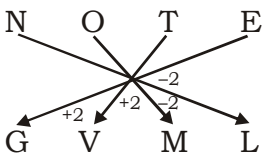
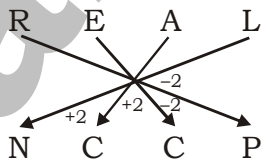
SSC MOCK TEST - 339 (SOLUTION)

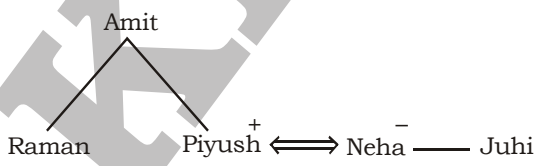
1. (D) Moving activity of Bull is Charge, while moving activity of Butterfly is Flutter.
2. (A) As, $(9 + 2)^3 + 9 = 1340$
   And, $(5 + 2)^3 + 5 = 348$
   Similarly, $(7 + 2)^3 + 7 = 736$
3. (C) Except Snake, others are the family of 'Panther genus'.
4. (C) (A) L N P (+2, +2)
   (B) A C E (+2, +2)
   (C) R T W (+2, +3)
   (D) X Z B (+2, +2)
5. (C) As,



Similarly,



6. (B) $18 \times 1.5 = 27$
   $27 \times 3 = 81$
   $81 \times 4.5 = 364.5$
   $364.5 \times 6 = 2187$
7. (A) BCF CDG DEH EFI (+1, +1, +1)
8. (C)



   Hence, Neha is daughter-in-law of Amit.
9. (B) As, $(1 + 8)^2 = 81$
   $81 - (8 - 1)^2 = 32$
   Similarly, $(7 + 1)^2 = 64$
   $64 - (6 - 4)^2 = 60$
10. (C) ljqdp/ljqdp/ljqdp

11. (D) **In the first row,**
$(17 + 15) \times (17 - 15) = 64$
In the second row,
$(63 + 58) \times (63 - 58) = 605$
In the third row,
$(23 + 9) \times (23 - 9) = 448$

12. (B)

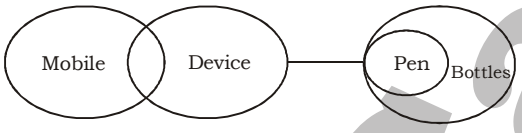
13. (C) $156 + 4 \times 36 \div 6 - 18 = 1572$
After changing + and ÷ ,
$156 \div 4 \times 36 + 6 - 18 = 1572$
$44 \times 36 + 6 - 18 = 1572$
$1590 - 18 = 1572$
$1572 = 1572$

14. (D)

15. (A) $P > Q$ .....(i)
$T > R$ ....(ii)
$Q > S > T$ ....(iii)
Combine (i), (ii) and (iii),
$P > Q > S > T > R$
Hence, R is lightest.

16. (D) 2. Recede → 4. Recliner → 6. Recognition → 5. Reconcile → 3. Recorder → 1. Recreation

17. (D)



I. False II. False III. False
Hence, No conclusion follows.

18. (B) 19. (A)

20. (C) As, $95 + 4^2 = 111$
$111 + 4^3 = 175$
Similarly, $64 + 4^2 = 80$
$80 + 4^3 = 144$

21. (B) Son's age five years ago = 18 years
Son present age = 18 + 5 = 23 years
Father's age at the time of birth of his son = son present age = 23 years
Present age of father = 23 + 23 = 46 years

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

27. (B) The largest committee is the committee of estimates and it has 30 members Committee on No. of members Public Accounts 22 Estimates 30 Public undertakings 22 Petitions LS(15), RS(10)

28. (B) Union Minister for Micro, Small and Medium Enterprises Shri Narayan Rane inaugurated the Ministry's Mega Event- "Enterprise India" under Azadi Ka Amrit Mahotsav.

29. (B) A strait is a narrow, typically navigable channel of water that connects two larger, navigable bodies of water. It commonly refers to a channel of water that lies between two land masses, but it may also refer to a navigable channel through a body of water that is otherwise not navigable, for example, because it is too shallow, or because it contains an un-navigable reef or archipelago.

