SSC MOCK TEST - 27
ANSWER WITH SOLUTION

1. (D)
(A) C X D W
opposite opposite
(B) G T H S
opposite opposite
(C) J Q K P
opposite opposite
(D) **H R I S**
opposite
opposite

2. (C)

3. (C)
(A) 6 — 36 (Both are even number)
Square
(B) 8 — 64 (Both are even number)
Square
(C) **5 — 25 (Both are odd number)**
Square
(D) 4 — 16 (Both are even number)
Square

4. (A) Except giraffe, all are pet animals.

5. (C)
(A) E D H G
−1 −1
(B) L K O N
−1 −1
(C) **U V W X**
+1 +1
(D) Q P T S
−1 −1

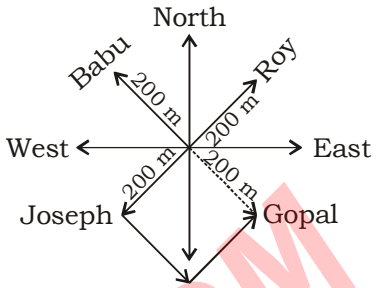
6. (B)

7. (D)

8. (B) According to direction.

9. (B)

10. (*)



11. (D) a c d / b d e / c e f / d f g / e g h

12. (B)
Foundation (1) Building (3) —
Plastering (2) Painting (4)

13. (C) Date of birth in descending chronology will be–
1. 15.04.1950
4. 20.04.1950
2. 14.05.1960
5. 25.05.1960
3. 14.06.1960

14. (A) 83**2684**

15. (B) 56**7956**

16. (C) 65**0183**
85**0960**

17. (D) 48**2290** 65**2290**
Common Serial Number

18. (D)
I **III** **V**
4 16 64 (×4, ×4)
6 24 96 (×4, ×4)
8 32 128 (×4, ×4)
12 48 192 (×4, ×4)
16 64 256 (×4, ×4)
23 92 368 (×4, ×4)

19. (B)

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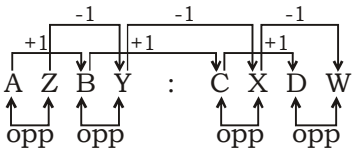
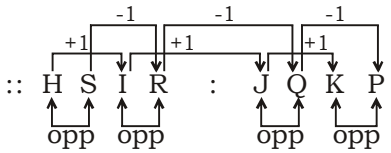
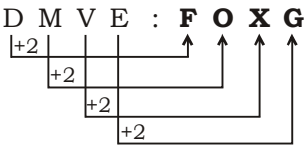
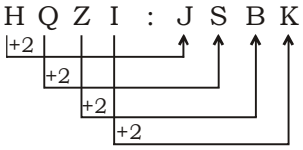
20. (A)





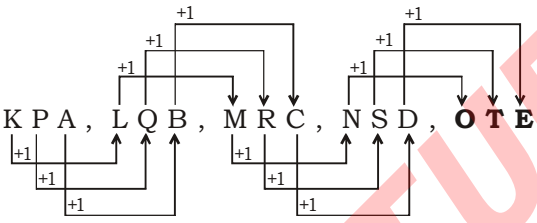
21. (B)





22. (B) 23. (B) 24. (C)

25. (B)



26. (A) $1 \times (2 + 1) = 3$
$7 \times (14 + 1) = 105$
$9 \times (12 + 1) = 117$

27. (B) 28. (A)

29. (B) $4 \times 4 = 16 - \underline{10} = 6$
$6 \times 6 = 36 - \underline{10} = 26$
$7 \times 7 = 49 - \underline{10} = 39$
$5 \times 5 = 25 - \underline{10} = \underline{15}$

30. (C) **Change '–' signs into '×'**
$\Rightarrow 4 \times 4 - 4 = 16 - 4 = 12$
$\Rightarrow 6 \times 6 - 6 = 36 - 6 = 30$
$\Rightarrow 2 \times 2 - 2 = 4 - 2 = 2$
Similarly,
$\Rightarrow 8 \times 8 - 8 = 64 - 8 = \mathbf{56}$

31. (C) $43 - 16 = (27)$
$48 - 36 = (12)$
Similarly, $56 - 29 = (\mathbf{27})$

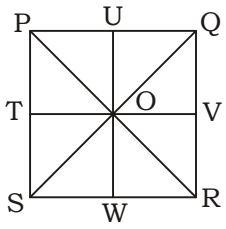
32. (C) After changing the signs according to the question, the new equation will be
$7 + 10 \div 5 \times 6 - 4$
$= 7 + 2 \times 6 - 4$
$= 4 + 12 - 4$
$= 19 - 4$
$= 15$

33. (D) DECOY 34. (C) TE**A**

35. (D) Only B is in all the three shapes.

