SSC MOCK TEST - 348 (SOLUTION)

1. (C) As, $8 \times 3 = 24 \Rightarrow \dfrac{24}{2} = 12$
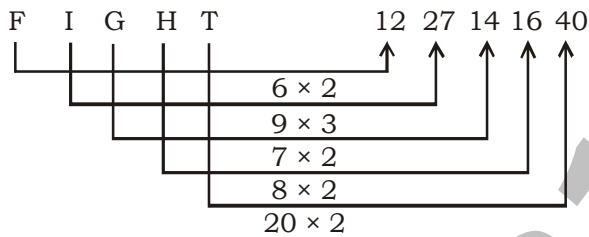
   Similarly, $9 \times 2 = 18 \Rightarrow \dfrac{18}{2} = 9$

2. (C) The body is fish remains covered with scales externally. Similarly the body of bear remains covered with fur.
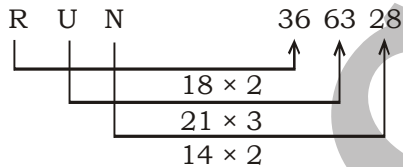
3. (D) Kiwi is the only flightless bird in the group.

4. (D) (A) $125 = 5^3$
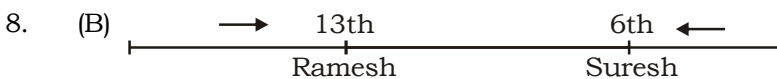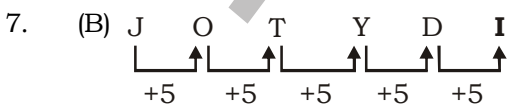   (B) $27 = 3^3$
   (C) $64 = 4^3$
   (D) $121 = 11^2$

5. (C) As,

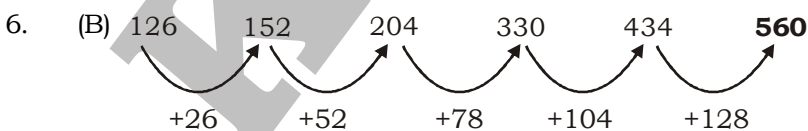   F   I   G   H   T   12 27 14 16 40

   6×2
   9×3
   7×2
   8×2
   20×2

   And,

   R   U   N   36 63 28

   18×2
   21×3
   14×2

   Similarly,

   G   L   A   S   S   14 28 3 38 38

   7×2
   14×2
   1×3
   19×2
   19×2

6. (B) 126   152   204   330   434   **560**

   $+26$ $+52$ $+78$ $+104$ $+128$

7. (B) J   O   T   Y   D   **I**

   $+5$ $+5$ $+5$ $+5$ $+5$

8. (B) $\longrightarrow$ 13th   6th $\longleftarrow$

   Ramesh   Suresh
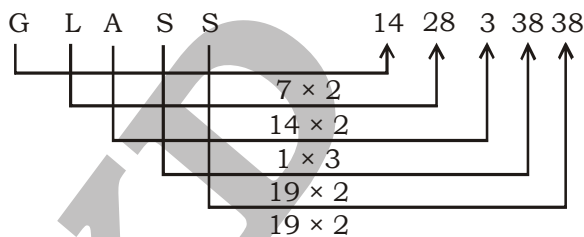
   Therefore, required number of students between Ramesh and Suresh = 33 – (13 + 6) = 14

9. (D) As, $13 \Rightarrow (1 + 3)^3 = 64$

    $64 \Rightarrow (6 + 4)^3 = 1000$

    Similarly, $15 \Rightarrow (1 + 5)^3 = 216$

    $216 \Rightarrow (2 + 1 + 6)^3 = 729$

10. (A) a**b**ca**a**b/caa**bb**c/**a**abbc**a**

11. (B)

12. (D)

