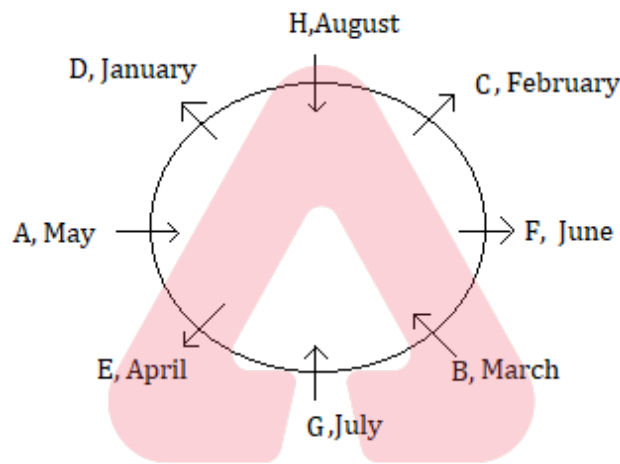
Case 1
H,August
C
A, May
June
E
March
G, July

Case 2
H,August
C
June
A, May
March
E
G, July

E sits second to the left of the one who was born in January, who sits third to the left of F. The one who was born in February faces outside. E was born one of the months after C. So, case 2 get eliminated. The final arrangement is-

H,August
D, January
C, February
A, May
F, June
E, April
B, March
G, July

S5. Ans.(a)
S6. Ans.(d)
S7. Ans.(a)
S8. Ans.(c)

Solutions (9-10): Given series- L 9 8 * S A & 2 T 9 G & V 5 H % @ Q E # 9 1 © E ∞ 2 $ U 7 Y 4 * O 7
STEP I- The alphabet which is immediate followed by a symbol and immediately preceded by a number are arranged in between % and @.
L 9 8 * S A & 2 T 9 & V 5 % G H @ Q E # 9 1 © E ∞ 2 $ U 7 Y 4 * O 7
STEP II- All the numbers, letters and symbols which appears more than once are eliminated.
L 8 S A T V 5 % G H @ Q # 1 © ∞ $ U Y 4 * O
STEP III- All the numbers are arranged in the end of the series (after O) in ascending order after One is added in odd number and one is subtracted in even number.
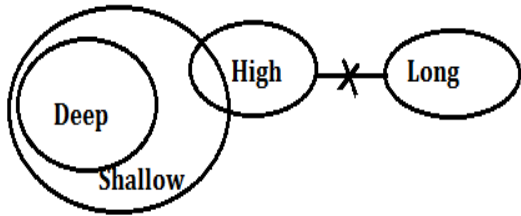L S A T V % G H @ Q # © ∞ $ U Y * O 2 3 6 7
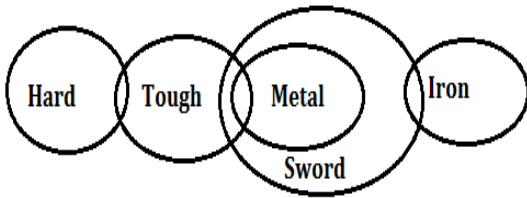
S9. Ans.(c)
S10. Ans.(b)
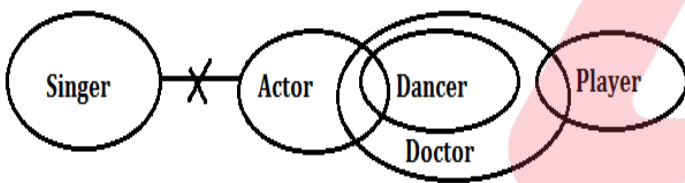
Solutions (11-13):

S11. Ans.(e)
Sol.

S12. Ans.(c)
Sol.

S13. Ans.(d)
Sol.

Solutions (14):

S14. Ans.(d)
Sol.
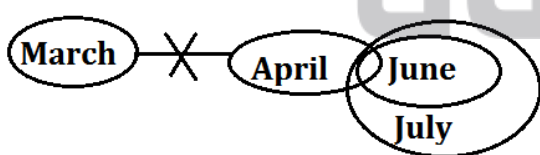
Solutions (15-16):

S15. Ans.(b)
Sol. "Fallout" means adverse effect. we need to find the option which shows the adverse results after new policy approved by Delhi Government. Option (b) is the right answer as it clearly states defy by opposition.

S16. Ans.(d)
Sol. Nothing is discussed about favour of central government in above passage. Option (II) can be assumed as government has reduced the minimum age from 25 to 21 and it is obvious to increase the revenue of state. Revenue comparison of Delhi with other states has not been discussed in the above statement.

Solutions (17-20): From the given statements, no one sits to the right of T. More than four persons sit between T and the one who is the oldest among them. Two persons sit between the one who is the oldest and the one who is the youngest. Here we get 3 possible cases – Case 1, Case 2 and Case 3.
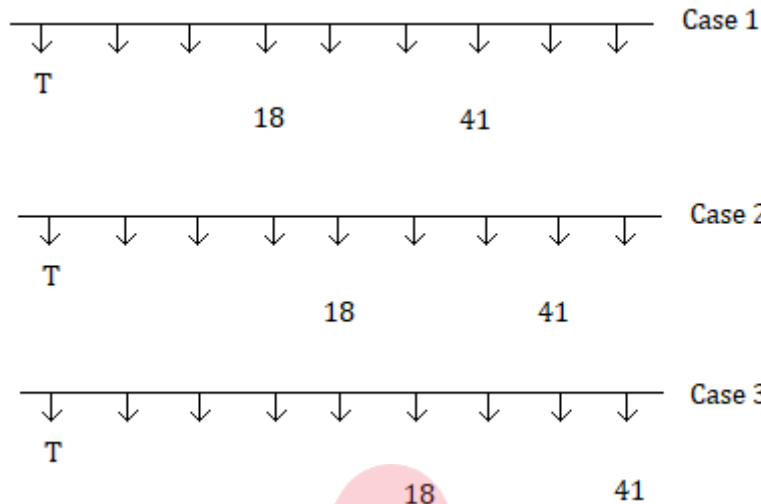
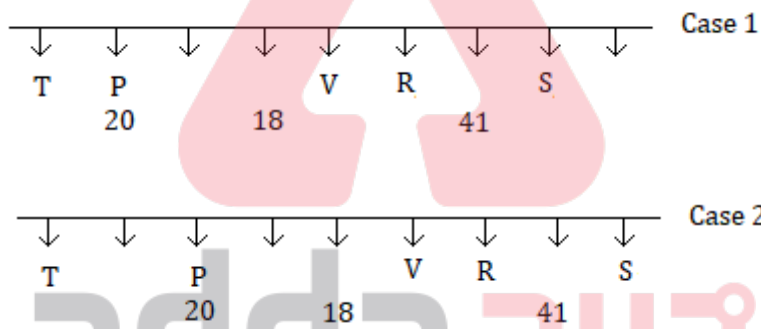V sits to the immediate left of the one who is the youngest. R and S are immediate neighbours of the one who is the oldest. From this condition Case 3 is ruled out now. P whose age is 20 years sits fourth to the right of R.