30. (B) The Godavari is the largest river system of the Peninsular India and is next only to the Ganga and the Indus systems regarding sanctity, picturesqueness and utility and is held in reverence as Vridha Ganga or Dakshin Ganga. Its total length is 1465 kilometres. The source of this river is in the Trimbak Plateau of North Sahyadri near Nasik, in Maharashtra, which is only 80 km from the shore of the Arabian Sea. From its source it flows eastwards in a narrow rocky bed upto Nashik, but the river valley opens out below this point. It receives a large number of tributaries both from the left as well as from the right. But the left bank tributaries are more in number and large in size than the right bank tributaries. The Manjra (724 km) is the only important right bank tributary. The Penganga, the Wardha, the Wainganga, the Indravati and the Sabari are important left bank tributaries.

32. (A) Revolt of 1857 is referred as Sepoy Mutiny by many historians. After the mutiny Lord Canning was made the Viceroy and power was transferred from the East India Company to the British crown by Act of 1858.

34. (C) Capital markets provide for the buying and selling of long term debt or equity backed securities. When they work well, the capital markets channel the wealth of savers to those who can put it to long term productive use, such as companies or governments making long term investments. Capital Markets allow businesses to raise long-term funds by providing a market for securities, both through debt and equity. Capital markets offer a whole range of complicated products which allow businesses and banks not just to raise capital but also to 'hedge' (protect) against risks.

35. (C) The average albedo of earth is 34%. It varies according to the colour and texture of the surface. According to the ecosystem, the maximum albedo would be of Tundra, than Taiga, then tropical green forest and tropical deciduous forest respectively.

36. (C) Duration of Panchayats is five years. Fresh election to constitute a Panchayat shall be completed before the expiry of its term; or in case of dissolution before the expiry of a period of 6 months from the date of its dissolution.

37. (B) Territorial Jurisdiction of the Guwahati Government: Asam, Manipur, Meghalaya, Nagaland, Tripura, Mizoram and Arunachal Pradesh.38. (C) Calcium is the most common and abundant mineral in the body. It is important for healthy bones and teeth, helps muscle relax and contract, important in nerve functioning, blood clotting etc. Sodium is needed for proper fluid balance, nerve transmission and muscle contraction.

40. (B) Minerals Mining area Graphite ® Bellary Lead ® Zawar Salt ® Didwana Siler ® Rampa

41. (D) Female birds in most families have only one functional ovary (the left one), connected to an oviduct-although two ovaries are present in the embryonic stage of each female bird.

42. (D) In 1327, Tughluq passed an order to shift the capital from Delhi to Deogiri/Daulatabad (in present-day Maharashtra) in the Deccan region of south India. Tughluq said that it would help him to establish control over the fertile land of the Deccan plateau. He also felt that it would make him safe from the Mongol invasions which were mainly aimed at Delhi and regions in north India. Also, it was not always possible to operate an army from Delhi for the occupation of Southern states. Muhammad-bin-Tughlaq himself had spent a number of years when a prince in occupying and guarding the southern states during the rein of his father.

44. (B) The Cabinet Committee on Economic Affairs approved the continuation of the Prime Minister Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi) scheme till December 2024.

46. (B) Marginal product of an input (factor of production) is the extra output that can be produced by using one more unit of the input (for instance, the difference in output when a firm's labour usage is increased from five to six units), assuming that the quantities of no other inputs to production change. Marginal product, which occasionally goes by the alias marginal physical product (MPP) is the one of the two measures derived from the total product. The other is average product. Marginal product is directly proportional to total product.

47. (C) The Constitution of India recognizes religious and linguistic minorities under article 29 and 30 (Cultural and Educational rights). However it does not define the term Minority.

48. (D) Work done by the string of the simple pendulum during one complete oscillation is zero. Tension in the string exactly cancels the component parallel to the string. This leaves a net restoring force back towards the equilibrium position as it is equal to zero.