13. (B) $175 \times 25 \div 5 + 625 - 32 = -20$

    After changing 5 and 625,

    $175 \times 25 \div 625 + 5 - 32 = -2$

    $\dfrac{175 \times 25}{625} + 5 - 32 = -20$

    $12 - 32 = -20$

    $-20 = -20$

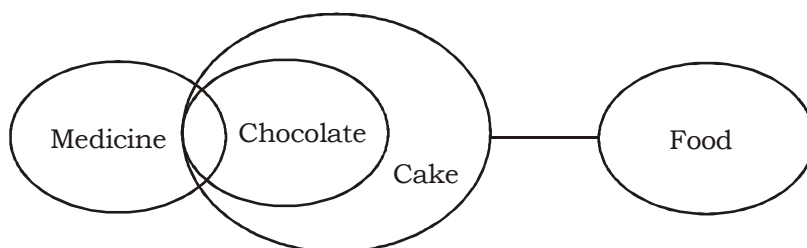14. (D)

    Thus, Radhika is vikram's sister.

15. (D) 5. Apartment $\rightarrow$ 1. Apple $\rightarrow$ 4. Application $\rightarrow$ 3. Apply $\rightarrow$ 2. Appreciate

16. (A)

    Hence, he is facing East direction now.

17. (A)

I. False   II. True   III. False

Hence, only conclusions II follows.

18. (B)   19. (B)

20. (D) As, 641 – 125 = 516 $\Rightarrow \dfrac{516}{2}$ = 258

Similarly, 512 – 120 = 392 $\Rightarrow \dfrac{392}{2}$ = 196

21. (B) As,   Similarly,

H	O	S	P	I	T	A	L
↓	↓	↓	↓	↓	↓	↓	↓
3	2	5	7	4	6	1	8

P	O	S	T	A	L
↓	↓	↓	↓	↓	↓
7	2	5	6	1	8

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

26. (C) Transactions made via UPI (Unified Payments Interface), USSD, AEPS (Aadhaar Enabled Payment System) and RuPay cards will be eligible for participation nder this scheme.

27. (C) The compound zinc oxide (ZnO) is called philosopher's wool. Alchemists, as part of their rituals, would burn zinc in air and collect the residue, which formed into white woolly tufts. They called it lana philosophica in Latin, meaning philosopher's wool.

28. (D) Corynebacteria are characterized by their diverse origins. They are found in numerous ecological niches and are most often used in industry for the mass production of amino acids and nutritional factors.

29. (A) X-ray computed tomography (CT) is a medical imaging method employing tomography created by computer processing. This technique is used to generate a three-dimensional image of the inside of an object.

31. (A) The Archaeological Survey of India is an attached office of the Ministry of Culture. Under the provisions of the AMASR Act of 1958, the ASI administers more than 3650 ancient monuments, archaeological sites and remains of national importance.

32. (B) Active transport is the movement of molecules across a cell membrane from a lower concentration to a region of higher concentration against the concentration gradient.

33. (C) IRNSS is an indigenously developed Navigational Satellite system. IRNSS is an acronym for The Indian Regional Navigation Satellite System (IRNSS). IRNSS is officially called NAVIC (Navigation with Indian Constellation). Operated by ISRO (Indian Space Research Organisation).

34. (A) The Nagaland Police recently launched 'Call your Cop' mobile App, which will enable all citizens of the state and those in distress to get in touch with the police, in a single click.

35. (A) A solar eclipse happens when the moon positioned between Earth and the sun, and the moon casts a shadow over Earth.

36. **(D)** The National Human Rights Commission (NHRC) of India is a Statutory public body constituted on 12 October 1993. The chairman of NHRC can be a retired Chief Justice of India.

37. **(C)** Hyder Ali is an Indian Ruler who defeated the British in their early stage of the rule in India. Hyder Ali was the Sultan of the Mysore kingdom in south India. He is well known as the father of the famous ruler Tipu Sultan. He was in command of the entire Mysorean army by 1759.

38. **(D)** The BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) is a multilateral fund, supported by donor governments and managed by the World Bank.

40. **(D)** Nitroglycerine is a liquid chemical substance used for making Dynamite by mixing highly sensitive Nitroglycerine with sawdust & powered Silica.

41. **(B)** Bajirao was appointed as Peshwa at the age of 20 years under the reign of Chhatrapati Shahu. Chhatrapati Shahu (Shahu Bhosale I) was the fifth Chhatrapati of the Maratha Empire. He was the grandson of Chatrapati Shivaji Maharaj.

