

SSC MOCK TEST - 345 (SOLUTION)

1. (A) As,

$$1425 \Rightarrow (1 + 4 + 2 + 5)^2 = 144$$

Similarly,

$$1768 \Rightarrow (1 + 7 + 6 + 8)^2 = 484$$

2. (B) The sound of Cow is Moo, while the sound of Snake is Hiss.

3. (D) Except Windows, others are web browsers.

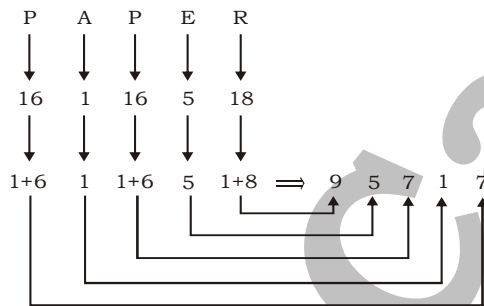
4. (C) (A) $17 \Rightarrow (1 + 7)^3 = 512$

$$(B) 19 \Rightarrow (1 + 9)^3 = 1000$$

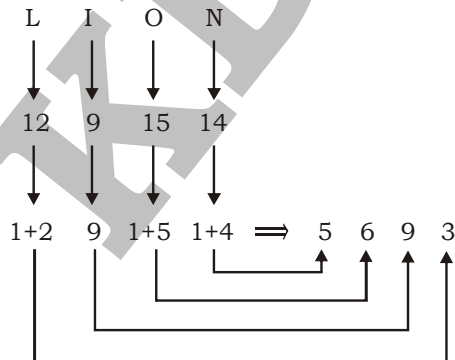
$$(C) 15 \Rightarrow (1 + 5)^3 = 216 \neq 343$$

$$(D) 21 \Rightarrow (2 + 1)^3 = 27$$

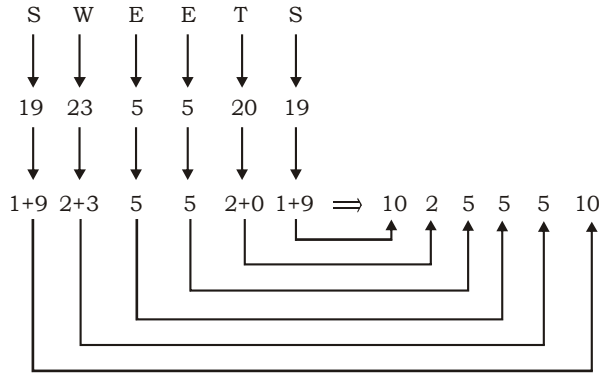
5. (B) As,



And,



Similarly,



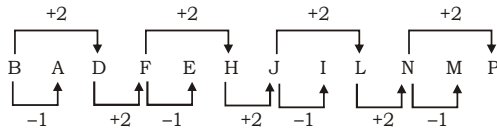
6. (C) $693 + 12^2 = 837$

$837 + 13^2 = 1006$

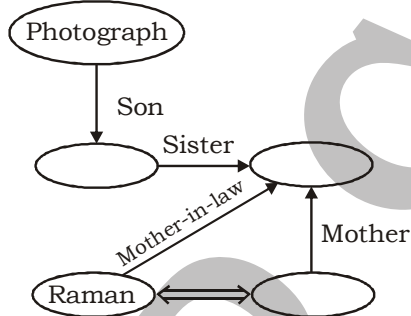
$1006 + 14^2 = 1202$

$1202 + 15^2 = 1427$

7. (D)



8. (B)



Hence, Raman's wife is the maternal grand-daughter of the man in the photograph.