51. (A) A's 1 day work = $\frac{1}{16}$

A's 1 day work = $\frac{4}{16} = \frac{1}{4}$

B's 1 day work = $\frac{1}{12}$

B's 4 day work = $\frac{4}{12} = \frac{1}{3}$

Remaining work = $1 - \left(\frac{1}{4} + \frac{1}{3}\right) = 1 - \frac{7}{12} = \frac{5}{12}$

Therefore, if A and B finish the work in 4 days with the help of C.

Then C's work for 4 days will be $\frac{5}{12}$.

Ratio of efficiency of A, B and C = $\frac{1}{4} : \frac{1}{3} : \frac{5}{12}$ = 3 : 4 : 5

∴ Share of C = $\frac{750}{12} \times 5$ = ₹ 312.50

52. (C) SP of 15 oranges = CP of 18 oranges

$\frac{SP}{CP} = \frac{18}{15}$

∴ Profit% = $\left(\frac{18-15}{15} \times 100\right)\%$ = 20%

53. (D) HCF of 1404, 2364 and 2496
= HCF of (2364 – 1404, 2496 – 2364)
= HCF of (960, 132) = 12

∴ Number of bottles needed

= $\frac{1404}{12} + \frac{2364}{12} + \frac{2496}{12}$

= 117 + 197 + 208 = 522 bottles

54. (B) Let the second number be 3x.
First number = 6x
Third number = 2x
ATQ,

$\frac{6x + 3x + 2x}{3} = 50.6$

11x = 50.6 × 3

x = $\frac{50.6 \times 3}{11}$ = 13.8

∴ Required difference = 6x – 2x = 4x
= 4 × 13.8 = 55.2

55. (D) P = ₹ 8000

T = 2 years

R = 10%

$$CI = 8000\left(1+\frac{10}{100}\right)^2 - 8000$$

$$= 8000 \times \frac{121}{100} - 8000$$

$$= 9680 - 8000 = ₹\ 1680$$

$$SI = \frac{1680}{2} = ₹\ 840$$

$$\therefore\ P = \frac{840\times100}{4\times12} = ₹\ 1750$$

56. (A) Let the upstream speed be x km/hr and downstream speed by y km/hr.

$$\frac{40}{x}+\frac{30}{y}=12 \qquad \text{.....(i)}$$

$$\frac{50}{x}+\frac{20}{y}=10 \qquad \text{.....(ii)}$$

Multiply equation (i) by 2 and equation (iii) by 3 and then subtract,

$$\frac{80}{x}+\frac{60}{y}=24$$

$$-\frac{150}{x}-\frac{60}{y}=-30$$

$$-\frac{70}{x} = -6$$

$$x=\frac{70}{6}=\frac{35}{3}\text{km/hr}$$

Put the value of x in equation (i),

$$\frac{40}{35}\times3+\frac{30}{y}=12$$

$$\frac{24}{7}+\frac{30}{y}=12$$

$$\frac{30}{y}=12-\frac{24}{7}$$

$$\frac{30}{y}=\frac{84-24}{7}$$

$$\frac{30}{y}=\frac{60}{7}$$

$y = \frac{210}{60} = \frac{7}{2}$ km / hr

$\therefore$ Speed of person = $\frac{1}{2}\left(\frac{35}{3}+\frac{7}{2}\right) = \frac{1}{2}\left(\frac{70+21}{6}\right)$

$= \frac{91}{12}$ km / hr $= 7\frac{7}{12}$ km/hr

57. (D) Remainder of $\frac{(ax+1)^n}{a}$ is 1.

Remainder of $\frac{(ax-1)^n}{a}$ is –1 or +1 if n is even or odd respectively.

$\frac{89^{561}}{17} = \frac{(4)^{561}}{17} = \frac{4^{560}\times 4}{17}$

$= (4^2)^{280} \times \frac{4}{17} = (16^{280}) \times \frac{4}{17}$

$= (-1)^{280} \times \frac{4}{17} = \frac{4}{17}$

Thus, remainder is 4.

