

SSC MOCK TEST - 287 (SOLUTION)

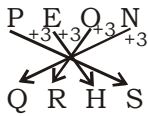
1. (B) As,

$$167 \Rightarrow 7 \times 6 + 1 = 43$$

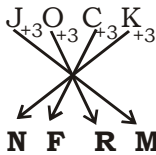
Similarly,

$$245 \Rightarrow 5 \times 4 + 2 = \mathbf{22}$$

2. (A) As,



Similarly,



3. (C) Candela is the unit of Luminous Intensity, while Pascal is the unit of Pressure.

4. (B) $5125 \Rightarrow 5^3 = 125$

$$\mathbf{8564 \Rightarrow 8^3 = 512 \neq 564}$$

$$7343 \Rightarrow 7^3 = 343$$

$$6216 \Rightarrow 6^3 = 216$$

5. (D) Except Eagle, all are flightless birds.

6. (C) (A)

H	C	B	G	[8+2=10]
8	3	2	7	[3+7=10]

(B)

L	P	O	K	[12+15=27]
12	16	15	11	[16+11=27]

(C)

F	M	E	L	[6+5=11]
6	13	5	12	[13+12=25]

(D)

R	J	I	Q	[18+9=27]
18	10	9	17	[10+17=27]

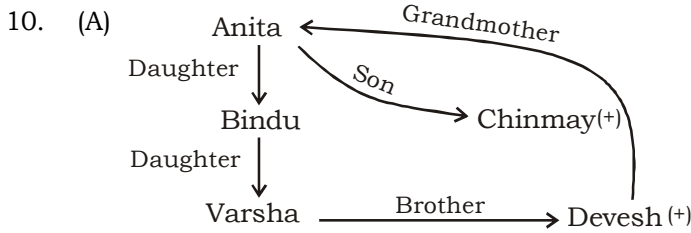
7. (B) 3. Effaceable \rightarrow 5. Effacement \rightarrow 4. Effacements \rightarrow 1. Effacers \rightarrow 2. Effacing

8. (B)

5,	30,	155,	780,	3905
└──┬──┘	└──┬──┘	└──┬──┘	└──┬──┘	└──┬──┘
($\times 5$)+5	($\times 5$)+5	($\times 5$)+5	($\times 5$)+5	($\times 5$)+5

9. (A)

A	G	M	S	Y	C	I	O	U	A	E	K	Q	W	C	G	M	S	Y	E	I	O	U	A	G	K	Q	W	C	I
+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2
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(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)	(+2)



11. (C) $9^2 + 8^2 + 9 + 8 = 162$
 $11^2 + 6^2 + 11 + 6 = 174$
 $8^2 + 13^2 + 8 + 13 = \mathbf{254}$

12. (A) $13^2 + 5 = 174$
 $17^2 + 9 = 298$
 $20^2 + 10 = \mathbf{410}$

13. (D) TRANSITION can be formed from the word RATIONALISATION.

14. (B) $\begin{matrix} \text{P R Q S T} & \text{and} & \text{O T U W V} \\ \downarrow \downarrow \downarrow \downarrow \downarrow & & \downarrow \downarrow \downarrow \downarrow \downarrow \\ 13245 & & 05687 \end{matrix}$

Similarly,

$\begin{matrix} \text{T X O O P} \\ \downarrow \downarrow \downarrow \downarrow \downarrow \\ 59021 \end{matrix}$

15. (B) $5 \times 8 - 5 + 5 \div 1 = 12$
 After changing the sign,
 $5 + 8 \times 5 \div 5 - 1 = 12$
 $5 + 8 \times 1 - 1 = 12$
 $5 + 8 - 1 = 12$
 $13 - 1 = 12$
 $12 = 12$

16. (D)

17. (D) $\begin{matrix} \text{I N D U S} \\ \downarrow \downarrow \downarrow \downarrow \downarrow \\ 03865 \end{matrix}$

And

$\begin{matrix} \text{T E N N I S} \\ \downarrow \downarrow \downarrow \downarrow \downarrow \\ 243305 \end{matrix}$