36. (A)

37. (B)



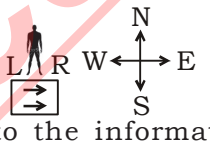
There are 16 triangles in the given figure. The triangles are SRP, RQS, QPR, PSQ, ROS, QOR, POQ, SOP, ROW, VOR, QOV, UOQ, POU, TOP, SOT, WOS.

38. (C)

39. (B) Both are multiple of 4 & 8.

40. (C)

41. (C)



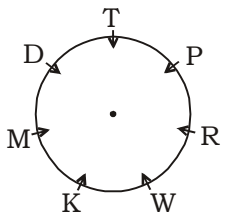
According to the information in the question part, the situation is as shown above. Now it is clear that the person is facing North.

42. (B) $C \longrightarrow A_{(+)} \longrightarrow B$

Here, the question is: – How is B related to C?
So, it is important to know to gender of B.

43-45. **Step–I.** According to statments
(i) P ____ D
(ii) K ____ ____ P
(iii) W ____ ____ T
(iv) WD or DW (×)
(v) M ____ ____ R

Step II. Now plot the combinations



43. (C) 44. (D) 45. (A)

46. (D) I. Q
P

II. L
Q

III. P
M
N or O

I, II & III
L
Q
P
M
N or O

47. (B) Reflection time : 12 – 6 = 6 O'clock

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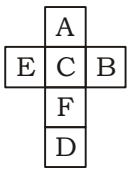
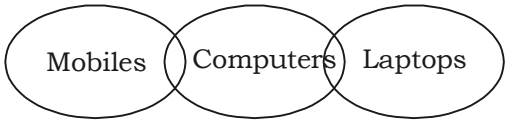
48. (A)

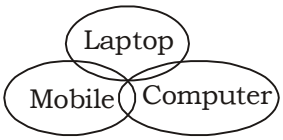


According to the above diagram.
A is on the surface opposite to F.
C is on the surface opposite to D.
E is on the surface opposite to B.

49. (C)

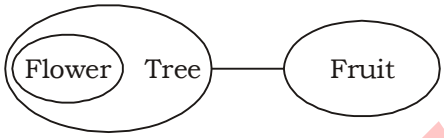


or



Conclusion: I. – ⌐ or
II. – ⌐

50. (D)



Conclusion: I. ✓
II. ✓

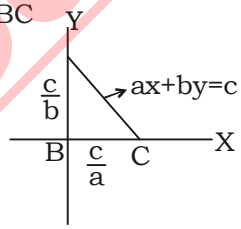
51. (C) ax + by = c

dividing by c both the sides: $\frac{x}{\frac{c}{a}} + \frac{y}{\frac{c}{b}} = 1$

Area of the triangle ABC

$\Delta = \frac{1}{2} \times \frac{c}{b} \times \frac{c}{a}$

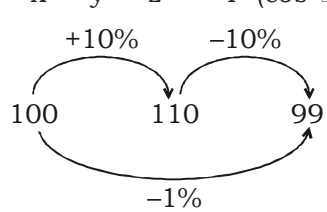
$\Delta \Rightarrow \frac{c^2}{2ab}$



52. (A) $x = r\cos^{6\overline{)39}} \cos \square$
$y = r\cos^{6\overline{)39}} \sin \square$
$z = r\sin^{6\overline{)39}}$

$\Rightarrow x^2 + y^2 + z^2 = r^2(\cos^{2\,6\overline{)39}} \times \cos^2\square + \cos^{2\,6\overline{)39}} \sin^2\square + \sin^{2\,6\overline{)39}})$
$= r^2(\cos^{2\,6\overline{)39}} (\cos^2\square + \sin^2\square) + \sin^{2\,6\overline{)39}})$
$= r^2(\cos^{2\,6\overline{)39}} \cdot 1 + \sin^{2\,6\overline{)39}})$
$x^2 + y^2 + z^2 = r^2 (\cos^2\square + \sin^2\square = 1)$