9. (C) As, $240 - (25 - 16)^2 = 159$

Similarly, $320 - (26 - 18)^2 = 256$

10. (A) d m c r b / d m c r b / d m c r b

11. (A)

12. (C) **In the first row,**

$74 + 26 = 100 \Rightarrow \sqrt{100} = 10$

In the second row,

$92 + 52 = 144 \Rightarrow \sqrt{144} = 12$

In the third row,

$136 + 225 = 361 \Rightarrow \sqrt{361} = 19$

13. (B) $77 \div 7 \times 12 + 11 - 26 = 65$

After changing 7 and 11,

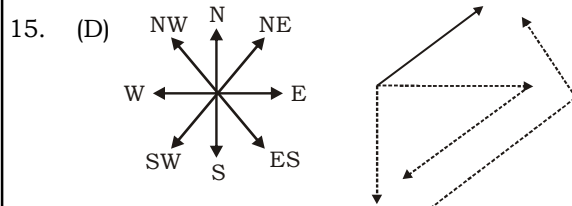
$$77 \div 11 \times 12 + 7 - 26 = 65$$

$$7 \times 12 + 7 - 26 = 65$$

$$91 - 26 = 65$$

$$65 = 65$$

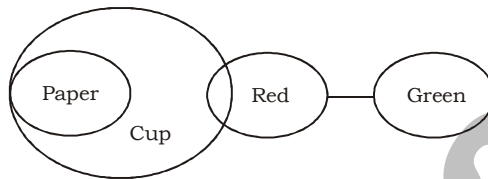
14. (C) Clock gain 3 min in 1 hour, i.e. it shows 63 minutes, when right figure should be 60 min. From 12 pm to 10:30 pm it shows 630 min but actually it should indicate 600 min i.e. 10:00 pm.



Thus, he is facing North East.

16. (C) 2. Dream → 1. Dreamlover → 4. Dreamset → 5. Dreamtime → 3. Dreamy

17. (A)



I. Doubt II. Doubt III. False

Hence, either conclusion I or II follows.

18. (A) 19. (D)

20. (C) As, $17 \times 2 + 1 = 35$

$$35 \times 3 + 2 = 107$$

$$\text{Similarly, } 22 \times 2 + 1 = 45$$

$$45 \times 3 + 2 = 137$$

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

26. (C) Agriculture was the main occupation of the Indus Valley people. Crops such as wheat, barley, peas and bananas were raised. In the olden days, there was enough rain in that region and occasional floods brought a great deal of fertile soil to the area. People used to plough the land with wooden ploughshares drawn by men and oxen. From the existence of granaries it is concluded that there were surplus food-grains.

27. (A) Philippine Sea is the largest Sea in the world with reference to the surface area. The Philippine Sea is a marginal sea and a part of the North Pacific Ocean. The 10 largest seas by surface area are the Philippine Sea, the Coral Sea, the Arabian Sea, the South China Sea, the Weddell Sea, the Caribbean Sea, the Mediterranean Sea, the Tasman Sea, the Bering Sea and the Bay of Bengal.

28. (A) Article 222 empowers the President to transfer judges from one High Court to another. Clause (2) of this article goes on to provide that when a judge is transferred he shall be entitled to receive a compensatory allowance in addition to his salary. It is felt that there is no real justification for granting such an allowance and it is accordingly proposed to omit clause.

