SSC MOCK TEST - 343 (SOLUTION)

1. (C) Clock shows Time, while Thermometer shows Temperature.

2. (B) As, $18 \times 2 + (1 + 8) = 45$
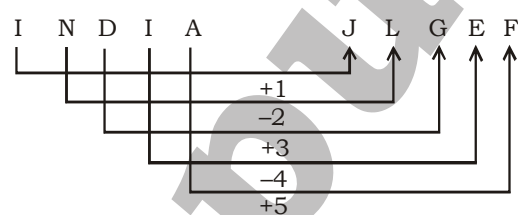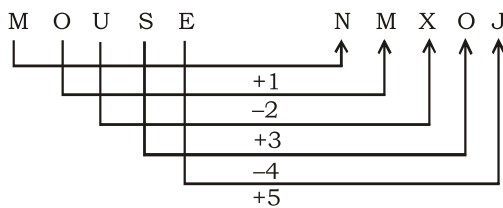
    Similarly, $38 \times 2 + (3 + 8) = 87$

3. (A) Except Listen, others require physical movement.

4. (B) Except LATEST, others have one vowel.

5. (D) As,   Similarly,

6. (C)

7. (B)

8. (A) Anil's new position is 16th from left, but it is the same as Sunil's earlier position which is 6th from the right.

    So, the row consists of $16 + 6 - 1 = 21$ students

    Now, Sunil's new position is Anil's earlier position i.e. 5th from the left

    Number of students to the right of Sunil = $(21 - 5) = 16$

    So, Sunil's new position is 17th from the right.

9. (D) As, $78 + (7 + 5) = 90$

    Similarly, $94 + (4 + 6) = 104$

10. (A) **n** d k **l** j/ n **d** k l **j**/ n **d** k l j

11. (B)

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

    $4^2 + 5^3 = 141$

    In the second column,

    $6^2 + 7^3 = 379$

    In the third column,

    $12^2 + 8^3 = 656$

13. (D) $72 \div 6 \times 5 + 4 - 12 = 84$
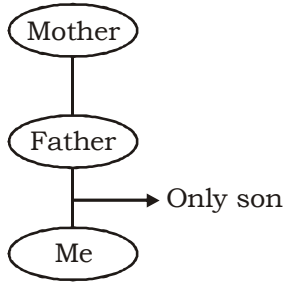
    After changing 6 and 4,

    $72 \div 4 \times 5 + 6 - 12 = 84$

    $18 \times 5 + 6 - 12 = 84$

    $96 - 12 = 84$

    $84 = 84$

14. (C)

```
   Mother
      |
   Father
      |———→ Only son
      |
     Me
```

Lady is the Grandmother of the boy.

15. (A) P has 12 pens.

P gives 4 pens to R, so he left with 8 pens.

Now, He gave Q twice as many pens as R had that is R had 3 pens initially.
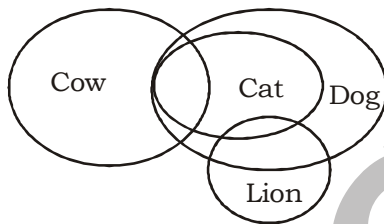
So it's twice become 6.

That means P gave 6 pensto Q.

Thus (8 – 6) = 2

So, he left with only 2 pens.