W is of 29 years. W and Q sit adjacent to each other. The one whose age is 33 sits second to the right of the one whose age is 29.
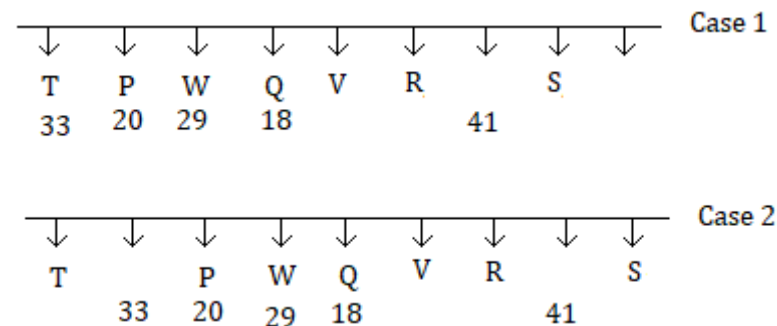
Z is not the oldest. The one whose age is 38 sits to the immediate right of the one whose age is 26 years. More than four persons sit between the one whose age is 23 and S. Here Case 1 is ruled out now and the final arrangement is-

T	Z	P	W	Q	V	R	U	S
23	33	20	29	18	38	26	41	21
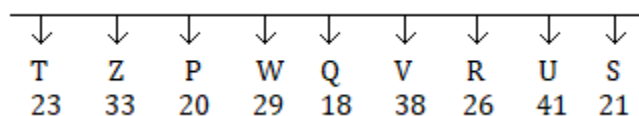
S17. Ans.(d)
S18. Ans.(e)
S19. Ans.(e)
S20. Ans.(d)

Solutions (21-25): From the given statements, the sum of the present age of B and E is 106 years. E is younger to B. The person who is 3nd youngest likes Mango. The sum of the present age of the one who likes apple and the one who likes banana is 87 years. The number of persons born before A is same as the number of persons born after the one who likes Fig. Neither B nor E likes Fig. A is not the youngest person. So, there will be two possible cases--

Case-1			
Years	**Ages**	**Persons**	**Fruits**
1948	73	B	
1956	65		
1963	58		Apple/Banana
1971	50	A	Fig
1980	41		Mango
1988	33	E	
1992	29		Apple/Banana

Case-2			
Years	**Ages**	**Persons**	**Fruits**
1948	73		
1956	65	B	
1963	58		Apple/Banana
1971	50	A	Fig
1980	41	E	Mango
1988	33		
1992	29		Apple/Banana

G is younger to F. Neither G nor F likes Apple and Banana. The difference between the present ages of the one who likes Banana and the one who likes Litchi is 4 years.

Case-1			
Years	**Ages**	**Persons**	**Fruits**
1948	73	B	
1956	65	F	
1963	58		Apple
1971	50	A	Fig
1980	41	G	Mango
1988	33	E	Litchi
1992	29		Banana

Case-2			
Years	Ages	Persons	Fruits
1948	73	F	
1956	65	B	
1963	58		Apple
1971	50	A	Fig
1980	41	E	Mango
1988	33	G	Litchi
1992	29		Banana

G does not like Litchi. So, from this case-2 gets eliminated. D does not like Banana and F does not like Guava. So, the final arrangement is-

Years	Ages	Persons	Fruits
1948	73	B	Guava
1956	65	F	Grapes
1963	58	D	Apple
1971	50	A	Fig
1980	41	G	Mango
1988	33	E	Litchi
1992	29	C	Banana

S21. Ans.(d)
S22. Ans.(d)
S23. Ans.(d)
S24. Ans.(c)
S25. Ans.(a)

S26. Ans.(c)
Sol. Legal action and fix rate is proper course of action but life imprisonment will be extreme course of action.

S27. Ans.(e)
Sol. Both the Statement I and II are effects of some common causes. And cause is increasing case of covid 19. Central government has been trying to increase medical infrastructure. And players have withdrawn their name due to fear.

S28. Ans.(d)
Sol. Both the Statements I and II are effects of independent causes. Bihar has good result may be due to students have studied well or due to education system get improved in Bihar.
Transport facility has been improved may be due to good governance.

Solutions (29-33): From the given statements, S neither lives on odd numbered floor nor in odd numbered flat. From here we get two possibilities i.e., Case 1 and Case2. B lives in east with respect to S. There is one floor gap between B and R and both have same flat number. The number of people lives in south west with respect to R is same as the number of people lives in north east with respect to P, who does not live in Even number flat.

Floor	Case 1			Case 2		
	Flat 1	Flat 2	Flat 3	Flat 1	Flat 2	Flat 3
4		S	B			R
3	P					
2			R		S	B
1				P		

There are two floors gap between P and D. From here Case 1 is ruled out but one more possibility added now i.e. Case 2a. C lives just below the D's floor.

Floor	Case 2			Case 2a		
	Flat 1	Flat 2	Flat 3	Flat 1	Flat 2	Flat 3
4		D	R	D		R
3	C/	C/	C/	C/	C/	C/
2		S	B		S	B
1	P			P		

Q lives in east with respect to C. Y lives just above floor of A who lives on an even numbered floor. A and Y lives in the same flat number. So, position of C is fixed. Both Z and R does not live in the same floor and same flat number. Flat-1 of any floor is not vacant. So, case-2 will be eliminated. Now we can see all ten persons are shifted to their flats and remaining two flats are vacant. So, the final arrangement will be like this –

Floor	Flat 1	Flat 2	Flat 3
4	D	**Vacant**	R
3	Y	C	Q
2	A	S	B
1	P	Z	**Vacant**

S29. Ans.(e)
S30. Ans.(d)

S31. Ans.(e)
Sol. All are living in same flat number except Z.

S32. Ans.(c)
S33. Ans.(b)

Solutions (34-35):

S34. Ans.(b)
Sol. From II –

Floor	Persons
8	
7	
6	
5	Q
4	W
3	R
2	
1	T

From statement II, Q lives on 5th floor.