29. (C) Public-private partnership (PPP) is a funding model for a public infrastructure project such as a new telecommunications system, airport, and power plant. The public partner is represented by the government at a local, state and/or national level. The private partner can be a privately-owned business, public corporation or consortium of businesses with a specific area of expertise.
30. (B) Density of gold is 19.30 g/cm³. The density of ultra pure liquid mercury is 13.534 g/cm³ and the density of steel is 7.80 g/cm³.
31. (B) The chemical formula for sodium bicarbonate is NaHCO₃. The common name of this substance is baking soda, and its chemical name is sodium hydrogen carbonate. Sodium bicarbonate is a leavening agent that's commonly used in baking. Although inactive in its dry form, mixing it with an acid and liquid causes a chemical reaction that releases a gas.
33. (B) Volume-IV of selected speeches of President Ram Nath Kovind named 'Loktantra Ke Swar' and 'Republican Ethics' was released by Union Education Minister Dharmendra Pradhan and Information and Broadcasting Minister Anurag Singh Thakur.
35. (C) One can use the MAX function to find the highest number in a series of numbers.
36. (D) Some titles for traditional Islamic leaders include Caliph, Imam, Sheikh, Mufti, Mujtahid and Allamah. The titles of "Ayatollah" and "Grand Ayatollah" exist only in the Shiite sect of Islam. Islamic religious leaders come in a variety of types due to the absence of an organized hierarchical structure, such as a church in Christianity. The Imam is the most popular leadership position in Islam. It denotes one who leads worship and offers advice within a community in the Sunni sect. The Shias, on the other hand, believe that Imams are descendants of Muhammad. Caliph refers to the supreme religious and political figure in a caliphate, a sovereign state encompassing the entirety of the Muslim nation, called the "Ummah.
37. (D) Duncan Passage is a strait in the Indian Ocean. It separates Rutland Island (part of Great Andaman) to the north and Little Andaman to the south. West of Duncan Passage is the Bay of Bengal. East is the Andaman Sea.
38. (A) Decorum means maintaining proper behaviour. Interpellation means formal right of a Parliament to submit formal question to the government. Crossing the floor means to vote against the party lines. Yielding the floor means the speaker giving part of his or her speaking time to another speaker. While this practice is allowed in some legislative bodies, it is not allowed in deliberative assemblies, unless specifically authorized in the rules.
39. (D) John McCloy was the Bank's President at that time when World Bank loan was received by France.
40. (A) Cloudy nights are warmer than clear nights because, the cloud cover provides a shield which act as an insulator and store up the heat radiated by the earth and do not permit heat to escape.
41. (B) Tritium is a radioactive isotope of hydrogen. The name of this isotope is formed from the Greek word "tritros" meaning "third".
43. (C) Reserve Bank of India's Monetary Policy Committee (MPC) decided to hike the Policy Repo Rate by 50 basis points to 4.9 per cent in its June 2022 meeting.
44. (C) Gandhiji's greatest contribution to the social thought of this century is perhaps his insistence on decentralization of the means of production (economic power). It is in the nature of large-scale industries to centralize economic power in the hands of a few individuals. Under capitalism this power comes to be concentrated in the hands of individual capitalists and under socialism, it is arrogated by managers, technocrats and bureaucrats.
46. (B) Political scientists speculate that proportional representation leads logically to multi-party systems, since it allows new parties to build a niche in the legislature.
48. (C) The word 'atmosphere' comes from the Greek 'atomos' meaning vapour and 'sphaira' meaning sphere. It is the mixture of gases that surround the sphere of the gases extending to a height of about 200km. The major gases in the atmosphere are nitrogen, oxygen, argon and carbon dioxide. It also contains minor or trace amounts of other elements in compounds like nitrogen and sulphur, hydrocarbons and particulates.

51. (C) $\frac{x^2+3x+1}{x^2+7x+1} = \frac{x\left(x+3+\frac{1}{x}\right)}{x\left(x+7+\frac{1}{x}\right)} = \frac{x+\frac{1}{x}+3}{x+\frac{1}{x}+7} = \frac{1+3}{1+7} = \frac{1}{2}$

52. (B) $x = \sqrt{a^3 b \sqrt{a^3 b \dots \infty}}$

$$x = \sqrt{a^3 b x}$$

$$x^2 = a^3 b x$$

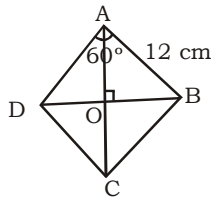
$$\left(\frac{x^2}{a}\right)^3 = b x$$

$$\frac{x^6}{a^3} = b x$$

$$x^5 = a^3 b$$

$$x = \sqrt[5]{a^3 b}$$

53. (A)



In $\triangle AOB$,

$$\angle OAB = 30^\circ$$

$$\sin \angle OAB = \frac{OB}{12}$$

$$12 \times \sin 30^\circ = OB$$

$$OB = 12 \times \frac{1}{2} = 6 \text{ cm}$$

$$\therefore BD = 2 \times 6 = 12 \text{ cm}$$

54. (D) Let the two angles of the triangle be $4x$ and $5x$.