53. (A)



54. (A) Total cost price = 80 × 13.50 + 120 × 16
= ₹3000
Total weight = 80 + 120 = 200 kg

Sale price = $3000 \times \frac{120}{100}$ = ₹3600

per kg Sale price = $\frac{3600}{200}$ = ₹18

55. (A) LCM (11, 9) = 99
Let he bought 99 candy at ₹10–11 & 99 at ₹10 – 9 → Total cost price = 90+110 = 200
S.P of 198 candy = 198×1=198

$\Rightarrow \text{Loss} = \frac{2}{200} \times 100 = 1\%$

56. (B) Series 1 + 3 + 5 + ... 99
Can be written as
⇒ (1+2+3+4 ..... 99) – (2+4+6 ..... 98)

$\Rightarrow \frac{99 \times 100}{2} - \frac{2 \times 49 \times 50}{2}$

⇒ 99 × 50 – 49 × 50
⇒ 50(99 – 49) = 50 × 50 = 2500

57. (B) $999\frac{995}{999} \times 999$

$= \frac{(999)^2 + 995}{999} \times 999$

= 998001 + 995 = 998996

58. (C) $\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)\left(1-\frac{1}{5}\right)\ldots\left(1-\frac{1}{99}\right)\left(1-\frac{1}{100}\right)$

$\Rightarrow \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} \ldots\ldots \frac{98}{99} \times \frac{99}{100}$

$= \frac{2}{100} = \frac{1}{50}$

59. (D) $\tan^{6\overline{)39}} . \cos 60° = \frac{\sqrt{3}}{2}$

$\tan^{6\overline{)39}} = \sqrt{3}$ $\left(\cos 60° = \frac{1}{2}\right)$

$^{6\overline{)39}} = 60°$

60. (D) $\frac{8(3.75)^3 + 1}{(7.5)^2 - 6.5}$

$\Rightarrow \frac{2^3(3.75)^3 + 1}{(7.5)^2 - 6.5} = \frac{(7.5)^3 + 1}{(7.5)^2 - 6.5}$

$\Rightarrow \frac{((7.5)+(1))((7.5)^2 + (1)^2 - 7.5 \times 1)}{((7.5)^2 - 6.5)}$

= 7.5 + 1 = 8.5

61. (A) P = 999

$\sqrt[3]{999((999)^2 + 3 \times 999 + 3) + 1}$

⇒ a = 999 b = 1

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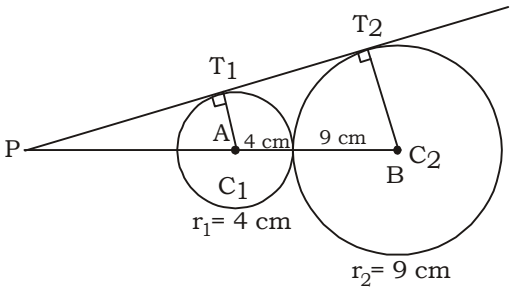
$\Rightarrow \sqrt[3]{(999+1)^3} = 1000$

$((a + b)^3 = a^3 + b^3 + 3ab\ (a + b))$

62. (C)



Radius of the circle A = 4 cm

$d = C_1 + C_2 = 4 + 9 = 13$ cm

$T_1T_2 = \sqrt{d^2 - (r_1 - r_2)^2} = \sqrt{(13)^2 - (5)^2}$

$T_1T_2 \Rightarrow \sqrt{144} = 12$ cm

63. (A) $x = 1 + \sqrt{3} + \sqrt{2}$ then $\left(x + \frac{1}{x-1}\right)$

$$\Rightarrow x + \frac{1}{x-1} = (1 + \sqrt{2} + \sqrt{3}) + \frac{1}{\sqrt{2} + \sqrt{3}}$$

$$\Rightarrow (1 + \sqrt{2} + \sqrt{3}) + \frac{\sqrt{3} - \sqrt{2}}{(\sqrt{2} + \sqrt{3})(\sqrt{3} - \sqrt{2})}$$

$$\Rightarrow \frac{1 + \sqrt{2} + \sqrt{3} - \sqrt{2} + \sqrt{3}}{+1}$$

$$x + \frac{1}{x-1} \Rightarrow 1 + 2\sqrt{3}$$

64. (C) LCM (9, 10, 15) = 90

Given Number = 1936

$\Rightarrow 90 \times 21 = 1890$ is divisible by 90.