S35. Ans.(d)
Sol. From I and II- There are two possible cases-
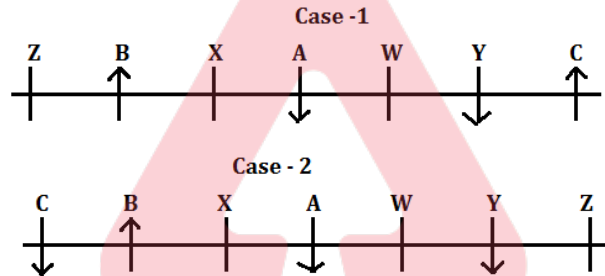
Y sits second to the left of Z. By this condition both cases are cancelled. So we can't determine the person who sits immediate left of Y.

Solutions (36-39):

S36. Ans.(b)
Sol. Condition (i) applied, 'RANTED' = '23£972'

S37. Ans.(c)
Sol. Condition (ii) applied, 'PIRATE' = '7%239ф'

S38. Ans.(d)
Sol. Condition (iii) applied, 'ANTHEM' = '8£9©78'

S39. Ans.(b)
Sol. Condition (iv) applied, 'INHALE' = '£%3©76'

S40. Ans.(a)
Sol. Given word- CONSTITUTION
After applied given condition- BPMRSJSVSJPM
Eliminated repeated letters- BJMPRSV
No. of pairs- RS

S41. Ans.(a)
Sol. Only 1st Statement diminishes the advisory by Health Ministry as healthy food has been suggested. Guests are attending wedding, but they are following all norms and wearing masks. Trade Unions are also following guidelines. Yoga is good for health. Wearing mask has been advised but its black marketing is not the inference in given statement.

S42. Ans.(e)
Sol. Only I can be assumed as case is in Supreme Court regarding OTT represented by Solicitor General and if something is creating problem or result of it is not good then only Government is presenting this case in Supreme Court. There is nothing mentioned and discussed about any producer or director, so II cannot be assumed. (III) is a suggested course of action, it is not an assumption.
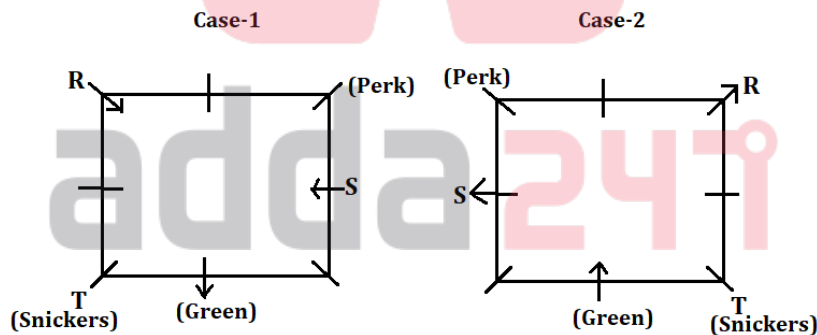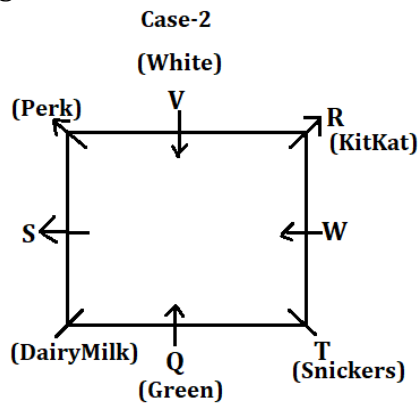
Solutions (43-44):
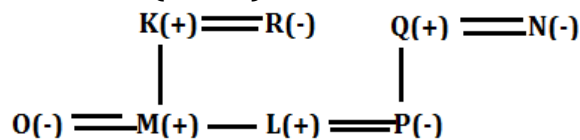

S43. Ans.(c)
S44. Ans.(a)

Solutions (45-48): R sits third to the right of S. The one who has Green balloon sits third to the right of R. S does not have Green balloon. There are two possibilities. T has Snickers and sits on the immediate right of the one who has Green balloon. The one who has Perk sits opposite to the one who has Snickers. R does not have Perk.

W sits third to the right of the one who has Perk. The one who has White balloon sits second to the right of W. The one who has White balloon faces Q. The one who has KitKat sits third to the right of Q. The one who has Dairy Milk sits third to the right of V. From this condition, case-1 will be eliminated.
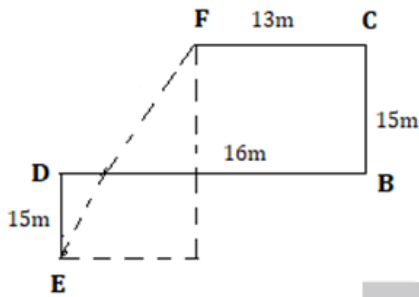
The one who has Pink balloon sits third to the right of U, who faces inside. P does not have Blue balloon. V and T face opposite direction. The Final arrangement is-
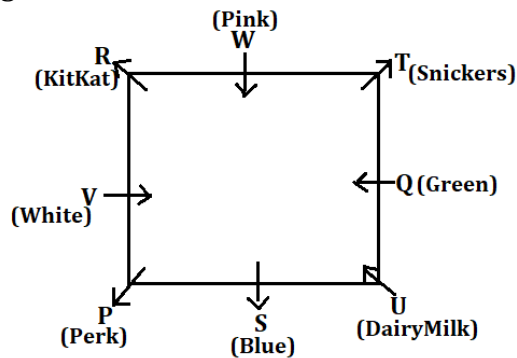
S45. Ans.(a)
S46. Ans.(a)
S47. Ans.(b)
S48. Ans.(e)

Solutions (49-50):

S49. Ans.(e)
Sol.

S50. Ans.(c)
Sol.
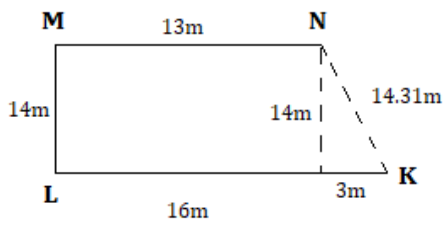
S51. Ans.(c)
Sol. Evidence in support of the given answer can be found in the following statement, '*Contactless assessment will minimise the interface between the assessing officer and the assessee, and improve compliance. Tax officers will also desist from making high-pitched assessments in their zeal to meet collection targets.*'
Compliance means the state or fact of according with or meeting rules or standards.
Zeal means great energy or enthusiasm in pursuit of a cause or an objective.
Flouting means openly disregard (a rule, law, or convention).

S52. Ans.(b)
Sol. Eminently means to a notable degree; very.

Renowned means known or talked about by many people; famous.

Meagre means lacking in quantity or quality.