Let the third angle be y .

ATQ,

$$4x + 5x = y$$

$$9x = y \dots \dots (i)$$

Also,

$$4x + 5x + y = 180^\circ$$

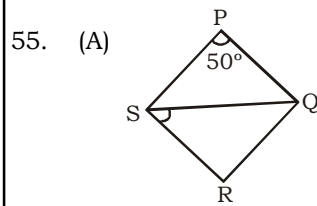
$$9x + y = 180^\circ$$

$$9x + 9x = 180^\circ$$

$$x = 10^\circ$$

The angles are $4 \times 10^\circ$, $5 \times 10^\circ$, $9 \times 10^\circ = 40^\circ$, 50° , 90°

\therefore The smallest angle = 40°



As $PQ \parallel SR$

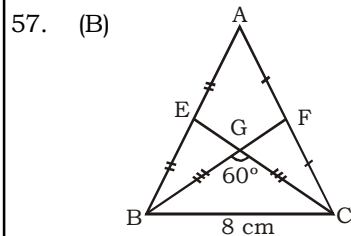
$$\angle SPQ + \angle PSR = 180^\circ$$

$$50^\circ + \angle PSR = 180^\circ$$

$$\angle PSR = 180^\circ - 50^\circ = 130^\circ$$

$$\therefore \angle RSQ = \frac{130^\circ}{2} = 65^\circ$$

56. (A) $\tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \dots \tan 88^\circ \tan 89^\circ$
 $= \tan (90^\circ - 89^\circ) \tan (90^\circ - 88^\circ) \tan (90^\circ - 87^\circ) \dots \dots \tan 45^\circ \dots \dots \tan 88^\circ \tan 89^\circ$
 $= \cot 89^\circ \cot 88^\circ \cot 87^\circ \dots \dots \tan 45^\circ \dots \dots \tan 88^\circ \tan 89^\circ$
 $= 1 \times 1 \times \tan 45^\circ \quad [\because \tan \theta \cot \theta = 1]$
 $= 1$



In $\triangle BGC$,

$$\angle BGC + \angle GBC + \angle BCG = 180^\circ$$

$$60^\circ + 2 \angle GBC = 180^\circ \quad (\because BG = GC)$$

$$\angle GBC = \frac{180^\circ - 60^\circ}{2} = 60^\circ$$

$\triangle BGC$ is equilateral

$$\text{ar} (\triangle BGC) = \frac{\sqrt{3}}{4} \times 8^2 = 16\sqrt{3} \text{ cm}^2$$

Now,

$$\text{ar} (\triangle ABC) = 3 \times \text{ar} (\triangle BGC) = 3 \times 16\sqrt{3} = 48\sqrt{3} \text{ cm}^2$$

58. (A) $\frac{\text{Demand of Company B}}{\text{Production of Company F}} \times 100 = \frac{3150}{4500} \times 100 = 70\%$

59. (D) $\frac{\text{Production of company A}}{\text{Demand of Company C}} \times 100 = \frac{1450}{2600} \times 100 = 55\% \text{ (approx)}$

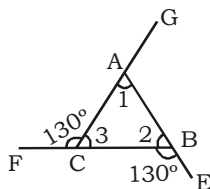
60. (B) Average Demand of all Companies = $\frac{2100 + 3150 + 2600 + 5000 + 2800 + 3300}{6}$
 = 3158 (approx.)

Average Production of all Companies = $\frac{1450 + 3660 + 3100 + 4200 + 3700 + 4500}{6} = 3435$

∴ Difference between average production and average demand = $3435 - 3158 = 277$
 = 275 (approx.)