16. (C) 5. Paid → 4. Pair → 3. Part → 2. Pass → 1. Paste

17. (A)

```
    Cow   Cat  Dog
          Lion
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I. True   II. True   III. True

Hence, all the conclusions follow.

18. (A)   19. (B)

20. (B) As,

L   O   C   A   L

$12 \times 2 + 15 \times 3 + 3 \times 2 + 1 \times 3 + 12 \times 2$

$= 24 + 45 + 6 + 3 + 24 = 102$

And,

S   W   E   E   T

$19 \times 2 + 23 \times 2 + 5 \times 3 + 5 \times 3 + 20 \times 2$

$= 38 + 46 + 15 + 15 + 40 = 154$

Similarly,

C	H	A	R	G	E
↓	↑	↓	↓	↓	↓

$3×2 + 8×2 + 1×3 + 18×2 + 7×2 + 5×3$

$= 6 + 16 + 3 + 36 + 14 + 15 = 90$

21. (B) Additional days: 12, 2, 3, 2, 3, 3, 2, 3, 2, 3 in the year 1980 from March to December respectively.

Additional days from 1981 to 1985 = 5 + 1(1984 being leap year) = 6

Additional days in January 1986 = 17

Total additional days = 58, i.e., 8 weeks and 2 days

As, 19th March 1980 was Wednesday.

So, 17th January 1986 was Friday.

22. (B)   23. (D)   24. (C)   25. (D)

26. (C) The world famous one of the largest herbarium in India is situated at the Indian Botanical Garden, Kalkaska. This herbarium is the largest herbarium of east. It is famous for the 'Great Banyan tree.' The largest herbarium in the world, at the museum national d'histoire naturally is in Paris, France.

27. (B) The World Economic Forum (WEF), during its Davos meeting has announced that it is building a "Global Collaboration Village" as the virtual future of public-private cooperation.

28. (C) The Constituent Assembly met for the first time in New Delhi on 9 December, 1946 in the Constitution Hall which is now known as the Central Hall of Parliament House. On 29 August, 1947, the Constituent Assembly set up a Drafting Committee under the Chairmanship of Dr. B.R. Ambedkar to prepare a Draft Constitution for India.

29. (B) Consumer Price Index Number for Industrial Workers (CPI (IW)) is released by the Labour Bureau. Labour Bureau is responsible for the collation, collection and publication of statistics and related information on wages, earnings, productivity, absenteeism, labour turnover, industrial relations, working and living conditions and evaluation of working of various labour enactments etc.

30. (A) The World Day for Animals in Laboratories (also known as World Lab Animal Day (WLAD)) is observed every year on April 24 to mark the birthday of former National Anti-Vivisection Society (NAVS) president Hugh Dowding. Today the event is marked by demonstrations and protests by groups opposed to the use of animals in research. The day is not included on the official list of United Nations observances.

31. (D) The corona is the outermost layer of the Sun, starting at about 1300 miles (2100 km) above the solar surface (the photosphere). The temperature in the corona is 500,000 K (900,000 degrees F, 500,000 degrees C) or more, up to a few million K. The corona cannot be seen with the naked eye except during a total solar eclipse, or with the use of a coronagraph.