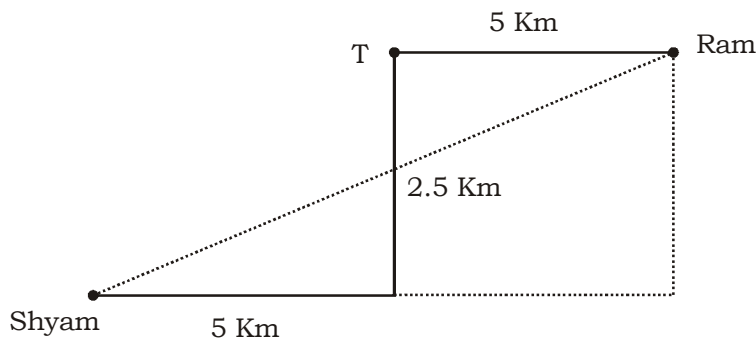
Then,

$\begin{matrix} \text{S T U D E N T} \\ \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \\ 5268432 \end{matrix}$

18. (C) R K S B P M / R K S B P M / R K S

19. (D) M N \square O P Q
 |
 Second

20. (B)



$$\text{Required distance} = \sqrt{10^2 + (2.5)^2}$$

$$= \sqrt{100 + 6.25} = \sqrt{106.25} \text{ Km}$$

21. (D) From figure (i) and (iii),

Red **Yellow** Green

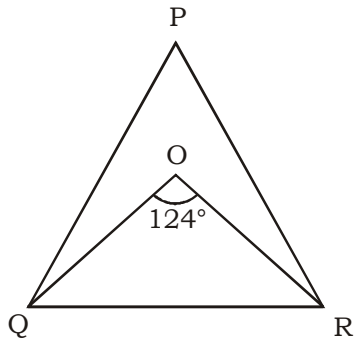
Red **Blue** Violet

∴ "Yellow" colour is opposite to "Blue".

22. (C) 23. (A) 24. (A) 25. (A)

27. (A) The first time an Indian won the award was way back in 1937. Gobind Behari Lal had won the Pulitzer Prize for journalism, along with four others, for his coverage in the field of science.
30. (B) Gamma rays and x-rays consist of high-energy waves that can travel great distances at the speed of light and generally have a great ability to penetrate other materials.
33. (B) Kerala Government Plans Judicial Probe Against Central Probe Agencies.
34. (B) Article 24 Constitution of India: Prohibition of employment of children in factories, etc. No child below the age of fourteen years shall be employed to work in any factory or mine or engaged in any other hazardous employment.
35. (D) The scientific term "viticulture" refers to the science, study and production of grapes.
36. (C) The conflict between the Sri Lankan government and the Liberation Tigers of Tamil Eelam (LTTE) has lasted nearly three decades and is one of the longest-running civil wars in Asia.
39. (D) Venus also has no moons, though reports of a moon around Venus have circulated since the 17th century.
41. (C) Infrared radiations are also known as heat waves
45. (C) It is authorised to print currency notes from 2 rupees to 10000 rupees. ... But the circulation of currency and coins is done by RBI only.
46. (D) Products offered under Pradhan Mantri Loan Yojana are classified under 3 loan schemes named as Shishu, Kishor and Tarun.
47. (C) 12 to 16 grams of hemoglobin in every hundred ml of blood is present in a healthy individual.
49. (A) On 10 September 1642, Shah Jahan formally confirmed Dara Shikoh as his heir, granting him the title of Shahzada-e-Buland Iqbal ("Prince of High Fortune") and promoting him to command of 20,000-foot and 20,000 horse.

51. (A)



Given:

QO and RO is the bisector of $\angle Q$ and $\angle R$ respectively.

In ΔQOR ,

$$\angle QOR + \angle OQR + \angle ORQ = 180^\circ$$

$$124^\circ + \frac{1}{2}\angle PQR + \frac{1}{2}\angle PRQ = 180^\circ$$

$$\frac{1}{2}(\angle PQR + \angle PRQ) = 180^\circ - 124^\circ$$

$$\angle PQR + \angle PRQ = 56 \times 2$$

$$\angle PQR + \angle PRQ = 112^\circ \quad \dots\dots(i)$$

Now, In ΔPQR ,

$$\angle PQR + \angle PRQ + \angle QRP = 180^\circ$$

$$112^\circ + \angle QRP = 180^\circ \quad \text{[From (i)]}$$

$$\angle QRP = 180^\circ - 112^\circ = 68^\circ$$

52. (C) Work done by P, Q and R in 1 day = $3 + 4 + 5 = 12$

But P, Q and R take a total of 35 days.