61. (B) $\frac{\text{Companies having more demand than production}}{\text{Companies having more production than demand}} = \frac{2}{4} = \frac{1}{2}$

62. (A)



$\angle GAB = \angle 2 + \angle 3 \dots (i)$

$\angle CBE = \angle 1 + \angle 3 \dots (ii)$

$\angle ACF = \angle 1 + \angle 2 \dots (iii)$

From equation (i), (ii) and (iii)

$\angle GAB + \angle CBE + \angle ACF = \angle 2 + \angle 3 + \angle 1 + \angle 3 + \angle 1 + \angle 2$

$\angle GAB + 130^\circ + 130^\circ = 2(\angle 1 + \angle 2 + \angle 3)$

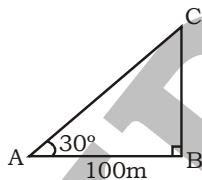
$\angle GAB = 2 \times 180^\circ - 260^\circ = 360^\circ - 260^\circ = 100^\circ$

63. (D) $\frac{x}{y} = \frac{3}{4}$

$4x = 3y \dots (i)$

$\frac{2x + 3y}{3y - 2x} = \frac{2x + 4x}{4x - 2x} = \frac{6x}{2x} = \frac{3}{1} = 3 : 1$

64. (C)



$\tan 30^\circ = \frac{BC}{AB} = \frac{BC}{100}$

$\frac{1}{\sqrt{3}} = \frac{BC}{100}$

$BC = \frac{100}{\sqrt{3}} \text{ m}$

65. (A) CP of 100 books = S.P of 60 books

∴ Gain % = $\frac{100 - 60}{60} \times 100 = 66\frac{2}{3} \%$

66. (A) $\tan^2\theta + \frac{1}{\tan^2\theta} = 2$

$$\tan^4\theta + 1 = 2 \tan^2\theta$$

$$\tan^4\theta + 1 - 2 \tan^2\theta = 0$$

$$(\tan^2\theta - 1)^2 = 0$$

$$\tan^2\theta = 1$$

$$\tan\theta = 1 \quad [\tan\theta = -1 \text{ is ignored as } \theta \text{ is acute}]$$

$$\theta = 45^\circ$$

67. (A) Let income be ₹ 100

Expenditure = ₹ 75

Savings = ₹ 25

New income after 20% increment = ₹ 120

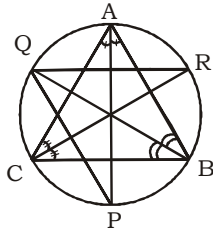
New expenditure after 10% increment = $75 + 7.5 = ₹ 82.5$

New savings = $120 - 82.5 = ₹ 37.5$

Increase in savings = $37.5 - 25 = ₹ 12.5$

$$\therefore \% \text{ increase} = \frac{12.5}{25} \times 100 = 50\%$$

68. (D)



$$\angle RQP = \angle PQB + \angle RQB \dots\dots (i)$$

$$\angle PQB = \angle PAB \text{ [Angle subtended in the same arc equal]}$$

$$\angle PQB = \frac{1}{2} \angle BAC \dots (ii)$$

Similarly,

$$\angle RQB = \frac{1}{2} \angle BCA \dots (iii)$$

From (i), (ii) and (iii)

$$\angle RQP = \frac{1}{2} (\angle BAC + \angle BCA)$$

$$= \frac{1}{2} (180^\circ - \angle ABC) = 90^\circ - \frac{\angle B}{2}$$

69. (B)

70. (B) Relative speed of Raj and Prem while walking in opposite direction = $3 + 2 = 5$ km/hours

Distance between Raj and Prem = $5 \times 2 = 10$ km

71. (B) $\frac{7+11+15+x+14+21+25}{7} = 15$

$$93 + x = 105$$

$$x = 12$$

72. (A) Area $A = \pi r^2$ _____(i)