32. (B) Eight of the water-soluble vitamins are known as the vitamin B-complex group: thiamin (vitamin B1), riboflavin (vitamin B2), niacin (vitamin B3), vitamin B6 (pyridoxine), folate (folic acid), vitamin B12, biotin and pantothenic acid. The B vitamins are widely distributed in foods, and their influence is felt in many parts of the body. They function as coenzymes that help the body obtain energy from food. Vitamin (A), (D), (E) and (K) are fat soluble.

33. (C) Hydrogen Peroxide is a total chlorine free (TCF) bleaching agent. The chemical formula of this bleach is H_2O_2. Pure hydrogen peroxide is very light blue color but colorless in solution. It is the use of this bleaching agent increased significantly in the pulp and paper industry due to easy to use, lower production costs, improved paper quality, increased yield percentage and environmental friendly.

35. (C) Meenakshi Lekhi, Minister of State for Culture and External Affairs participated in the 7th BRICS Culture Ministers' Meeting.

36. (B) Gandhara School was based on GrecoRoman norms encapsulating foreign techniques and an alien spirit. It is also known as Graeco-Buddhist School of art. The foreign influence is evident from the sculptures of Buddha in which they bear resemblance to the Greek sculptures. Grey sandstone (Blue-grey Mica schist to be precise) is used in Gandhara School of Art.

38. (C) The Constitution of India provides Fundamental Rights under Chapter III. Article 21. Protection of Life and Personal Liberty: No person shall be deprived of his life or personal liberty except according to procedure established by law.

39. (C) The food manufactured in the leaves is translocated upwards, downwards and laterally to all parts of the plant through the phloem. The phloem also conducts some other substances such as amino acids. The conducting cells of the phloem are cylindrical cells called sieve tubes, which have sieve like partitions at both ends. These partitions are called sieve plates.

40. (C) The National Development Council (NDC) or the Rashtriya Vikas Parishad is the apex body for decision making and deliberations on development matters in India, presided over by the Prime Minister. It was set up on 6th August 1952 to strengthen and mobilize the effort and resources of the nation in support of the plan to promote common economic policies in all vital spheres. The Council comprises the Prime Minister, the Union Cabinet Ministers, and Chief Ministers of all States or their substitutes, representatives of the Union Territories and the members of the NITI Aayog.

42. (D) Net neutrality is the principle that Internet service providers and governments regulating the Internet should treat all data on the Internet the same, not discriminating or charging differently by user, content, website, platform, application, type of attached equipment, or mode of communication.