42. **(A)** He is appointed by the President of India. ... The Attorney General of India is the highest law officer of the country. He is responsible to assist the government in all its legal matters.

43. **(D)** Black soil is most suited for the cultivation of cotton. Black soil is a volcanic origin. Black soil is also called as cotton soil.

45. **(B)** Fundamental rights in India are the rights guaranteed under Part III (Articles 12-35) of the Constitution of India.

46. **(B)** The Indian National Congress, on 19 December 1929, passed the historic 'Purna Swaraj' - (total independence) resolution - at its Lahore session. A public declaration was made on 26 January 1930 - a day which the Congress Party urged Indians to celebrate as 'Independence Day'.

47. **(B)** In telecommunications and signal processing frequency modulation FM conveys information over a carrier wave by varying its instantaneous frequency. FM is most commonly used for radio and television broadcasting.

49. **(B)** Born on 25th August 1981 in Manali, Shiva Keshavan is the first Indian Luger who has the honour of being the youngest luge Olympian in the history of the sport. Shiva has set various records in the Asian Championship.

50. **(C)** India's 1st Certified Organic Fruit - Arunachal Pradesh Kiwis have been launched by the Union Minister Kiren Rijiju.

51. **(A)** $x = \sqrt{y + 37437 \times 37439}$

$x = \sqrt{y + (37437 - 1) \times (37439 + 1)}$

$x = \sqrt{y + 37437^2 - 1^2}$

For y = 1, the value of x is possible to find.

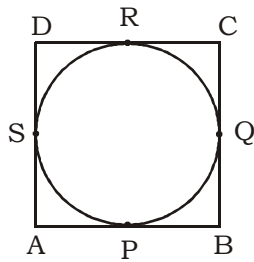As, $x = \sqrt{1^2 + 37438^2 - 1^2} = \sqrt{37438^2} = 37438$

52. **(B)** $x^2 = 2x - 1$

∴ $x^2(x^2 - 2) = (2x - 1)(2x - 1 + 2)$

$= (2x - 1)(2x + 1) = (2x^2)^2 - 1 = 4x^2 - 1$

53. **(C)**

3 more than multiple of 5	53	58	63	**68**	73	78	83	88
2 more than multiple of 6	56	62	**68**	74	80	86		

∴ Required number of questions = 68

54. (C)

AP = AS   ......(i)

BP = QB   .....(ii)

DR = DS   ....(iii)

CR = CQ   .....(iv)

(Length of two tangents drawn from an external point of a circle are equal)

Adding equations (i), (ii), (iii) and (iv),

AP + BP + DR + CR = AS + BQ + DS + CQ

(AP + BP) + (DR + CR) = (BQ + CQ) + (DS + AS)

AB + CD = BC + AD

9 + 7 = 12 + AD

AD = 16 – 12 = 4 cm

55. (A) ₹ 100 invested in CI becomes 200 in 5 years

Amount gets doubled again in 5 years

It means new amount = ₹ 400 in another 5 years

So, we can say that in another 5 years ₹ 200 interest will be earned.

56. (A) Relative speed of train and man = $\dfrac{270}{9}$ = 30 m/s = $30 \times \dfrac{18}{5}$ = 108 km/hr

Speed of train = 108 + 9 = 117 km/hr

∴ Required time to cross a platform = $\dfrac{270 + 380}{117 \times \dfrac{5}{18}} = \dfrac{650}{32.5}$ seconds = 20 seconds

57. (D) $\dfrac{\sin\theta + \cos\theta}{\sin\theta - \cos\theta} = 3$

$\sin\theta + \cos\theta = 3\sin\theta - 3\cos\theta$

$4\cos\theta = 2\sin\theta$

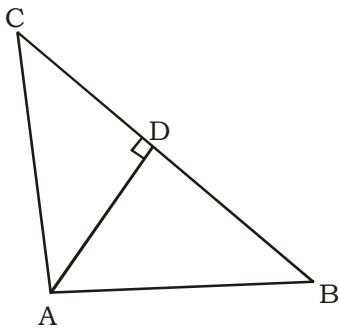$\dfrac{\sin\theta}{\cos\theta} = \dfrac{4}{2} = 2$