58. (C) $\left(2\frac{7}{8}\text{of}\frac{12}{46}\div\frac{4}{5}\right)\times 1\frac{1}{10}\div\left(\frac{3}{4}\times 2\frac{2}{5}\text{of}\frac{1}{4}\div\frac{1}{8}\right)$

$= \left(\frac{23}{8}\times\frac{12}{46}\times\frac{5}{4}\right)\times\frac{11}{10}\div\left(\frac{3}{4}\times\frac{12}{5}\times\frac{1}{4}\times\frac{8}{1}\right)$

$= \frac{15}{16}\times\frac{11}{10}\div\frac{18}{5} = \frac{15}{16}\times\frac{11}{10}\times\frac{5}{18} = \frac{55}{132}$

59. (A) $\tan 3\theta = \tan(2\theta + \theta)$

$\tan 3\theta = \frac{\tan 2\theta + \tan\theta}{1 - \tan 2\theta \tan\theta}$

$\tan 3\theta = (1 - \tan 2\theta \tan\theta) = \tan 2\theta + \tan\theta$

$\tan 3\theta - \tan 2\theta - \tan\theta = \tan 3\theta \tan 2\theta \tan\theta$

60. (D) $2x + \frac{2}{x} = 5$

Divide both sides by 2,

$x + \frac{1}{x} = \frac{5}{2}$

Cubing both sides,

$$x^3 + \frac{1}{x^3} + 3 \times x \times \frac{1}{x}\left(x + \frac{1}{x}\right) = \left(\frac{5}{2}\right)^3$$

$$x^3 + \frac{1}{x^3} + 3 \times \frac{5}{2} = \frac{125}{8}$$

$$x^3 + \frac{1}{x^3} = \frac{125}{8} - \frac{15}{2}$$

$$x^3 + \frac{1}{x^3} = \frac{125 - 60}{8} = \frac{65}{8}$$

$$\therefore \quad x^3 + \frac{1}{x^3} + 3 = \frac{65}{8} + 3 = \frac{65 + 24}{8} = \frac{89}{8}$$

61. (B) Let the total quantity of mixture be x liters.

Petrol : Kerosene

5 : 3 (initially)

3 : 5 (after replacement)

$$\frac{\text{Remaining quantity}}{\text{Initial quantity}} = 1 - \frac{\text{Replaced quantity}}{\text{Total quantity}}$$

$$\frac{3}{5} = 1 - \frac{20}{x}$$

$$1 - \frac{3}{5} = \frac{20}{x}$$

$$\frac{20}{x} = \frac{2}{5}$$

$$\therefore \quad x = \frac{100}{2} = 50 \text{ liters}$$

62. (C) Percentage of candidates who passed in both the subjects = [100 – (38 + 48 – 13)]% = 27%

$$\therefore \text{ Number of candidates appeared} = \frac{81}{27} \times 100 = 300$$

63. (B) $\sin A + \cos A = \sqrt{2} \cos (90° - A)$

$$\sin A + \cos A = \sqrt{2} \sin A$$

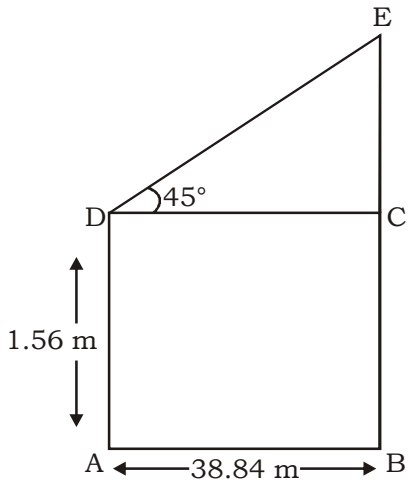
$$\cos A = \left(\sqrt{2} - 1\right)\sin A$$

$$\frac{\sin A}{\cos A} = \frac{1}{\sqrt{2} - 1}$$

$$\tan A = \frac{1}{\sqrt{2} - 1}$$

$$\therefore \quad \tan A = \sqrt{2} + 1$$

64. (D)