$$\text{Total work} = 35 \times 12 = 420$$

$$\text{Work done by P and Q in 1 day} = 3 + 4 = 7$$

$$\text{Time taken by P and Q to complete the half of the work} = \frac{420}{2 \times 7} = 30 \text{ days}$$

53. (D) Marked price of an article = ₹ 660

$$\text{Selling price} = ₹ 540$$

$$\text{Loss} = 10\%$$

$$\text{Cost Price of an article} = \frac{540}{90} \times 100 = ₹ 600$$

$$\therefore \text{Required \%} = \left(\frac{660 - 600}{600} \times 100 \right) \% = 10\%$$

54. (A) Let the speed of A is V_1 and speed of B is V_2 .
Let B takes t hour to cover 15 km distance.

$$\text{So, time taken by B to cover 15 km, } t = \frac{15}{V_2}$$

$$\text{Time taken by A to cover 15 km, } t + 0.5 = \frac{15}{V_1} \quad \dots\dots(i)$$

As per the question, when $V_1 = 2 \times$ the initial speed

$$\text{Then time taken by A to cover 15 km, } t - 1 = \frac{15}{2V_1} \quad \dots\dots(ii)$$

From equation (i) and (ii),

$$\frac{t + 0.5}{t - 1} = \frac{\frac{15}{V_1}}{\frac{15}{2V_1}}$$

$$t + 0.5 = 2t - 2$$

$$2t - t = 2 + 0.5 \text{ hour}$$

$$t = 2.5 = 2\frac{1}{2} \text{ hour}$$

$$\text{Hence the speed of the car B, } V_2 = \frac{15}{2.5} = 6 \text{ hours}$$

55. (C) The number obtained is $32 - x$, $38 - x$, $42 - x$ and $52 - x$.
ATQ,

$$\frac{32 - x}{38 - x} = \frac{42 - x}{52 - x}$$

$$(32 - x)(52 - x) = (38 - x)(42 - x)$$

$$1664 - 32x - 52x + x^2 = 1596 - 38x - 42x + x^2$$

$$1664 - 1596 = -80x + 84x$$

$$4x = 68$$

$$x = \frac{68}{4} = 17$$

\therefore Mean proportion between the number $x + 3$ and $4x + 12$

$$= \sqrt{(x + 3)(4x + 12)} = \sqrt{(17 + 3)(17 \times 4 + 12)}$$

$$= \sqrt{20 \times 80} = \sqrt{1600} = 40$$

56. (B) $\operatorname{cosec} \theta - \cot \theta = 2 \quad \dots\dots(i)$

We know that,

$$\operatorname{cosec}^2 \theta - \cot^2 \theta = 1$$

$$(\operatorname{cosec} \theta + \cot \theta)(\operatorname{cosec} \theta - \cot \theta) = 1$$

$$(\operatorname{cosec} \theta + \cot \theta) \times 2 = 1$$

$$\operatorname{cosec} \theta + \cot \theta = \frac{1}{2} \quad \dots\dots(ii)$$

Adding equation (i) and (ii), we get

$$2\operatorname{cosec} \theta = 2 + \frac{1}{2}$$

$$\operatorname{cosec} \theta = \frac{5}{4}$$

$$\sin \theta = \frac{1}{\operatorname{cosec} \theta} = \frac{4}{5}$$

Now,

$$\cos \theta = \sqrt{1 - \sin^2 \theta} = \sqrt{1 - \left(\frac{4}{5}\right)^2}$$

$$= \sqrt{1 - \frac{16}{25}} = \sqrt{\frac{9}{25}} = \frac{3}{5}$$

57. (A) $a^2 + 9b^2 + c^2 - 6b + 3 = 2(a + c)$
 $a^2 + 9b^2 + c^2 - 6b + 3 = 2a + 2c$
 $a^2 + 1 - 2a + (3b)^2 + 1 - 6b + c^2 + 1 - 2c = 0$
 $(a - 1)^2 + (3b - 1)^2 + (c - 1)^2 = 0$
 $(a - 1)^2 = 0, (3b - 1)^2 = 0$ and $(c - 1)^2 = 0$