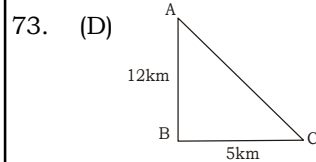
$$C = 2 \pi r$$
 _____(ii)

Equation (i) \div (ii),

$$\frac{A}{C} = \frac{\pi r^2}{2\pi r}$$

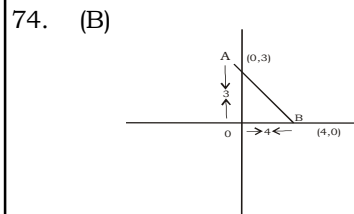
$$\frac{A}{C} = \frac{r}{2}$$

$$2A = Cr$$



$$AC = \sqrt{12^2 + 5^2} = \sqrt{144 + 25}$$

$$= \sqrt{169} = 13 \text{ km}$$



$$AB = \sqrt{3^2 + 4^2} = \sqrt{9 + 16} = \sqrt{25} = 5 \text{ units}$$

75. (C) $\frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{3-\sqrt{8}}$

$$= \frac{1}{\sqrt{7}-\sqrt{6}} \times \frac{\sqrt{7}+\sqrt{6}}{\sqrt{7}+\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} \times \frac{\sqrt{6}+\sqrt{5}}{\sqrt{6}+\sqrt{5}} + \frac{1}{\sqrt{5}-2} \times \frac{\sqrt{5}+2}{\sqrt{5}+2} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{\sqrt{8}+\sqrt{7}}{\sqrt{8}+\sqrt{7}} + \frac{1}{3-\sqrt{8}} \times \frac{3+\sqrt{8}}{3+\sqrt{8}}$$

$$= \frac{\sqrt{7}+\sqrt{6}}{(\sqrt{7})^2 - (\sqrt{6})^2} - \frac{\sqrt{6}+\sqrt{5}}{(\sqrt{6})^2 - (\sqrt{5})^2} + \frac{\sqrt{5}+2}{(\sqrt{5})^2 - 2^2} - \frac{\sqrt{8}+\sqrt{7}}{(\sqrt{8})^2 - (\sqrt{7})^2} + \frac{3+\sqrt{8}}{3^2 - (\sqrt{8})^2}$$

$$= \sqrt{7} + \sqrt{6} - \sqrt{6} - \sqrt{5} + \sqrt{5} + 2 - \sqrt{8} - \sqrt{7} + 3 + \sqrt{8} = 5$$

MEANINGS IN ALPHABETICAL ORDER

Barbarians	(in ancient times) a member of a community or tribe not belonging to one of the great civilizations	असभ्य
Detrimental	tending to cause harm	हानिकारक
Hierarchy	a system or organization in which people or groups are ranked one above the other according to status or authority	अनुक्रम
Illegible	not clear enough to be read	अपठनीय
Imminent	about to happen	संभावित
Invincible	too powerful to be defeated or overcome	अपराजेय
Jabber	talk rapidly and excitedly but with little sense	बड़बड़ करना
Palatable	(of food or drink) pleasant to taste	स्वादिरुच
Plausible	(of an argument or statement) seeming reasonable or probable	मुमकिन
Probable	likely to be the case or to happen	संभावित
Statesmanship	skill in managing public affairs	राजनीतिज्ञता
Symptom	a physical or mental feature which is regarded as indicating a condition of disease	लक्षण
Take away	to deduct; subtract	कम करना, घटाना
Take off	To rise into the air or begin flight	उड़ जाना
Take over	To assume control, management, or responsibility	अधिकार संभाल लेना
Take up	To raise; lift	उठाना
Vagabonds	a person who wanders from place to place without a home or job	घुमंतू, खानाबदोश
Yearn	have an intense feeling of longing for something	तड़पना

SSC MOCK TEST - 345 (ANSWER KEY)

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