Going through the meaning of the given options, it can be clearly seen that the correct answer choice would be option (b)

S53. Ans.(a)
Sol. From the given reasons, only (ii) is mentioned in the passage. Evidence supporting given argument can be found in the following statement, '*Corruption depends on human interface and the misuse of arbitrary powers by taxmen.*'

S54. Ans.(d)
Sol. Taking hint from the preceding sentence which is talking about how tax evaders can be tracked. So, following the same idea in the given sentence, it can be seen that 'traced' is the most appropriate filler choice.

S55. Ans.(b)
Sol. From the given suggestions only second is mentioned in the passage. Evidence in support of the given argument can be found in the following statement, '*the way to augment direct tax collections is to clean up the goods and services tax (GST), which generates audit trails to income currently escaping tax.*'

S56. Ans.(c)
Sol. Desist means stop doing something; cease or abstain.

So, from the given options, 'continue' is opposite in meaning to the given word. Whereas, 'abstain' and 'cease' are its synonym.

S57. Ans.(b)
Sol. Refer to the following statement for supporting arguments:

Option (a): *Nearly 66% of the total tax collections in the country come from indirect taxes that are borne by the rich and poor alike.*

Option (b): *Data analytics must be used to track the physical volumes of raw materials along their production chain ending in tax-evaded goods.*

Option (c): No information is provided in the passage to support the given statement.

Going through the given statements it can be seen that correct answer choice would be option (b).

S58. Ans.(c)
Sol. From the given statements, only third statement can be inferred from the given passage. Evidence in support of the given answer can be found in the following statement, '*Craving for a modest amount of autonomy unites principals and teachers from across the sharply divided segments of our vast network of schools.*'

S59. Ans.(c)
Sol. Accrued means received or accumulated in regular or increasing amounts over time.
Dimmed means make or become less intense.
Pervades means be present and apparent throughout.
Appeal means make a serious, urgent, or heartfelt request.
Going through the meaning of the given options and taking hint from the sentence preceding the given sentence which is talking about how media is biased toward rural areas, it can be seen that 'pervades' is the most appropriate filler choice.

S60. Ans.(a)
Sol. From the given options, only first can be inferred from the given passage. Supporting evidence can be found in the following statement, '*For those serving in government-run schools, there is no provision in the rule book for freedom on any count that matters. No matter how senior you are, your job is to silently follow the orders and circulars issued by the directorate and the examination board.*'

S61. Ans.(a)
Sol. From the given factors only first is mentioned in the passage. Evidence in support of the given answer can be found in the following statement, '*This analogy applies to the state of children's education. Decisions pertaining to it are dependent on structures designed to overlook local factors. These structures were forged to ensure total compliance, no matter how vast the system became and how diverse remained the demands served by it.*'

S62. Ans.(b)
Sol. From the given reasons, only second and third have been mentioned in the passage. Refer to the following statement for supporting answer, '*Many experts think that the uneven spread is merely a matter of poor reporting from villages.They smile if you tell them that many Panchayats are actively guarding their territories. It is not surprising that the awareness and resilience demonstrated by many villages is largely ignored in the media.*'

S63. Ans.(c)
Sol. From the given options, only (i) and (ii) are mentioned in the passage. Evidence supporting given argument can be found in the following statement, '*That is why all schools, urban and rural, have stayed closed since the last week of March. Cooked mid-day meals served to children at school have been replaced in many States by the distribution of grain and money to their children.*'

S64. Ans.(c)
Sol. From the given options, only (c) is discussed in the given passage. Refer to the following statement for supporting evidence, '*If village schools had some autonomy, many would have found local conditions good enough to allow children to come for their meals and spend some time studying.*'

S65. Ans.(b)
Sol. Adversity means a difficult or unpleasant situation.
Contender means a person or group competing with others to achieve something.
Hardship means severe suffering or privation.
Effervescent means vivacious and enthusiastic.

S66. Ans.(c)
Sol. From the given sentences only A-D can be connected to form a meaningful sentence. The sentence thus formed is:
The Council of Scientific and Industrial Research is working on developing "mega labs"To ramp up testing for COVID-19 as well as improve the accuracy rate.

S67. Ans.(a)
Sol. From the given options, only A-E and B-D can be connected to form a contextually meaningful and grammatically correct sentence. The sentences thus formed are:
Independence Day celebrations will be held at the Delhi Secretariat instead of the Chhatrasal Stadium this year in accordance with social distancing norms.
A small function was being organized at the Players Building with 100 dignitaries, including Chief Minister, the Cabinet of Ministers and Members of Parliament.

S68. Ans.(d)
Sol. Reading through the given sentences it can be clearly seen that (C) is talking about the need to firmly deal with attack on democracy, and sentence (D) is presenting with the outcome if the requisite steps are not taken. On the basis of this information both the given sentences can be linked to form a contextually meaningful sentence. The sentence thus formed is:
If attack on democracy is not dealt with requisite degree of firmness, it may affect national honour and prestige in the comity of nations.

S69. Ans.(b)
Sol. From the given sentences, B-F and B-E can be linked together to form a contextually meaningful sentence. But, B-E will induce a grammatical error in the sentence due to disagreement of tenses in both parts. So, only B-F is the most appropriate answer choice. The sentence thus formed is:
President Ram Nath Kovind said while India believes in peace, it is also capable of giving a befitting response to any attempt of aggression.

S70. Ans.(a)
Sol. From the given sentences, only A-E and B-D can be connected to form grammatically correct and contextually meaningful sentence. The sentences thus formed are:
The undergraduate political science students were allegedly sent mock test papers instead of exam papers for a short period during their open book exam
A day before the Independence Day celebration, the city has been turned into a fortress with multiple layers of security.

S71. Ans.(d)
Sol. As the given sentence is talking about installation of fibre cable to connect Andaman and Nicobar Islands with the rest of India, it can be seen that 'outskirts' is incorrectly used. Going through the options, it is found that 'mainland' which means relating to or forming the main part of a country or continent, is the correct replacement.
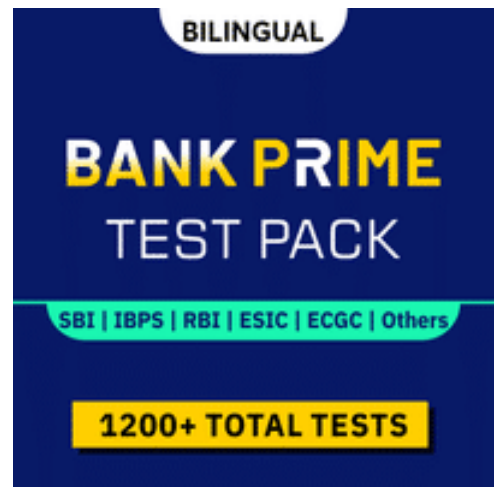
S72. Ans.(a)
Sol. Given sentence is talking about the **responsibility** of government for development of border linked areas. Also, given sentence is in passive voice. So, the usage of 'oblige' may be contextually correct but it is not grammatically correct. So, going through the options, it can be seen that only 'committed' satisfies the given criteria and hence, the correct answer choice.