∴ $\sin^4\theta - \cos^4\theta = \left(\sin^2\theta + \cos^2\theta\right)\left(\sin^2\theta - \cos^2\theta\right)$

$= \sin^2\theta - \cos^2\theta = \cos^2\theta\left(\tan^2\theta - 1\right)$

$= \dfrac{\tan^2\theta - 1}{1 + \tan^2\theta} = \dfrac{4 - 1}{1 + 4} = \dfrac{3}{5}$

58. (C)

$\angle BAC = 90°, \ \angle ADC = 90°$

$BC = 8 \ cm, \ AC = 6 \ cm$

$AB = \sqrt{8^2 - 6^2} = 2\sqrt{7} \ cm$

Now,

Area of $\triangle ABC = \dfrac{1}{2} \times BC \times AD = \dfrac{1}{2} \times AB \times AC$

$8 \times AD = 2\sqrt{7} \times 6$

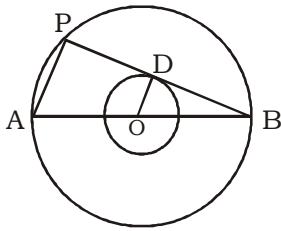$AD = \dfrac{3\sqrt{7}}{2} \ cm$

Now,

$CD = \sqrt{6^2 - \left(\dfrac{3\sqrt{7}}{2}\right)^2} = \sqrt{36 - \dfrac{63}{4}}$

$= \sqrt{\dfrac{144 - 63}{4}} = \sqrt{\dfrac{81}{4}} = \dfrac{9}{2} \ cm$

$\therefore \dfrac{Ar.(\triangle ABC)}{Ar.(\triangle ACD)} = \dfrac{\dfrac{1}{2} \times AB \times AC}{\dfrac{1}{2} \times CD \times AD}$

$= \dfrac{2\sqrt{7} \times 6}{\dfrac{9}{2} \times \dfrac{3\sqrt{7}}{2}} = \dfrac{2\sqrt{7} \times 6 \times 4}{9 \times 3 \times \sqrt{7}} = 16 : 9$

59. (B)

OD is radius of smaller circle and BD is the tangent to the smaller circle. So,

OD $\perp$ BD

$\angle$ODB = 90°

In the bigger circle, P is a point in the semi circle of the bigger circle.

Now, $\angle$APB = 90°

In $\triangle$ABP and $\triangle$OBD,

$\angle$APB = $\angle$ODB = 90°

$\angle$ABP = $\angle$OBD   (Common)

$\triangle$ABP $\sim$ $\triangle$OBD   (By AA similarity)

Now,

$$\frac{AP}{OD} = \frac{AB}{OB}$$

$$\frac{AP}{8} = \frac{30}{15}$$

AP = 8 × 2 = 16 cm

60. (B) Required average = $\left(\dfrac{50.25 \times 16 + 45.15 \times 8}{16 + 8} \right)$

$= \left(\dfrac{804 + 361.20}{24} \right) = \dfrac{1165.20}{24}$ = 48.55

61. (A) We have, $AB = 5\sqrt{3}$

$AL = BL = \dfrac{5\sqrt{3}}{2}$

Let $\angle AOB = 20$

Then, $\angle AOL = \angle BOL = \theta$

In $\triangle OLA$, We have

$\sin \theta = \dfrac{AL}{OA} = \dfrac{\frac{5\sqrt{3}}{2}}{5} = \dfrac{\sqrt{3}}{2}$

$\theta = 60°$

$\angle AOB = 120°$

Area of sector AOB $= \dfrac{190}{360} \times \pi \times 5^2 \text{cm}^2 = \dfrac{25\pi}{3} \text{cm}^2$

62. (A) Let the number of boys be 5x and number of girls be 4x.

ATQ,

5x + 4x = 45

9x = 45

$x = \dfrac{45}{9} = 5$

Number of boys = 5 × 5 = 25

Number of girls = 5 × 4 = 20

Let the average score of girls be y.