$$a = 1, b = \frac{1}{3} \text{ and } c = 1$$

$$\therefore a^3 + b^2 - c^4 = (1)^3 + \left(\frac{1}{3}\right)^2 - (1)^4$$

$$= 1 + \frac{1}{9} - 1 = \frac{1}{9}$$

58. (C) LCM of $\left(2 \text{ and } 5\frac{1}{2}\right) = \text{LCM of } \left(2 \text{ and } \frac{11}{2}\right)$

$$\text{Required answer} = \frac{\text{LCM of 2 and 11}}{\text{HCF of 1 and 2}} = \frac{22}{1} = 22 \text{ feet}$$

59. (D) Let the number of first class tickets = x
 Number of 2nd class tickets = $18 - x$

ATQ,

$$10x + 3(18 - x) = 110$$

$$\therefore x = 8$$

$$2^{\text{nd}} \text{ class tickets} = 10$$

$$\text{New cost} = 10 \times 10 + 3 \times 8 = ₹ 124$$

60. (D) Let $2^{32} = x$ and Let $(2^{32} + 1) = (x + 1)$ be divisible by a number n .

$$\text{Then, } (2^{96} + 1) = (x^3 + 1) = (x + 1)(x^2 - x + 1)$$

Which is clearly divisible by n as $(x + 1)$ is divisible by n .

61. (B) By alligation:-

$$\begin{array}{ccc} 90 & & 18 \\ \downarrow & \swarrow & \downarrow \\ 24 & 42 & 48 \\ 1 & : & 2 \end{array}$$

$$\text{Amount of 18\%} = \frac{2}{3}$$

$$\text{Amount of 90\%} = \frac{1}{3}$$

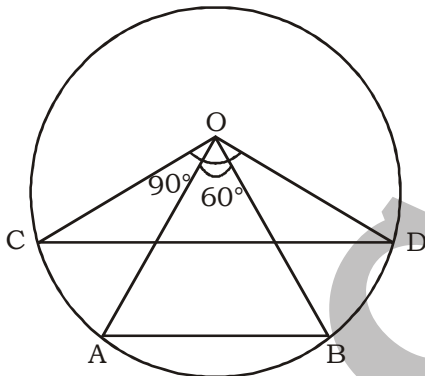
$$\therefore \text{Number of quartz which should be replaced} = \frac{1}{3} \times 27 = 9$$

62. (D) Value of ₹ 6440 due 8 months = $\frac{6440 \times 100}{100 + 18 \times \frac{8}{12}}$

$$= \frac{6440 \times 100}{112} = ₹ 5750$$

Clearly, ₹ 10000 in cash is better offer.

63. (B)



Let the radius of circle be r .

In $\triangle AOB$,

$$AB^2 = OB^2 + OA^2 - 2 \times OA \times OB \times \cos \angle AOB \text{ (cosine rule)}$$

$$AB^2 = r^2 + r^2 - 2 \times r \times r \times \cos 60^\circ$$

$$AB^2 = 2r^2 - 2r^2 \times \frac{1}{2} \quad \left(\because \cos 60^\circ = \frac{1}{2} \right)$$

$$x^2 = r^2$$

$$x = r$$

In $\triangle COD$,

$$CD^2 = OC^2 + OD^2 - 2 \times OC \times OD \times \cos \angle COD$$

$$CD^2 = r^2 + r^2 - 2 \times r \times r \times \cos 90^\circ$$

$$CD^2 = 2r^2 \quad (\because \cos 90^\circ = 0)$$

$$y = \sqrt{2}r$$

$$y = \sqrt{2}x \quad (\because r = x)$$

64. (C) Since $\frac{2}{5}$ th of the work is completed in the 25 days, remaining $\frac{3}{5}$ th of the work is to be completed in 25 days.