43. (C) The Central Armed Police Forces (CAPF) refers to uniform nomenclature of five security forces in India under the authority of Ministry of Home Affairs (MHA). They are the Border Security Force (BSF), Central Reserve Police Force (CRPF), Central Industrial Security Force (CISF), Indo-Tibetan Border Police (ITBP) and Sashastra Seema Bal (SSB). Recently, Rajiv Rai Bhatnagar, the 1983 batch of the Uttar Pradesh cadre IPS officer, has been appointed the new Director General of the CRPF.

44. (C) There was no official language as such during the period of Akbar the Great because there was no country called India.Then, it was called Mughal Sultanate. Coming to the language, Persian was used in the Court of Akbar for all the administrative purposes.

45. (B) The Param Vir Chakra (PVC) is India's highest military decoration awarded for the highest degree of valour or selfsacrifice in the presence of the enemy, similar to the British Victoria Cross, US Medal of Honour, Pakistani Nishan-eHaider, or French Legion of Honor or Russian Cross of St. George.

49. (D) The definition and meaning of general equilibrium in economics is a perfect state, when demand and supply are equal to each other, they are in balance - in perfect harmony. The term is also known as Walrasian general equilibrium. The general equilibrium analysis was developed by Leon Walras (1834-1910), a French mathematical economist and Georgist.

51. (D) $a^2 + b^2 + 64c^2 + 16c + 3 = 2(a + b)$

$a^2 - 2a + 1 + b^2 - 2b + 1 + 64c^2 + 16c + 1 = 0$

$(a - 1)^2 + (b - 1)^2 + (8c + 1)^2 = 0$
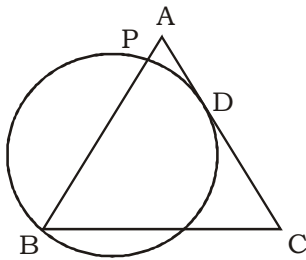
$a = 1, b = 1$ and $c = \dfrac{-1}{8}$

Now, $5a^7 + b^8 + 16c^2$

$= 5 \times 1^7 + 1^8 + 16 \times \left(\dfrac{-1}{8}\right)^2$

$$= 5 + 1 + 16 \times \frac{1}{64}$$

$$= 5 + 1 + \frac{1}{4} = 6\frac{1}{4}$$

52. (C)

D is mid point

AD = DC = x

AC = 2x and AB = 2x

AC is acting as tangent

$AD^2 = AP \times AB$

$x^2 = 3.5 \times 2x$

x = 7 cm

AB = 2x = 14 cm

53. (D) $\left(\dfrac{1}{62} \text{ of } 6\dfrac{1}{5} \div \dfrac{2}{5} \right) \times 1\dfrac{1}{9} \div \left(\dfrac{5}{6} \times 6\dfrac{2}{3} \text{ of } \dfrac{1}{4} \div \dfrac{1}{8} \right)$

$\left(\dfrac{1}{62} \times \dfrac{31}{5} \times \dfrac{5}{2} \right) \times \dfrac{10}{9} \div \left(\dfrac{5}{6} \times \dfrac{20}{3} \times \dfrac{1}{4} \times \dfrac{8}{1} \right)$

$= \dfrac{1}{4} \times \dfrac{10}{9} \div \left(\dfrac{100}{9} \right) = \dfrac{1}{4} \times \dfrac{10}{9} \times \dfrac{9}{100} = \dfrac{1}{40}$

54. (C) For number of zeroes, we have to find total pairs of 2s and 5s in the given expression

$= 2^7 \times 3^5 \times 5^8 \times 7^5 \times (2^3)^3 \times (2 \times 5)^5$

$= 2^7 \times 3^5 \times 5^8 \times 7^5 \times 2^9 \times 2^5 \times 5^5$

$= 2^{21} \times 3^5 \times 5^{13} \times 7^5$

So, No. of trailing zeroes = 13 as maximum pair of 2s and 5s are 13 in the given expression.

55. (A) Part of work that A can do in a day = $\dfrac{1}{20}$

Part of work that B can do in a day = $\dfrac{1}{16}$

With the help of C, they can finish in 8 days.

Part of work that A, B and C can do together = $\dfrac{1}{8}$

Hence, part of work that can do in a day = $\dfrac{1}{8} - \left(\dfrac{1}{20} + \dfrac{1}{16} \right)$