So, average score of boys = $y \times \dfrac{120}{100} = 1.2\,y$

ATQ,

20xy + 25 × 1.2y = 3600

20y + 30y = 3600
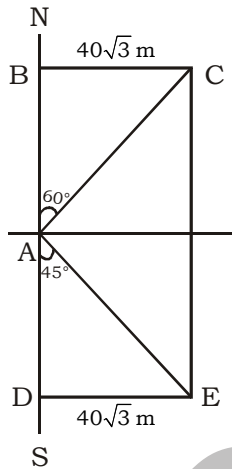
50y = 3600

$y = \dfrac{3600}{50} = 72$

∴ Average score of boys = 72 × 1.2 = 86.4

63. (A)

In right ΔABC,

$\tan 60° = \dfrac{BC}{AB}$

$\sqrt{3} = \dfrac{40\sqrt{3}}{AB}$

AB = 40

In right ΔADE,

$\tan 45° = \dfrac{DE}{AD}$

$1 = \dfrac{40\sqrt{3}}{AD}$

∴ $AD = 40\sqrt{3}\,m$

Distance travelled by bird = AB + AD = $40\left(1+\sqrt{3}\right)$ = 109.2 m

Now, Speed = $\dfrac{\text{Distance}}{\text{Time}} = \dfrac{109.2}{120}$ m / s = 3.276 km/hr

64. (B) Time = $\dfrac{\text{Distance}}{\text{Speed}}$

Total distance = 61 km

Let the distance travelled on foot = d km

Distance travelled on bicycle = (61 – d) km

Given, speed on foot = 4 km/hr

Time taken to travel on foot = $\left(\dfrac{d}{4}\right)$ hr

Speed on cycle = 9 km/hr

Time taken to travel on cycle = $\dfrac{\left(61-d\right)}{9}$

Total time taken = $\dfrac{d}{4}+\dfrac{61-d}{9}$

Given, Total time = 9 hours

$\therefore \dfrac{d}{4}+\dfrac{61-d}{9}=9$

9d + 244 – 4d = 324

5d = 80

d = 16 km/hr

65. (C) Let ages of A and B be x and y respectively.

Therefore,

$x-y$ = 3   ... (i)

Age of D = 2 × age of A = $2x$

Age of C = $\dfrac{1}{2}$ age of B = $\dfrac{1}{2}y$

So, $2x-\dfrac{y}{2}$ = 30

$4x-y$ = 60   ...(ii)

Subtracting equation (ii) from equation (i), we get

$-3x=-57$

x = 19

y = 16

So, age of A = 19 years and age of B = 16 years

66. (B) Relative speed of man and woman is (4 + 5) = 9 miles/h

Hence, time required to cover 81 miles = $\dfrac{81}{9}$ = 9 hours

In 9 hours, the women will travel 9 × 4 = 36 miles

67. **(C)** Let the cost price of an article be ₹ 100.

Selling price of an article = $100 \times \dfrac{140}{100}$ = ₹ 140

New cost price of an article = $100 \times \dfrac{60}{100}$ = ₹ 60

New selling price of an article = $60 \times \dfrac{140}{100}$ = ₹ 84

ATQ,

$(140 - 84) \rightarrow 750.40$

$100 \rightarrow \dfrac{750.40}{56} \times 100$ = ₹ 1340

∴ Cost price of an article = ₹ 1340

68. **(B)** P = ₹ 12,500

$T = \dfrac{11}{2}$ years (Compounded half yearly)

T = 11 years

A = 13,000

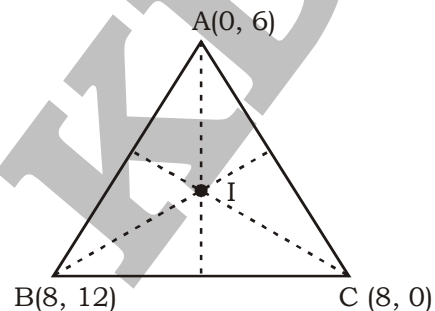SI = A – P = 13,000 – 12,500

SI = 500

$SI = \dfrac{PRT}{100}$

$500 = \dfrac{12500 \times R \times 11}{100}$

$R = \dfrac{500 \times 1}{125 \times 11} = \dfrac{4}{11}$

For first half year

$R = \dfrac{2 \times 4}{11} = \dfrac{8}{11}\%$

69. **(D)**

$a = BC = \sqrt{0^2 + (12 - 0)^2} = 12$
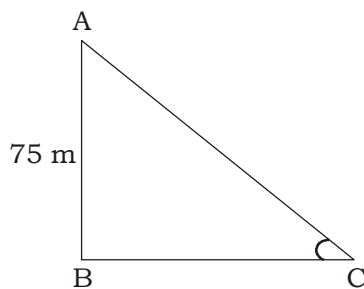
$b = AC = \sqrt{(0 - 8)^2 + (6 - 0)^2} = 10$