S73. Ans.(c)
Sol. Reading up to the given paragraph it can be seen that given passage is talking about infrastructure development in Andaman and Nicobar Islands. So, in accordance with the main idea of the passage, given sentence too should be about increasing the capacity of ports in this region. 'Enactment' means the process of passing legislation. So, this does not fit the blank contextually and must be replaced with 'enhancement' which means an increase or improvement in quality, value, or extent.

S74. Ans.(e)
Sol. Here, 'competitive' which means competitive prices, services, etc. are as good as or better than other prices, services, etc., is correctly used here. So, the correct answer choice is option (e).

S75. Ans.(c)
Sol. Given sentence is talking about the prerequisite for a self-reliant country which is improved connectivity in the region. So, on the basis of this information and going through the given options, it can be seen that 'waterways' is the most appropriate replacement.

S76. Ans.(a)
Sol. From the given starters, both (i) and (iii) can be used to connect the given sentences. New sentence thus formed will be:
(i) *Due to Delhi governments' order of conversion of five hotels into extensions of five private hospitals, there is increase in the number of beds available for COVID-19 patients.*
(ii) *To increase the number of beds available for COVID-19 patients, Delhi government has ordered conversion of five hotels into extensions of five private hospitals.*
Hence, the correct answer choice would be option (a).

S77. Ans.(d)
Sol. If we read the given statements carefully, we can see that first statement is the 'cause' and second is its 'effect'. So, on the basis of this we can see that only (iii) can be used to merge the given sentences into a single sentence. The sentence thus formed will be: 'Doing away with permit system for inter-State movement of vehicles, there shall be no restriction on movement within and outside a State'

S78. Ans.(b)
Sol. From the given options, only option (ii) can be used to connect the given sentences to form a single one. The final sentence thus formed will be: '*Reaping the fruit of India's effort to ensure that tensions did not rise further, the standoff along the Line of Actual Control with China would be resolved through diplomatic dialogue.*' So, the correct answer choice is option (b).

S79. Ans.(c)

Sol. From the given starters, both (ii) and (iii) can be used to connect the given sentences to form a meaningful one. The sentences thus formed will be:

(i) *Following a plea seeking action against restaurants and commercial establishments causing noise, air and water pollution, the National Green Tribunal directed the New Delhi Municipal Council and the Delhi Pollution Control Committee to furnish an action-taken report.*

(ii) *Mindful of plea filed against restaurants and commercial establishments causing noise, air and water pollution, the National Green Tribunal directed the New Delhi Municipal Council and the Delhi Pollution Control Committee to furnish an action-taken report.*

So, the correct answer choice is option (c).

S80. Ans.(b)

Sol. From the given options, only (ii) can be used to connect the given sentences. The final sentence thus formed will be: '*With Goa witnessing a huge influx of people in the last couple of days, the government is planning to go back to its previous system of issuing travel passes.*' Hence, the correct answer choice is option (b).

S81. Ans.(c)

Sol. Given part is a special of paired adjectives in which adjectives are used in the following sequence, Quantity>Opinion>Size>Age>Shape>Color>Origin>Material>Purpose. So, on the basis of this information it can be seen that correct replacement would be option (i).

S82. Ans.(a)

Sol. Here in the highlighted part usage of 'at' is incorrect, instead it should be 'with' because 'go along with' is a phrasal verb which means consent or agree to (a person or proposal). So, from the given options appropriate replacement would be option (ii).

S83. Ans.(e)

Sol. There is no error in the highlighted phrase. So, the correct answer choice would be option (e).

S84. Ans.(d)

Sol. Taking hint from the usage of 'yesterday' in the given sentence it can be seen that given sentence should be in past tense. So, 'have' is incorrectly used here. So, from the given options, both (ii) and (iii) can be used to replace the given phrase.

S85. Ans.(b)

Sol. In the highlighted part usage of 'in' is incorrect instead it should be 'by' because certain verbs take fixed preposition after them. So, from the given replacement both (i) and (ii) can be used to replace the given phrase as both 'is' and 'was' can be used in the given sentence.

S86. Ans.(c)
Sol. (B) and (C) cannot start the sentence as they begins with a verb. And if we go by options the only starter is (D). (D) then will be followed by (B) because subject is followed by a verb and the appropriate verb would be "are". (B) then would be followed by another clause hence, subject of that clause which is in (A). (A) then, is followed by (C). The correct arrangement would be DBAC
Hence, answer would be option (c).
The sentence thus formed is:
While the Dwarapalas from Tamil Nadu are said to be from the 15th century, the Nagaraja, dated 6th to 8th century, is from Rajasthan or Madhya Pradesh.

S87. Ans.(a)
Sol. (D) would start the sentence as it has subject and verb of the sentence. Last word of (D) is party which mandates it would be followed by (C)which further will be followed by (B) . In the last would come (A)
The correct arrangement would be DCBA
Hence, answer would be option (a).
The sentence thus formed is:
Both India and Australia are party to the UNESCO 1970 Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transport of Ownership of Cultural Property.

S88. Ans.(d)
Sol. It is clear that (B) would start the sentence. And if we go through options ,we option (a) ,(b) and (c) get eliminated.
The correct arrangement would be BACD
Hence, answer would be option (d).
The sentence thus formed is:
Besides Capt. Amarinder, his son Raninder Singh and son-in-law Raminder Singh were also accused in the case.

S89. Ans.(b)
Sol. The sentence starts with (D), followed by (A). (A) then will be followed by (B) which further will be followed by (C).
The correct arrangement would be DBAC
Hence, answer would be option (b).
The sentence thus formed is:
The amendments to the transparency legislation were enacted in July, and gave the Centre the power to determine the tenure, salary and perks of the State and Central Information Commissioners.

S90. Ans.(a)
Sol. The sentence starts with (D), followed by (C). (C) then will be followed by (B) which further will be followed by (A).
The correct arrangement would be DCBA.
Hence, answer would be option (a).
The sentence thus formed is:
The Rules to the RTI Amendment Act were notified in October, and reduced the tenure of the Commissioners from five to three years, while also downgrading their status and allowances.