but leaves remainder 7 $\rightarrow$ 50 = 1897

$\Rightarrow 1936 - 1897 = 39$

65. (B) Let the fraction is = $\frac{x}{y}$

According to the question

$$\Rightarrow \frac{x}{y} : \frac{3}{5} = \frac{x}{y} \times \frac{3}{5} + \frac{32}{75}$$

$$\Rightarrow \frac{5x}{3y} - \frac{3x}{5y} = \frac{32}{75}$$

$$\Rightarrow \frac{25x - 9x}{15y} = \frac{32}{75} \Rightarrow \frac{16x}{15y} = \frac{32}{75}$$

$$\Rightarrow \frac{x}{y} = \frac{2}{5}$$

Correct Answer = $\frac{2}{5} \times \frac{3}{5} = \frac{6}{25}$

66. (C) LCM (3, 4) = 12

So in 12 minutes

Total water by boy = 4 × 4 = 16

by girl = 3 × 3 = 9

25 $\ell \longrightarrow$ 12 min.

so 100 $\ell \longrightarrow$ 48 min.

67. (C) According to the question:

$M_1D_1W_2 = M_2D_2W_1$

$$\Rightarrow 28 \times 7 \times \frac{1}{8} = M_2 \times 7 \times \frac{7}{8}$$

$M_2 = 4$

68. (A) A can finish work if working

1 hour/day = 6 × 7 = 42 days

$\rightarrow$ B can ..... = 8 × 7 = 56 days

so both can finish working 8 hours/day

$$= \frac{1}{\frac{8}{42} + \frac{8}{56}} = \frac{1}{\frac{4}{21} + \frac{1}{7}}$$

$$\Rightarrow \frac{21}{4+3} = \frac{21}{7} = 3 \text{ day}$$

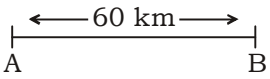
69. (D) Speed of the boat

$= \frac{1}{2}$ (Speed of downstream + Speed of upstream)

$= \frac{1}{2}(15 + 9) = \frac{24}{2}$

= 12 kms/hr

70. (B)



Let speed of A = x km/hr and B = y km/hr

$\Rightarrow x \times 6 + y \times 6 = 60$ ...(*i*)

$\Rightarrow \frac{2}{3}x \times 5 + 2y \times 5 = 60$ ...(*ii*)

after solving (*i*) and (*ii*)

$\Rightarrow \frac{10x}{3} + 10\ (10 - x) = 60$ x = 6 km/hr

71. (D) Speed of the first train = $\frac{150}{15}$ = 10 m/s

$= 10 \times \frac{18}{5} = 36$ km/hr

Let the speed of the second train = y km/hr

According to the question = distance travelled to cross second train = 150 +

150 = 300 m = $\frac{3}{10}$ km

$$\Rightarrow \frac{3/10}{36 + y} = \frac{12}{3600} \Rightarrow 1080 = 432 + 12y$$

$$y = \frac{648}{12} = 54 \text{ kms/hr}$$

72. (D) Time taken by A = $\frac{12}{4}$ = 3 hr

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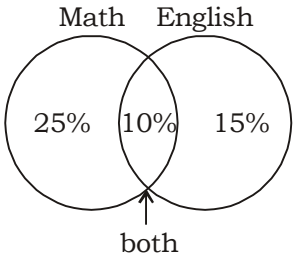
$$B = \frac{12}{3} = 4 \text{ hr}$$

$$C = \frac{12}{3/2} = 8 \text{ hr}$$

LCM (3, 4, 8) = 24 hrs
So, they will meet after 24 hrs.