AB = CD

In ΔEDC,

$$\tan 45° = \frac{EC}{DC}$$

$$1 = \frac{EC}{38.84}$$

EC = 38.84

Height of pole = 38.84 + 1.56 = 40.4 m

65. (A) $(a - b) = 2$

Cubing both sides,

$(a - b)^3 = (2)^3$

$a^3 - b^3 - 3ab(a - b) = 8$

$152 - 3ab(2) = 8$

$-6ab = -144$

$ab = 24$

$a^3 - b^3 = 152$

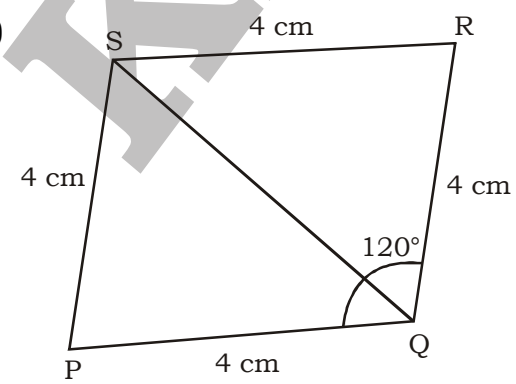
Squaring both sides,

$(a^3 - b^3)^2 = (152)^2$

$a^6 + b^6 - 2a^3b^3 = 23104$

$\therefore$ $a^6 + b^6 = 23104 + 2(24)^3 = 50752$

66. (A)



PQ = QR = RS = PS = 4 cm

$\angle PQR = 120°$

We know that sum of adjacent angle of rhombus is 180°

$\angle PQR + \angle QRS = 180°$

$\angle QRS = 180° - 120° = 60°$

Using cosine rule in ΔQRS,

$QS^2 = QR^2 + RS^2 - 2 \times QR \times QS \times \cos \angle QRS$

$QS^2 = 4^2 + 4^2 - 2 \times 4 \times 4 \times \cos 60°$

$QS^2 = 32 - 16$

$\therefore$ $QS = \sqrt{16} = 4$ cm

67. (C) Let the ten successive numbers are x, x + 1, x + 2, x + 3, x + 4, x + 5, x + 6, x + 7, x + 8 and x + 9.
ATQ,

$$\frac{x + x + 1 + x + 2 + x + 3 + x + 4 + x + 5 + x + 6 + x + 7 + x + 8 + x + 9}{10} = 7.5$$

$10x + 45 = 75$

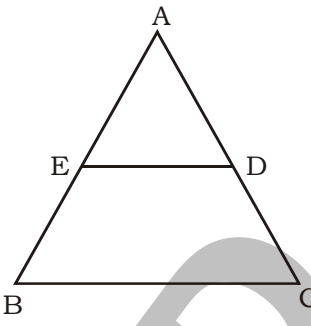
$x = \frac{30}{10} = 3$

Smallest number = 3

Largest number = 3 + 9 = 12

$\therefore$ Average of smallest and largest number = $\frac{3 + 12}{2} = 7.5$

68. (B)



Let the $\angle A, \angle B$ and $\angle C$ be 3x°, 4x° and 5x° respectively.

We know that sum of angles of triangle is 180°.

3x° + 4x° + 5x° = 180°

12x = 180°

$x = \frac{180}{12} = 15°$

$\angle A = 3x = (3 \times 15) = 45°$

$\angle B = 4x = (4 \times 15) = 60°$

$\angle C = 5x = (5 \times 15) = 75°$

$\because$ DE||CB

$\angle ABC = \angle AED$ (Alternate angle)

$\therefore$ $\angle AED = 60°$

69. (C) $\left[\dfrac{\sin^2 26^\circ + \sin^2 64^\circ}{\cos^2 28^\circ + \cos^2 62^\circ} + \cos^2 78^\circ + \sin 78^\circ \cos 12^\circ\right]$

$= \dfrac{\sin^2 26^\circ + \sin^2 (90^\circ - 26^\circ)}{\cos^2 28^\circ + \cos^2 (90^\circ - 28^\circ)} + \cos^2 78^\circ + \sin 78^\circ \cos (90^\circ - 78^\circ)$

$= \dfrac{\sin^2 26^\circ + \cos^2 26^\circ}{\cos^2 28^\circ + \sin^2 28^\circ} + \cos^2 78^\circ + \sin 78^\circ . \sin 78^\circ$ $\left[\because \cos(90^\circ - \theta) = \sin\theta \atop \sin(90^\circ - \theta) = \cos\theta\right]$