Let x men work in for 25 days to complete $\frac{3}{5}$ th of the work.

$$\frac{M_1 D_1 H_1}{W_1} = \frac{M_2 D_2 H_2}{W_2}$$

$$\frac{25 \times 105 \times 8 \times 5}{2} = \frac{x \times 25 \times 9 \times 5}{3}$$

$$\frac{105 \times 8}{2 \times 3} = 140$$

\therefore Additional men employed = $140 - 105 = 35$

65. (B) ATQ,

$$\frac{L+4}{B+4} = \frac{4}{3}$$

$$3L + 12 = 4B + 16$$

$$3L - 4B = 4$$

..... (i)

$$\text{and } \frac{L-4}{B-4} = \frac{2}{1}$$

$$L - 4 = 2B - 8$$

$$L - 2B = -4$$

..... (ii)

Solving Equation (i) and (ii), we get

$$L = 12 \text{ m and } B = 8 \text{ m}$$

66. (D) Diameter of iron sphere = 7 cm

$$\text{Radius of iron sphere} = \frac{7}{2} \text{ cm}$$

$$\text{Volume of iron sphere} = \frac{4}{3} \pi r^3 = \frac{4}{3} \pi \times \left(\frac{7}{2}\right)^3 \text{ cm}^3$$

$$\text{Radius of conical vessel} = 7 \text{ cm}$$

$$\text{Volume of conical vessel} = \frac{1}{3} \pi r^2 h = \frac{1}{3} \pi \times (7)^2 \times h$$

ATQ,

$$\frac{1}{3} \pi (7)^2 \times h = 2 \times \frac{4}{3} \pi \times \frac{7 \times 7 \times 7}{2 \times 2 \times 2}$$

$$h = \frac{(7)^3}{(7)^2}$$

$\therefore h = 7 \text{ cm}$

67. (C) Whole surface area of prism = $S = 2A + P_b \times h$ (i)

Lateral surface area = Area of ends

$$2A = P_b h$$

$$49\sqrt{3} = 4A$$

$$49\sqrt{3} = 4 \times \frac{\sqrt{3}}{4} a^2$$

[since base is equilateral triangle of side a]

$$\therefore a = 7 \text{ m}$$

$$P_b = 3a = 21 \text{ m}$$

Now,

$$2A = P_b h$$

$$2 \times \frac{\sqrt{3}}{4} \times 7^2 = 3 \times 7 \times h$$

$$h = 2.02 \text{ m}$$

68. (B) Diameter of pipe = 14 cm

$$\text{Radius of pipe} = \frac{14}{2} \text{ cm} = 7 \text{ cm}$$

$$\text{Volume of cylindrical pipe} = \pi r^2 h$$

$$\text{Volume of water pumped out in 2 hours} = \frac{22}{7} \times 7 \times 7 \times 15 \times 2 \times 3600 = 16632000 \text{ cm}^3$$

$$1000 \text{ cm}^3 = 1 \text{ litre}$$

$$16632000 = \frac{1}{1000} \times 16632000 = 16632 \text{ litres}$$

69. (A) We know that y co-ordinate of any point on x -axis is zero.

$$\therefore y = \frac{m_1 y_2 + m_2 y_1}{m_1 + m_2}$$

$$0 = \frac{m_1(2) + m_2(-3)}{m_1 + m_2}$$

$$2m_1 - 3m_2 = 0$$

$$\frac{m_1}{m_2} = \frac{3}{2} = 3 : 2$$

70. (B) Let the plane covers x km with 440 km/h and $(x - 770)$ km at a speed of 660 km/h.

Hence, it covers a total distance of

$(2x - 770)$ km at a speed of 500 km/h.



$$\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$$

$$500 = \frac{2x - 770}{\frac{x}{440} + \frac{x - 770}{660}}$$

$$\frac{2x-770}{500} = \frac{x}{440} + \frac{x-770}{660}$$

$$x = 1760$$

$$\begin{aligned} \therefore \text{Total distance covered} &= 2x - 770 \\ &= 2 \times 1760 - 770 = 2750 \text{ km} \end{aligned}$$

71. (D) Let the distance between A and B be x km.

Given,

Speed of boat in still water = 9 km/h and speed of current = 3 km/h

Upward speed = $(9 - 3) = 6$ km/h and

Downward speed = $(9 + 3) = 12$ km/h

ATQ,

$$\frac{x}{6} + \frac{x}{12} = 3$$

$$\frac{2x+x}{12} = 3$$

$$3x = 36$$

$$x = 12 \text{ km}$$

72. (C) Annual average of the total production = $\frac{74+71+75+90+80+86}{6} = 79.33 \approx 80$

Clearly, this is the production of all types of cars in 2003

73. (D) From the table the production of car S has been continuously increasing during the period 1999 to 2004.