73. (A)



Total fail = 25 + 10 + 15 = 50%
Total pass = 100 – 50 = 50%

74. (D) $A : B = \frac{75}{100} : \frac{2}{3} = \frac{3}{4} : \frac{2}{3} = 9 : 8$

$$B : C = 0.6 : \frac{75}{100} = \frac{6}{10} : \frac{75}{100}$$

$$= \frac{6}{10} : \frac{3}{4} = \frac{3}{5} : \frac{3}{4} = 12 : 15$$

A : B : C = 54 : 48 : 60 = 9 : 8 : 10

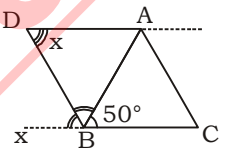
75. (B) Let the initial Area = xy
Final after reducing 40%

$$\Rightarrow x \times \frac{60}{100} \times y \times \frac{60}{100} = xy\frac{36}{100}$$

$$\text{Reduces} = xy - xy\frac{36}{100} = 64\frac{xy}{100} = 64\%$$

76. (A) BC is a line
So $\angle ABD$

$= \angle DBX = \frac{180 - 50}{2} = 65°$



So $\angle ADB$
= 65° (alternate angle)

77. (A) Let the time = t
SI (Simple Interest) = 81 – 72 = ₹ 9

$$9 = \frac{72 \times 25 \times T}{4 \times 100}$$

$$T = \frac{9 \times 4 \times 4}{72} = 2 \text{ years}$$

78. (C) According to the question

$$2500 = 2304\left(1 + \frac{r}{100}\right)^2$$

$$\frac{2500}{2304} = \left(1 + \frac{r}{100}\right)^2 \Rightarrow \left(1 + \frac{196}{2304}\right) = \left(1 + \frac{r}{100}\right)^2$$

$$\Rightarrow \left(1 + \frac{25/6}{100}\right)^2 = \left(1 + \frac{r}{100}\right) \Rightarrow r = \frac{25}{6} = 4\frac{1}{6}\%$$

79. (C) Let both part is *x* and (1500 – x)
According to the question:

$$\frac{x \times 10 \times 5}{100} = \frac{(1500 - x) \times 12.5 \times 4}{100}$$

x = 1500 – x
2x = 1500
x = ₹ 750
& 1500 – x = ₹ 750

80. (B) According to the formula =

$$D = P\left(\frac{R}{100}\right)^2$$

$$1 = P\left(\frac{4}{100}\right)^2$$

$P = (25)^2$ = ₹ 625

81. (B) Let the cost price = x
Now according to the question

$$x + x \times \frac{x}{100} = 144$$

$\Rightarrow 100x + x^2 = 14400$
$\Rightarrow x^2 + 100x - 14400 = 0$
$\Rightarrow (x - 80)(x + 18) = 0$
x = 80

82. (A) Let the payment is = 100
Now according to the question

$$100\ \frac{120}{100} \times \frac{80}{100} = 96$$

$\Rightarrow$ Reduction = 100 – 96 = 4% (less)

83. (*) Reduction price per article

$$= \frac{100 \times 33\frac{1}{3}}{3} = \frac{100 \times 100}{9}$$

$$\text{Initial price} = \frac{100 \times 100 \times 3}{9 \times 200} = \frac{50}{3} \text{p}$$

Per article

$$\Rightarrow \frac{50}{3}$$

□ In 50/3 paise article bought = 1

□ In 100p (₹ 1) $\rightarrow \frac{1 \times 3}{50} \times 100$ = 6 Articles are bought.

84. (D) A : B = 3 : 4
B : C = 5 : 7
C : D = 8 : 9

$$A : D = \frac{A}{B} \times \frac{B}{C} \times \frac{C}{D} = \frac{3}{4} \times \frac{5}{7} \times \frac{8}{9} = 10 : 21$$

85. (B) When divided by 893 leaves
Remainder = 193

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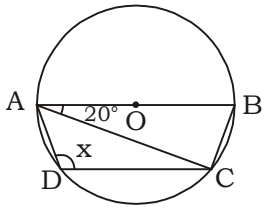
When divided by 47 then