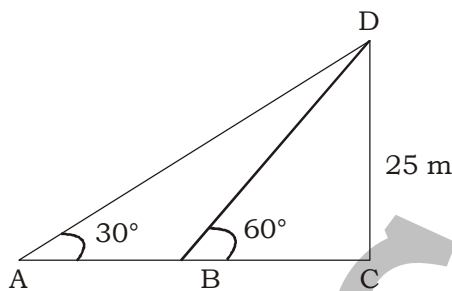$$= \frac{1}{8} - \frac{1}{20} - \frac{1}{16}$$

$$= \frac{10 - 4 - 5}{80} = \frac{1}{80}$$

Efficiency of ratio of work of A, B and C = $\frac{1}{20} : \frac{1}{16} : \frac{1}{80}$ = 4 : 5 : 1

Hence, Share of C = $\frac{1890}{10} \times 1$ = ₹ 189

56. (C) $(x^6 - 1) = (x^2 - 1)(x^4 + x^2 + 1)$
    $= (x - 1)(x + 1)(x^4 + x^2 + 1)$
    And, $(x^4 + 2x^3 - 2x - 1)$
    $= x^4 - x^3 + 3x^3 - 3x^2 + 3x^2 - 3x + x - 1$
    $= (x - 1)(x^3 + 3x^2 + 3x + 1)$
    $= (x - 1)(x + 1)^3$
    $= (x^2 - 1)(x + 1)^2$
    So, HCF = $(x - 1)(x + 1) = (x^2 - 1)$

57. (B)

In ΔACD,

$\tan 30° = \dfrac{CD}{AC}$

$\dfrac{1}{\sqrt{3}} = \dfrac{25}{AC}$

AC = $25\sqrt{3}$ m

In ΔBCD,

$\tan 60° = \dfrac{CD}{BC}$

$\sqrt{3} = \dfrac{25}{BC}$

BC = $\dfrac{25}{\sqrt{3}}$ m

$\therefore$ AB = $25\sqrt{3} - \dfrac{25}{\sqrt{3}} = \dfrac{50}{\sqrt{3}}$ m

58. (B) Capacity of tank = 60 litres

Tap A fall the tank in 1 hour = $\dfrac{60}{15}$ = 4 litres

Tap B fill the tank in 1 hour = $\dfrac{60}{20}$ = 3 litres

In 8 hours, tap A and B fell the tank = (4 + 3) × 8 = 56 litres

Now, tap A's turn and fell the remaining 4 litres in 1 hour.

∴ Total time = 8 + 1 = 9 hours

59. (B) $\tan^2 (90 - \theta)] \csc^2 (90 - \theta) \cot^2 (90 - \theta)$

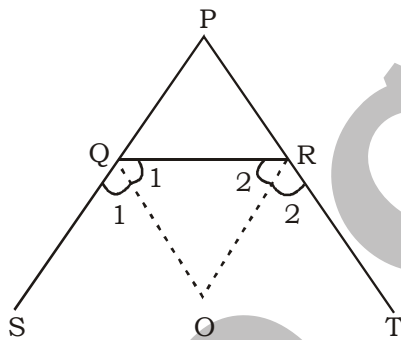$= (\cot^2 \theta - \cos^2 \theta) . \sec^2 \theta . \tan^2 \theta$

$= \left(\dfrac{\cos^2 \theta}{\sin^2 \theta} - \cos^2 \theta\right)\left(\dfrac{1}{\cos^2 \theta} . \dfrac{\sin^2 \theta}{\cos^2 \theta}\right)$

$= \dfrac{\cos^2 \theta - \cos^2 \theta . \sin^2 \theta}{\sin^2 \theta} . \dfrac{\sin^2 \theta}{\cos^4 \theta}$

$= \dfrac{\left(\cos^2 \theta \left(1 - \sin^2 \theta\right)\right)}{\sin^2 \theta} . \dfrac{\sin^2 \theta}{\cos^4 \theta}$

$= \dfrac{\cos^4 \theta}{\sin^2 \theta} . \dfrac{\sin^2 \theta}{\cos^4 \theta} = 1$

60. (A)

$\angle 1 + \angle 2 + \angle QOR = 180°$

$\angle QOR = 180° - (\angle 1 + \angle 2)$

Also,

$2\angle 1 + \angle Q = 180°$

$\angle 1 = \dfrac{(180° - \angle Q)}{2} = 90 - \dfrac{\angle Q}{2}$

Similarly,

$\angle 2 = \dfrac{(180° - \angle R)}{2} = 90 - \dfrac{\angle R}{2}$

$\angle 1 + \angle 2 = 180° - \dfrac{1}{2}(\angle Q + \angle R)$

$$\angle Q + \angle R + \angle P = 180°$$

$$\angle Q + \angle R = 180° - \angle P$$

$$\angle 1 + \angle 2 = 180° - \frac{1}{2}(180° - \angle P)$$

$$= 180° - 90° + \frac{\angle P}{2}$$

$$= 90° + \frac{\angle P}{2} \quad .....(i)$$

Using (i) and (ii), we get

$$\therefore \quad \angle QOR = 90° - \frac{\angle P}{2}$$

61. (C) $x^2 + \dfrac{1}{x^2} = 3^2 + 2 = 9 + 2 = 11$

Now, $\dfrac{\left(2x^4 + 3x^3 + 13x + 2\right)}{\left(3x^4 + 3\right)}$

Dividing numerator and denominator by x^2, we get

$$= \frac{2\left(x^2 + \dfrac{1}{x^2}\right) + 3\left(x - \dfrac{1}{x}\right) + 13}{3\left(x^2 + \dfrac{1}{x^2}\right)}$$

$$= \frac{(2 \times 11 + 3 \times 3 + 13)}{(3 \times 11)} = \frac{44}{33} = \frac{4}{3}$$

62. (B) We know that,

$(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$

$8^2 = 66 + 2(ab + bc + ca)$

$2(ab + bc + ca) = 64 - 66$