$= \dfrac{1}{1} + \cos^2 78^\circ + \sin^2 78^\circ$ $\left[\because \sin^2\theta + \cos^2\theta = 1\right]$

$= 1 + 1 = 2$

70. (C) ATQ,

7% of P + 3% of Q = $\dfrac{3}{2}[4\%$ of P+ 6% of Q$]$

$\dfrac{7P}{100} + \dfrac{3Q}{100} = \dfrac{3}{2}\left[\dfrac{4P}{100} + \dfrac{6Q}{100}\right]$

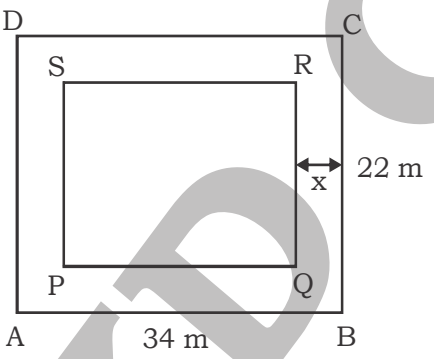
$7P + 3Q = \dfrac{3}{2}[4P + 6Q]$

$7P + 3Q = 6P + 9Q$

$P = 6Q$

$\therefore \quad \dfrac{Q}{P} = \dfrac{1}{6} = 1 : 6$

71. (A)



Area of the field ABCD = (34 × 22) m^2 = 748 m^2

Let the width of the path be x meters.

Area of PQRS without path = $(34 - 2x)(22 - 2x)$ m^2

Area of path = $748 - (748 + 4x^2 - 112x)$

$528 = -4x^2 + 112x$

$4x^2 - 112x + 528 = 0$

$x^2 - 28x + 132 = 0$

$(x - 22)(x - 6) = 0$

x = 6 m and 22 m (22 m is not possible)

$\therefore$ Width of path = 6 m

72. (B) Required ratio = (21 + 18) : (36 + 32) = 39 : 68

73. (A) Required ratio = 36 : 3 = 12 : 1

74. (C) Total number of personnel in those categories in the year 2010 = 18 + 15 = 33 and in the year 2014 = 25 + 31 = 56

$\therefore$ Required percentage = $\frac{33}{56} \times 100 = 58.92\% \approx 59\%$

75. (C) Required angle = $\left(\frac{31}{135} \times 350\right) = 82.67° \approx 83°$

MEANINGS IN ALPHABETICAL ORDER

Allusive	(of a remark or reference) working by suggestion rather than explicit mention	सांकेतिक
Ambidextrous	(of a person) able to use the right and left hands equally well	कपटी
Ambiguous	(of language) open to more than one interpretation; having a double meaning	अस्पस्ट
Battered	injured by repeated blows or punishment	चकनाचूर
Benediction	the utterance or bestowing of a blessing, especially at the end of a religious service	आर्शीवाद
Benevolence	the quality of being well meaning; kindness	भलाई
Besmirch	damage the reputation of (someone or something) in the opinion of others	गंदा करना
Elusive	difficult to find, catch, or achieve	मायावी
Explicit	stated clearly and in detail, leaving no room for confusion or doubt	मुखर यौन
Extravagant	lacking restraint in spending money or using resources	खर्च
Fleet	a group of ships sailing together, engaged in the same activity, or under the same ownership	बेड़ा
Lexicographer	a person who compiles dictionaries	कोशकार
Linguist	relating to language or linguistics	भाषाई
Nausea	a feeling of sickness with an inclination to vomit	जी मिचलाना
Spendthrift	a person who spends money in an extravagant, irresponsible way	अपव्ययी
Vulnerable	susceptible to physical or emotional attack	चपेट में

SSC MOCK TEST - 339 (ANSWER KEY)

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

76. (D) No error

77. (A) 'Bacteria' is a plural noun, hence it is followed by a plural verb. Change 'is' into 'are'.

86. (C) Verb 'prefer' is followed by 'to'.

87. (C) No improvement. 'Taxes' is Third Person Plural Noun, therefore, 'they' should be used for it.