S91. Ans.(c)
Sol. Male employees who are promoted in SBI = $(800 + 700) \times \frac{40}{100} \times \frac{2}{5}$ = 240

Male employees who are promoted in UBI = $240 \times \frac{200}{100}$ = 480

Female employees who are not promoted in SBI = $700 - \left(\left((800 + 700) \times \frac{40}{100}\right) - 240\right)$

= 340

Female employees who are not promoted in UBI = $200 - \left(\left((520 + 200) \times \frac{80}{100}\right) - 480\right)$

= 104
Required Sum = 340 + 104 = 444

S92. Ans.(a)
Sol. Total promoted employee from PNB & BOB together = $(680 + 840) \times \frac{60}{100} + (480 + 720) \times \frac{50}{100}$
= 912 + 600
= 1512
Average number of male employees from SBI & BOB = $\frac{800+480}{2}$ = 640
Required difference = 1512 – 640 = 872

S93. Ans.(d)
Sol. Total employee promoted from UCO = $(400 + 600) \times \frac{80}{100} = 800$
Total employee promoted from SBI = $(800 + 700) \times \frac{40}{100} = 600$
Required percentage = $\frac{800-600}{600} \times 100 = 33\frac{1}{3}\%$

S94. Ans.(c)
Sol. Required difference = $(680 + 840) \times \frac{60}{100} \times \frac{(9-7)}{(9+7)}$ = 114

S95. Ans.(b)
Sol. Ratio of total male employee to female employee promoted from UCO = 3 : 5
Total female employee promoted from UCO = $(400 + 600) \times \frac{80}{100} \times \frac{5}{8} = 500$
Total employee promoted from BOB = $(480 + 720) \times \frac{50}{100} = 600$
Required percentage = $\frac{600}{500} \times 100 = 120\%$

S96. Ans.(e)

Sol. $\frac{1}{8} \times 1440 - 867 + 721 = ?$

$180 - 867 + 721 = ?$

$? = 34$

S97. Ans.(d)

Sol. $64 + 624 - ? = 296$

$? = 392$

S98. Ans.(c)

Sol. $289 + 896 + 144 - 275 = ?$

$? = 1054$

S99. Ans.(a)

Sol. $3 \times 98 + \frac{4}{3} \times 33 - 69 = ?$

$? = 269$

S100. Ans.(b)

Sol. $33 + \frac{1}{16} \times 4096 = ? + 238$

$? = 33 + 256 - 238$

$? = 51$

Solutions (111-115):

Let students who play only Football be 20x.

So, students who play only Badminton = 10x

And, students who play only Cricket = 25x
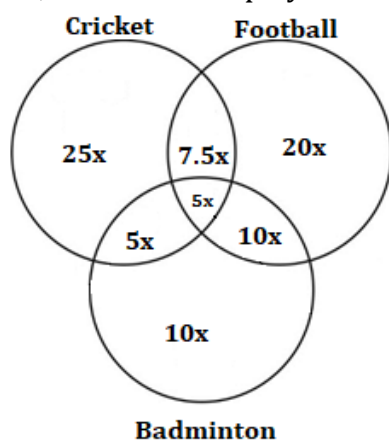
Now, students who play all 3 games together = 5x

Now, students who play Cricket and Football but not Badminton = 7.5x

And, students who play Football and Badminton together = 15x

Now, students who play Football and Badminton but not Cricket = 10x

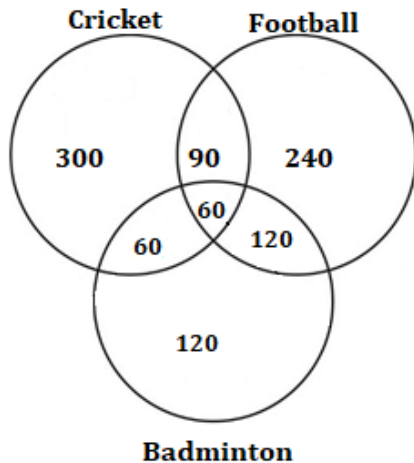Now, students who play both Cricket and Badminton together = 10x

So, students who play Cricket and Badminton but not Football = 5x

ATQ,

$25x + 7.5x + 20x + 5x + 5x + 10x + 10x = 990$

$x = 12$

Cricket **Football**

300 | 90 | 240

60

60 | 120

120

Badminton

S101. Ans.(a)
Sol. Required number of students = 90 + 240 + 60 + 120 = 510

S102. Ans.(d)
Sol. Students playing Cricket and Football together = 90 + 60 = 150

Required difference = 240 − 150 = 90

S103. Ans.(d)
Sol. Required number of students = 90 + 60 + 60 + 120 = 330

S104. Ans.(c)
Sol. Total number of students who play Cricket = 300 + 90 + 60 + 60 = 510

Total number of students who play Badminton = 60 + 60 + 120 + 120 = 360

Required % = $\frac{510-360}{360} \times 100 = 41\frac{2}{3}\%$

S105. Ans.(d)
Sol. Total number of students who play exactly 1 more game along with Cricket = 90 + 60 = 150

Total number of students who play exactly 2 more game along with Football = 60

Required difference = 150 − 60 = 90

S106. Ans.(d)
Sol. $40 \times (1 - \frac{x}{40})^3 = 20.48$

$(1 - \frac{x}{40})^3 = \frac{20.48}{40}$

$(1 - \frac{x}{40})^3 = \frac{512}{1000}$

$1 - \frac{8}{10} = \frac{x}{40}$

= 8 liters

S107. Ans.(b)

Sol. Let the length and breadth of rectangle be 'l' cm & 'b' cm respectively.

Let the side of a square be 'a' cm.

Perimeter of square = 48 cm

4a = 48 cm

a = 12 cm

So, l = 12 cm

ATQ,

b = $12 - 4 = 8\ cm$

Req. area = $12 \times 8 = 96\ cm^2$

S108. Ans.(a)

Sol. Total age of A, B, & C = $48 \times 3 = 144\ years$

Let age of A & C is 3x & 5x respectively.

Age of B = $3x \times \frac{4}{3} = 4x$

ATQ.