$ab + bc + ca = \dfrac{-2}{2} = -1$

Now,

$a^3 + b^3 + c^3 - 3abc = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$

$563 - 3abc = 8\,[66 - (-1)]$

$563 - 3abc = 8 \times 67$

$3abc = 563 - 536$

$\therefore \quad abc = \dfrac{27}{3} = 9$

63. (B) Here,

a = 24 and b = 72

Third proportion = $\dfrac{b^2}{a} = \dfrac{72 \times 72}{24} = 216$

64. (D) If equations have no solution,
Then,

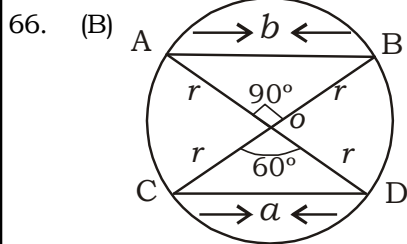$$\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$$

$$\frac{2}{6} = \frac{-k}{-12} \neq \frac{15}{15}$$

$6k = 24$

$\therefore \quad k = 4$

65. (C) Required time = $\dfrac{4 \times \dfrac{165}{60}}{16.5}$ hours

$= \dfrac{4 \times 165}{16.5 \times 60} \times 60$ minutes = 40 minutes

66. (B)

ΔCOD is a equilateral triangle.

$a = r$

ΔAOB is an isosceles triangle.

So, $\angle$OBA = 45°

$\sin 45° = \dfrac{r}{b}$

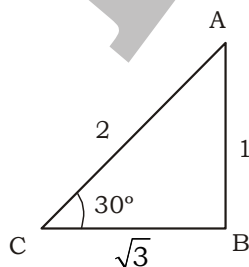$\dfrac{1}{\sqrt{2}} = \dfrac{r}{b}$

$\therefore \quad b = \sqrt{2}\,r \ or \ \sqrt{2}\,a$

67. (B) Arithmetic mean of first n natural number = $\dfrac{n+1}{2}$

68. (A) One side of cube = $\dfrac{20}{4}$ cm = 5 cm

Area of cube = 5^3 cm^3 = 125 cm^3

69. (C)

ATQ,

$\sqrt{3}$ units = 129

1 unit = $\dfrac{129}{\sqrt{3}}$ = $43\sqrt{3}$

∴ Height of the cliff = $43\sqrt{3}$ m

70. (C) ATQ,

$\dfrac{22}{7} \times (81 - r^2) \times 14 = 748$

$(81 - r^2) \times 4 = 68$

$81 - r^2 = 17$

$r^2 = 81 - 17$

$r^2 = 8$

∴ Thickness = 9 – 8 = 1 cm

71. (C) $\tan\theta = \dfrac{8}{15}$

$\sin\theta = \dfrac{8}{\sqrt{15^2 + 8^2}} = \dfrac{8}{17}$

∴ $\dfrac{\sqrt{1 - \sin\theta}}{\sqrt{1 + \sin\theta}} = \dfrac{\sqrt{1 - \dfrac{8}{17}}}{\sqrt{1 + \dfrac{8}{17}}} = \sqrt{\dfrac{9}{25}} = \dfrac{3}{5}$

72. (B) Difference = 540 – 120 = 420

73. (C) Average production = $\dfrac{1800}{6}$ = 300

74. (C) Required ratio = 1160 : 640 = 29 : 16

75. (B) Required number of fans = 400 – 300 = 100 units

MEANINGS IN ALPHABETICAL ORDER

Altruist	a person unselfishly concerned for or devoted to the welfare of others	परोपकारी
Autonomy	the right or condition of self-government	स्वयं शासन
Commemorate	recall and show respect for someone or something	पुण्यस्मरण करना
Drastic	likely to have a strong or far-reaching effect	कठोर
Fatigue	extreme tiredness	थकान
Harmonize	add notes to a melody to produce harmony	स्वर योजन करना
Hinder	create difficulties for someone or something resulting in delay or obstruction	अड़चन करना
Indifference	lack of interest, concern, or sympathy	उदासीनता
Intervention	the action of preventing or altering a result or course of events	हस्तक्षेप
Noticeable	easily seen or noticed	उल्लेखनीय
Optimum	most conducive to a favorable outcome	इष्टतम
Perspective	a point of view	दृष्टिकोण
Priest	one who performs certain rites and administer certain sacraments in church	पादरी
Selflessness	concern more with the needs and wishes of others than with one's own	निस्वार्थता
Sovereignty	supreme power or authority	संप्रभुता
Vocalist	a singer	गायक

SSC MOCK TEST - 343 (ANSWER KEY)

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