$= \frac{193}{47} = 4$, Remainder = 5

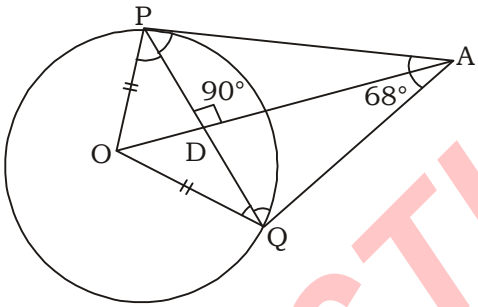
86. (B) Given x * y = 3x + 2y
then 2 * 3 = 3 × 2 + 2 × 3 =12
3 * 4 = 3 × 3 + 2 × 4 = 17
2 * 3 + 3 * 4 = 12 + 17 = 29

87. (B) AB is a diameter



$\angle ACB = 90°$ (by semi circle angle property)
So in triangle ABC
$= 180 - (20° + 90°) = 70°$
ABCD is a cyclic quadrilateral
So, $\angle ADC + \angle ABC = 180$
$\angle ADC = 180° - 70° = 110°$

88. (A) $\angle PAQ = 68°$
& $\angle PAO = 34°$



draw a line PQ cutting AO at D & making angle $\angle PDA = 90°$
$\therefore$ In $\triangle PDA \Rightarrow \angle APD = \angle APQ = 180 - (90 + 34)$ $\angle APQ = 180° - 124° = 56°$

89. (D) $(0.98)^3 + (0.02)^3 + 3 \times 0.98 \times 0.02 - 1$
$\Rightarrow (0.98+0.02)^3 - 1$
$\Rightarrow 1 - 1 = 0$

90. (B) Let the measures
Length = x
breath = y
height (Deepness) = z
According to the question:-

$z = \frac{x}{3}$ .....(1)

$y = (x - \frac{x}{3}) \times \frac{1}{3} \times \frac{1}{2} \Rightarrow \frac{x}{9}$

Volume $= x \times \frac{x}{3} \times \frac{x}{9} = 216$

$\Rightarrow x^3 = 216 \times 27$
$= 6^3 \times 3^3$
x = 18 decimeter

91. (B) According to the question :-

$\frac{1}{2} \times P \times 12 = 12 \times 12$
P = 24 cm

92. (*) Radius of the Cylinder = $\frac{16}{2}$ = 8 cm.
height = 2 cm.
volume = $2\pi r^2 h$
$= 2\pi (8)^2 \times 2 \Rightarrow 256\pi$
Now volume of the one sphere

$\Rightarrow \frac{256\pi}{12} = \frac{4}{3}\pi r^3$
$r^3 = 16$
$r = 2\sqrt{2}$
$d = 2r = 4\sqrt{2}$ cm

93. (A) In year 1990

94. (D) Total sale in 1993 = 439.7
In 1990 = 351.6

$\% = \frac{439.7}{351.6} \times 100 = 125\%$

95. (A)

96. (D)

97. (B) a * b = a + b + ab
3 * 4 - 2 * 3 = (3 + 4 + 3 × 4) - (2 + 3 + 2 × 3)
= 7 + 12 - 11
= 8

98. (A)

99. (B) Third proportion of $(x^2 - y^2)$ and $(x - y)$

$\Rightarrow \frac{(x-y)^2}{x^2-y^2} \Rightarrow \frac{(x-y)(x-y)}{(x+y)(x-y)} = \frac{x-y}{x+y}$

100. (D) tan A + sin A = p
tan A - sin A = q
LHS = $p^2 - q^2 = \tan^2 A + \sin^2 A + 2\tan A.\sin A - \tan^2 A - \sin^2 A + 2\tan A.\sin A = 4\tan A.\sin A$

RHS = $4\sqrt{pq} = 4\sqrt{\tan^2 A - \sin^2 A} = 4\sqrt{\frac{\sin^2 A}{\cos^2 A} - \sin^2 A}$

$\Rightarrow 4\sqrt{\frac{\sin^2 A(1-\cos^2 A)}{\cos^2 A}} = 4\sqrt{\frac{\sin^2 A.\sin^2 A}{\cos^2 A}}$

$= 4 \tan A.\sin A$

151. (A) add 'so' before weak.
152. (B) 'is' in place of 'are'.
153. (B) 'Standing' in place of 'stands'.
154. (A) 'is' in place of 'was'
155. (B) 'Cousins' and not 'Cousin sisters'
186. (D) an indirect reference indicating criticism.
187. (A) 'B' is also a correct option.

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