$3x + 4x + 5x = 144$

$12x = 144$

$x = 12$

Req. difference = $(4 \times 12 - 2) - (3 \times 12 + 5)$

$= 46 - 41 = 5\ years$

S109. Ans.(d)

Sol. Profit sharing ratio of P, Q & R

$28000 \times 6 + \left(28000 \times \frac{125}{100}\right) \times 6 : 16000 \times 6 + 10000 \times 6 : 20000 \times 12$

$378000 : 156000 : 240000$

$63 : 26 : 40$

Req. difference = $\frac{3120}{40} \times (63 - 26) = Rs.\ 2886$

S110. Ans.(e)

Sol. Let speed of stream be 5x km/h

And speed of boat in still water = $5x \times \frac{160}{100} = 8x$

Let distances be 'd' km

$\frac{d}{5x + 8x} + \frac{d}{8x - 5x} = 32$

$= \frac{16d}{39x} = 32$

$d = 78x$

Req. time = $\frac{79x}{8x} = 9\frac{3}{4}\ hours$

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Solutions (121-125):

School	Boys	Girls	Total
A	$22 \times 28 = 616$	1200-616 = 584	$24 \times 50 = 1200$
B	$15 \times 28 = 420$	750-420 = 330	$15 \times 50 = 750$
C	$30 \times 28 = 840$	1400-840 = 560	$28 \times 50 = 1400$
D	$16 \times 28 = 448$	600-448 = 152	$12 \times 50 = 600$
E	$17 \times 28 = 476$	1050-476 = 574	$21 \times 50 = 1050$

S111. Ans.(e)
Sol. Total girls from school B and D together $= \frac{27}{100} \times 5000 - \frac{31}{100} \times 2800 = 482$

Required % $= \frac{482}{40 \times 50} \times 100 = 24.1\%$

S112. Ans.(e)
Sol. Required ratio $= (560 + 152) : (330 + 574)$
$= 89 : 113$

S113. Ans.(e)
Sol. Total students in school B in year $2020 = \frac{120}{100} \times 330 + \frac{6}{7} \times 420 = 756$

Required percentage $= \frac{756-600}{600} \times 100 = 26\%$

S114. Ans.(d)
Sol. Total boys who failed the exam from school A $= \frac{25}{1100} \times 616 = 14$

Total girls who failed the exam from school A $= 12 \times 7 - 14 = 70$

Required% $= \frac{70}{560} \times 100 = 12.5\%$

S115. Ans.(a)
Sol. Required average $= \frac{1}{3} \times \frac{(30+16+17)}{100} \times 2800 = 588$

S116. Ans.(e)
Sol. (i) $2x^2 - 12x + 16 = 0$
$2x^2 - 8x - 4x + 16 = 0$
$2x (x - 4) - 4 (x - 4) = 0$
$(x - 4) (2x - 4) = 0$
$x = 4, 2$
(ii) $2y^2 - 20y + 48 = 0$
$2y^2 - 12 y - 8y + 48 = 0$
$2y(y - 6) - 8(y - 6) = 0$
$(y - 6) (2y - 8) = 0$
$y = 4, 6$
$y \geq x$

S117. Ans.(b)

Sol. (i) $x^2 - 3x - 40 = 0$

$x^2 - 8x + 5x - 40 = 0$

$x(x - 8) + 5(x - 8) = 0$

$(x - 8)(x + 5) = 0$

$x = 8, -5$

(ii) $y^2 + 11y + 30 = 0$

$y^2 + 6y + 5y + 30 = 0$

$y(y + 6) + 5(y + 6) = 0$

$(y + 5)(y + 6) = 0$

$y = -6, -5$

$x \geq y$

S118. Ans.(c)

Sol. (i) $2x^2 - x - 3 = 0$

$2x^2 + 2x - 3x - 3 = 0$

$2x(x + 1) - 3(x + 1) = 0$

$(x + 1)(2x - 3) = 0$

$x = \frac{3}{2}, -1$

(ii) $2y^2 - 6y + 4 = 0$

$2y^2 - 2y - 4y + 4 = 0$

$2y(y - 1) - 4(y - 1) = 0$

$(y - 1)(2y - 4) = 0$

$y = 1, 2$

No relation can be established between x and y.

S119. Ans.(c)

Sol. (i) $2x^2 + 14x - 16 = 0$

$2x^2 + 16x - 2x - 16 = 0$

$2x(x + 8) - 2(x + 8) = 0$

$(2x - 2)(x + 8) = 0$

$x = -8, 1$

(ii) $y^2 - y - 12 = 0$

$y^2 - 4y + 3y - 12 = 0$

$y(y - 4) + 3(y - 4) = 0$

$(y + 3)(y - 4) = 0$

$y = -3, 4$

No relation can be established between x and y

S120. Ans.(a)
Sol. (i) $2x^2 - 9x + 10 = 0$

$2x^2 - 5x - 4x + 10 = 0$

$x(2x - 5) - 2(2x - 5) = 0$

$(x - 2)(2x - 5) = 0$

$x = 2, 2.5$

(ii) $4y^2 - 12y + 9 = 0$

$4y^2 - 6y - 6y + 9 = 0$

$2y(2y - 3) - 3(2y - 3) = 0$

$(2y - 3)(2y - 3) = 0$

$y = \frac{3}{2}$

$x > y$

S121. Ans.(d)
Sol. Number of sold Nokia mobile in months of March and December together = 280+360 = 640

Number of sold Samsung Mobile in months of August and October together = 240+360 = 600

Required percentage = $\frac{640-600}{600} \times 100 = 6\frac{2}{3}\%$

S122. Ans.(a)
Sol. Nokia mobile sold in months of January, May and August together = 250+350+300 = 900

Samsung Mobile sold in months of May, August and October together = 380+240+360 = 980

Required ratio = 900:980 = 45:49

S123. Ans.(c)
Sol. Average Number of Sold Nokia Mobile in all these 6 months = $\frac{250+280+350+300+230+360}{6}$

$= \frac{1770}{6} = 295$

Average Number of Sold Samsung Mobile in all these 6 months = $\frac{240+350+380+240+360+350}{6}$

$= \frac{1920}{6} = 320$

Required difference = 320-295 = 25

S124. Ans.(e)
Sol. let number of Nokia and Samsung mobile sold in month of July are 4x and 5x respectively.

Nokia and Samsung mobile sold in Month of July = $\frac{130}{100} \times (280 + 350) = 819$

ATQ,

4x+5x = 819

x= 91

Number of Sold Nakia mobile = 4x = 364

S125. Ans.(b)
Sol. Number of sold Nakia mobile in months of March, May and December together
= 280+350+360 = 990
Number of Sold Samsung Mobile in Months of August, October and December together
= 240+360+350 = 950
Required percentage = $\frac{990}{950} \times 100 = 104.2\% \approx 104\%$ (Approx.)