$c = AB = \sqrt{8^2 + 6^2} = 10$

$\therefore$ Incentre of triangle ABC = $\left(\dfrac{ax_1 + bx_2 + cx_3}{a + b + c}, \dfrac{ay_1 + by_2 + cy_3}{a + b + c} \right)$

$= \left(\dfrac{12 \times 0 + 10 \times 8 + 10 \times 8}{12 + 10 + 10}, \dfrac{12 \times 6 + 10 \times 12 + 10 \times 0}{12 + 10 + 10} \right)$

$= \left(\dfrac{160}{32}, \dfrac{192}{32} \right) = (5, 6)$

70. **(D)**

Height of kite from ground = AB = 75 m

$\angle ACB = \theta$

We know that,

$\cot \theta = \dfrac{8}{15}$

$\dfrac{BC}{AB} = \dfrac{8}{15}$

$BC = \dfrac{8 \times 75}{15} = 40 \, m$

Now, length of string AC = $\sqrt{(AB)^2 + (BC)^2}$

$AC = \sqrt{75^2 + 40^2} = \sqrt{5625 + 1600} = \sqrt{7225} = 85 \, m$

71. **(B)** Required difference = $\dfrac{1}{6}$ × (14 + 18 + 23 + 21 + 27 + 26) – 15 = 21.5 – 15 = ₹ 6.5 thousand

72. **(D)** Required ratio = 18 : 15 : 9 = 6 : 5 : 3

73. **(B)** From graph the required year is 2000

74. **(C)** Required percentage = $\left(\dfrac{29}{35} \times 100 \right) \% \approx 83\%$

75. **(A)** Required percentage increase = $\left(\dfrac{27 - 18}{18} \times 100 \right) \% = 50\%$

Campus

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MEANINGS IN ALPHABETICAL ORDER

Abrogate	repeal or do away with (a law, right, or formal agreement)	अभिनिषेध करना
Admonition	an act or action of admonishing; authoritative counsel or warning	चेतावनी
Defference	humble submission and respect	सम्मान
Distract	prevent (someone) from giving full attention to something	विचलित
Dotage	the period of life in which a person is old and weak	मतिक्षीणता
Ebullience	the quality of being cheerful and full of energy; exuberance	जोश-खरोश
Exonerate	(especially of an official body) absolve (someone) from blame for a fault or wrongdoing, especially after due consideration of the case	हक बहाल करना
Extravagance	lack of restraint in spending money or use of resources	अपव्यय
Fetter	a chain or manacle used to restrain a prisoner, typically placed around the ankles	बेड़ी
Flamboyance	the tendency to attract attention because of one's exuberance, confidence, and stylishness	भड़कीलापना
Flattery	excessive and insincere praise, given especially to further one's own interests	चापूलसी
Hallucination	an experience involving the apparent perception of something not present	माया
Intently	with earnest and eager attention	आशय से
Ostentatious	characterized by vulgar or pretentious display; designed to impress or attract notice	दिखावटी
Parsimonious	unwilling to spend money or use resources; stingy or frugal	किफायती
Prodigious	remarkably or impressively great in extent, size, or degree	विलक्षण
Repeal	revoke or annul (a law or congressional act)	रद्द
Sacrilege	violation or misuse of what is regarded as sacred	अपवित्रीकरण
Sacrosanct	(especially of a principle, place, or routine) regarded as too important or valuable to be interfered with	पुण्यमय
Senility	the condition of being senile	बुढ़ापा
Superannuation	regular payment made into a fund by an employee toward a future pension	पेंशन

SSC MOCK TEST - 348 (ANSWER KEY)

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