74. (C) In 2003,

$$P + Q = 21 + 12 = 33$$

$$R + S = 13 + 20 = 33$$

75. (D) Total number of all types of cars in the year 2003 = 80

$$25\% \text{ of } 80 = 25 \times \frac{80}{100} = 20$$

Clearly, it is of S type.

MEANINGS IN ALPHABETICAL ORDER

Asceticism	severe self-discipline and avoidance of all forms of indulgence, typically for religious reasons	वैराग्य
Beverage	a drink, especially one other than water	पेय पदार्थ
Bohemian	a socially unconventional person, especially one who is involved in the arts	बोहेनिया का
Cosmopolitan	including or containing people from many different countries	विश्ववादी
Crash	(of a vehicle) collide violently with an obstacle or another vehicle	दुर्घटना
Edifice	a building, especially a large, imposing one	भवन
Frontier	a line or border separating two countries	सीमांत
Hypothetical	of, based on, or serving as a hypothesis	काल्पनिक
Innovate	make changes in something established, especially by introducing new methods, ideas	नया
Palace	the official residence of a sovereign, archbishop, bishop, or other exalted person	महल
Philanthropist	a person who seeks to promote the welfare of others, especially by the generous donation of money to good causes	लोकपोषक
Rotunda	a round building or room, especially one with a dome	गोल-घर
Spire	a tapering conical or pyramidal structure on the top of a building, typically a church tower	शिखर
Strive	make great efforts to achieve or obtain something	प्रयास करना

SSC MOCK TEST - 287 (ANSWER KEY)

- | | | | |
|---------|---------|---------|----------|
| 1. (B) | 26. (A) | 51. (A) | 76. (A) |
| 2. (A) | 27. (A) | 52. (C) | 77. (D) |
| 3. (C) | 28. (A) | 53. (D) | 78. (D) |
| 4. (B) | 29. (C) | 54. (A) | 79. (B) |
| 5. (D) | 30. (B) | 55. (C) | 80. (C) |
| 6. (C) | 31. (B) | 56. (B) | 81. (B) |
| 7. (B) | 32. (C) | 57. (A) | 82. (D) |
| 8. (B) | 33. (B) | 58. (C) | 83. (B) |
| 9. (A) | 34. (B) | 59. (D) | 84. (A) |
| 10. (A) | 35. (D) | 60. (D) | 85. (A) |
| 11. (C) | 36. (C) | 61. (B) | 86. (B) |
| 12. (A) | 37. (C) | 62. (D) | 87. (A) |
| 13. (D) | 38. (C) | 63. (B) | 88. (C) |
| 14. (B) | 39. (D) | 64. (C) | 89. (B) |
| 15. (B) | 40. (A) | 65. (B) | 90. (B) |
| 16. (D) | 41. (C) | 66. (D) | 91. (C) |
| 17. (D) | 42. (B) | 67. (C) | 92. (B) |
| 18. (C) | 43. (A) | 68. (B) | 93. (C) |
| 19. (D) | 44. (C) | 69. (A) | 94. (B) |
| 20. (B) | 45. (C) | 70. (B) | 95. (C) |
| 21. (D) | 46. (D) | 71. (D) | 96. (C) |
| 22. (C) | 47. (C) | 72. (C) | 97. (C) |
| 23. (A) | 48. (D) | 73. (D) | 98. (B) |
| 24. (A) | 49. (A) | 74. (C) | 99. (D) |
| 25. (A) | 50. (C) | 75. (D) | 100. (D) |

76. (A) Replace 'based' by 'having'.

77. (D) No error

86. (B) 'Either ... or', 'neither nor:'both and', 'not only but also' should be followed by the same part of speech.

87. (A) We normally use 'ago' with the past simple, don't use it with the present perfect.

90. (B) The correct spelling of 'Disclaimer' is 'Disclaimer'.

91. (C) The correct spelling of 'Monumant' is 'Monument'.