S126. Ans.(b)
Sol. The pattern is
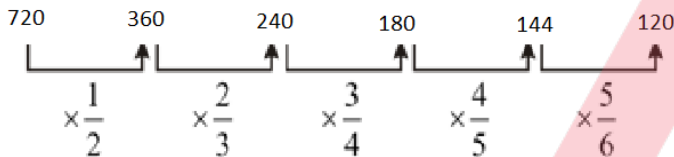$11 + 5 \times 7 = 46$
$46 + 7 \times 9 = 109$
$109 + 9 \times 11 = 208$
$208 + 11 \times 13 = 351$
$351 + 13 \times 15 = 546$

S127. Ans.(a)
Sol.
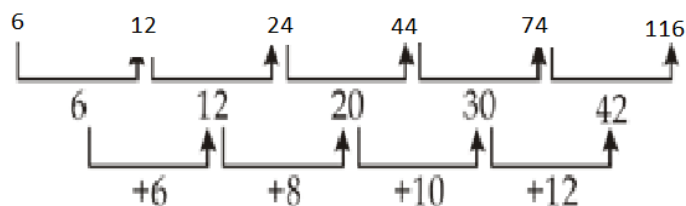

S128. Ans.(b)
Sol. $1+1^2=2$
$2+3^2=11$
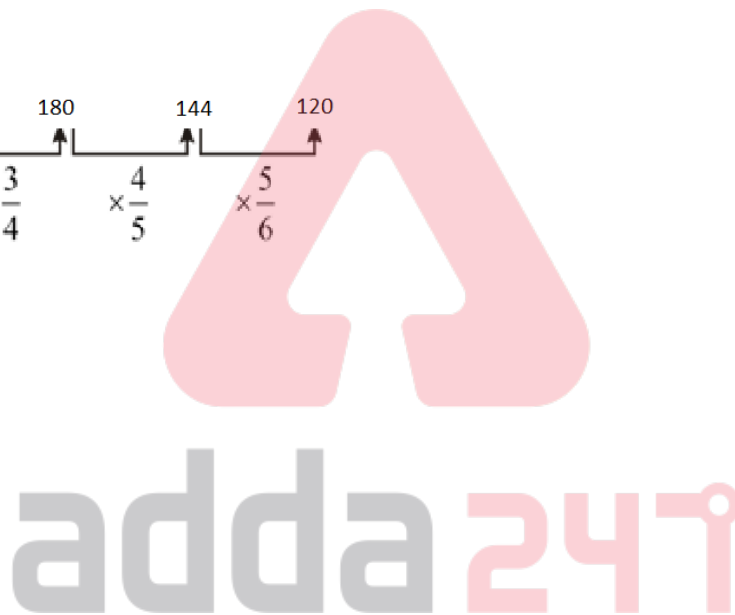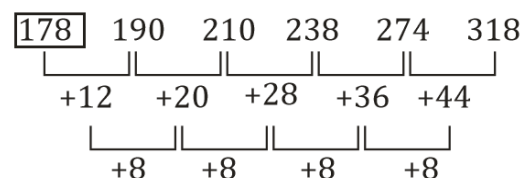$11+5^2=36$
$36+7^2=85$
$85+9^2=166$

S129. Ans.(c)
Sol.

S130. Ans.(d)
Sol. Missing number = 178
Pattern of series –

S131. Ans.(d)
Sol. Let the capacity of tank L.C.M. (15,10, 20) = 60 units
Efficiency of pipe P1 = $\frac{60}{15}$ = 4 $unit/hous$
Efficiency of pipe P2 = $\frac{60}{10}$ = 6 $unit/hous$
Efficiency of pipe P3 = $\frac{60}{20}$ = 3 $unit/hous$
Tank fill by all the three in three hours = $13 \times 3 = 39$ $units$
Reaming tank fill by pipe P3 = $\frac{60-39}{3} = 7$ $hours$
Total time = $3 + 7 = 10$ $hours$

S132. Ans.(e)
Sol. ATQ.
$1600 = \frac{4000 \times R \times 2}{100}$
$R = 10\%$
C.I. for 2 years
$14 + 14 + \frac{14 \times 14}{100} = 29.96\%$
29.96% of 4000
$\frac{29.96}{100} \times 4000 = Rs.\,1198.4$

S133. Ans.(d)
Sol. Let marked price and selling price of an article be 13x & 10x respectively.
Cost price of an article = $10x \times \frac{100}{125} = 8x$
ATQ.
$13x - 8x = 450$
x = 90
Selling price = $10 \times 90 = Rs.\,900$

S134. Ans.(a)
Sol. Let the length of the train be 'l' meter, speed of train be 's' m/sec and speed of man be 'm' m/sec
ATQ.
$\frac{l + 250}{s} = 25$
A man running in opposite direction at speed of 15m/sec.
$\frac{l}{m + s} = 15$
Can't be determined speed of train

S135. Ans.(b)
Sol. Total age of daughters = $4 \times 8 = 32$ $years$ ....(i)
Total age of daughters and their parents = $6 \times 16 = 96$ $years$ .....(ii)
Mother is 4 years younger than father
From (i) & (ii)
Father's age = 34 years
Father's age 2 years ago = $34 - 2 = 32$ $years$

S136. Ans.(b)
Sol. Ratio of efficiency of Amit and Vivek = 5 : 3
Ratio of time taken by Vivek and Sameer alone to complete the work = 5 : 4
Ratio of efficiency of Vivek and Sameer = 4:5
⇒ Ratio of efficiency of Amit, Vivek and Sameer = 20: 12: 15
Total unit of work = $\frac{15}{70} \times 100 \times 35(20 + 15) = 750\ units$
Req. time = $\frac{750}{27} \times \frac{90}{100} = 25\ days$

S137. Ans.(b)
Sol. Let monthly income be 100x
Spent on rent = $100x \times \frac{20}{100} = 20x$
$spent\ on\ food\ (100x - 20x) \times \frac{10}{100} = 8x$
$spent\ on\ cloth = (100x - 20x - 8x) \times \frac{20}{100} = 14.4x$
Remaining amount = $100x - 20x - 8x - 14.4x = 57.6x$
Share of son = $57.6x \times \frac{5}{9} = 32x$
Share of daughter = $57.6x - 32x = 25.6x$
Required difference = $25.6x - 20x = 5.6x$
$5.6x \times \frac{25000}{100x} = Rs.\ 1400$

S138. Ans.(b)
Sol. The probability of choosing bag = $\frac{1}{2}$
So, the required probability = $\frac{1}{2}$(Pink ball from bag 1 + Pink ball from bag 2)
$= \frac{1}{2}\left(\frac{7}{14} + \frac{5}{14}\right)$
$= \frac{12}{28} = \frac{3}{7}$

S139. Ans.(d)
Sol. Let cost price of a shirt be 100x.
Marked price of shirt = 160x
Selling price of shirt = $160x \times \frac{75}{100} = 100x + 950$
$20x = 950$
$x = \frac{95}{2}$
So, selling price of pant = $100 \times \frac{140}{100} \times \frac{95}{2} + 950 = Rs.\ 7600$

S140. Ans.(b)
Sol. Let required distance be D km.
Distance covered by Dev till 12:00 PM = $42 \times 2 = 84$
Time taken by them to meet each other = $\frac{D-84}{42+28} = 2.5$
So, required distance = $D = 2.5 \times 70 + 84$
$= 259\ km$