

SSC MOCK TEST - 251 (SOLUTION)

1. (B) As,

$$\begin{array}{cccc} P & D & Q & R \\ \downarrow & \downarrow & \downarrow & \downarrow \\ 16 & + & 4 & + & 17 & + & 18 & = & 55 \end{array}$$

Similarly,

$$\begin{array}{cccc} M & N & T & C \\ \downarrow & \downarrow & \downarrow & \downarrow \\ 13 & + & 14 & + & 20 & + & 3 & = & 50 \end{array}$$

2. (C) As,

$$4846 \rightarrow (8 \times 4) - (4 \times 6) = 8$$

Similarly,

$$5632 \rightarrow (6 \times 3) - (5 \times 2) = 8$$

3. (C) Human take Oxygen, while Tree take Carbon dioxide.

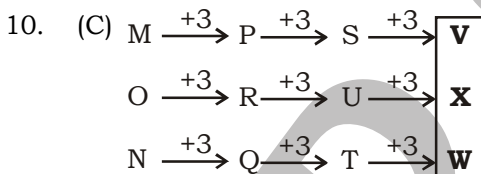
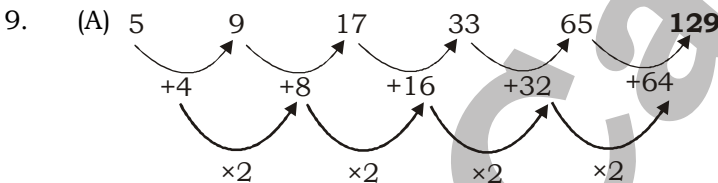
4. (D) Except (D), others are antonyms of each other.

5. (D) Except 'Ball', others have two vowels.

6. (B) Except 87, all are prime number.

7. (C) 4. Action \rightarrow 2. Active \rightarrow 3. Actual \rightarrow 5. Adapt \rightarrow 1. Adequate

8. (B) NATIONAL



11. (D)

12. (C) As,

$$\sqrt{1} + \sqrt{4} = 3 \Rightarrow 3^2 = 9$$

$$\sqrt{16} + \sqrt{25} = 9 \Rightarrow 9^2 = 81$$

Similarly,

$$\sqrt{16} + \sqrt{4} = 6 \Rightarrow 6^2 = 36$$

13. (A) From Ist Row,

$$64 - (8 \times 2) = 48$$

From IInd Row,

$$81 - (9 \times 2) = 63$$

From IIIrd Row,

$$49 - (7 \times 2) = 35$$

14. (B)
- | | | | | | |
|---|---|---|---|---|---|
| P | X | M | Z | L | T |
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| 8 | 7 | 4 | 6 | 3 | 0 |
| | | | | | |
| Z | T | P | L | M | X |
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| 6 | 0 | 8 | 3 | 4 | 7 |

15. (A)
-

Hence the distance between starting point and end point is 5 meters.

16. (C)
-

I. False II. False III. False IV. False
Hence, no conclusion follows.

17. (C) ZXXWX

18. (B) As,
 $22 \times 5 - 9^2 = 110 - 81 = 29$
 Similarly,
 $15 \times 12 - 11^2 = 180 - 121 = 59$

19. (C) Total odd days between 28th October and 28 November = 3 day (October) + 28 days(November)
 $31 = 3$ (odd days)
 \therefore Required day = Sunday + 3 days = Wednesday

20. (B) **From option (A),**
 $(10 - 7) \times 2 < (10 \times 2) - 7$
 After changing the sign,
 $= (10 \times 7) + 2 < (10 + 2) \times 7$
 $= 72 < 84$ (True)
From option (B),
 $(10 \times 7) - 2 < (10 - 2) \times 7$
 After changing the sign,
 $= (10 + 7) \times 2 < (10 \times 2) + 7$
 $= 34 < 27$ (False)

From option (C),

$$(10 + 2) \div 7 < (10 \div 7) + 2$$

After changing the sign,

$$= (10 \div 2) - 7 < (10 - 7) \div 2$$

$$= -2 < 1.5 \text{ (True)}$$

From option (D),

$$(10 \div 2) + 7 < (10 + 7) \times 2$$

After changing the sign,

$$= (10 - 2) \div 7 < (10 \div 7) + 2$$

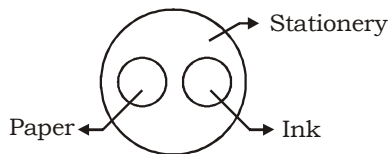
$$= \frac{8}{7} < \frac{24}{7} \text{ (True)}$$

Hence option (B) is correct.

21. (D) There are 14 squares in the given question.

22. (C)

23. (A)



24. (C)

25. (B) 55, 78, 20, 68

27. (C) Since Pluto is the farthest to the Sun so it takes about 248 years to complete one revolution. Mercury is nearest so it takes 88 days to complete one revolution. Our Earth revolves once in about 365 days and 6 hours.

28. (D) Radio waves are transmitted through Ionosphere.

29. (D) Tungabhadra Project: It is a joint undertaking of Andhra Pradesh and Karnataka. The project comprises a 2441 metres long and 50 metres high straight gravity masonry dam across the Tungabhadra (a tributary of Krishna river) at Mallapur in Bellary district of Karnataka, two irrigation canals and power houses on both sides of the dam.

30. (B) At present (2009), the Eighth Schedule of the Constitution specifies 22 languages (originally 14 languages). These are 1. Assamese 2. Bengali 3. Gujarati 4. Hindi 5. Kannada 6. Kashmiri 7. Malayalam 8. Marathi 9. Oriya 10. Punjabi 11. Sanskrit 12. Sindhi 13. Tamil 14. Telugu 15. Urdu 16. Manipuri 17. Nepali 18. Konkani 19. Bodo 20. Maithili 21. Dogri 22. Santhali

Note: Sindhi was added by the 21st Amendment Act of 1967; Konkani, Manipuri and Nepali were added by the 71st Amendment Act of 1992 and by the 92nd Constitutional Amendment Act, 2003, four new languages - Bodo, Maithili, Dogri and Santhali - were added to the Eighth Schedule of the Indian constitution.

31. (C) An electric charge always flows from a body at higher potential to a body at a lower potential irrespective of the amounts of charges contained in them. In the question, no current flows. So there is no potential difference.

32. (B) Former Reserve Bank of India Governor C Rangarajan has been conferred with the lifetime achievement award for his contribution to statistics. The award has been given to him on the occasion of Statistics Day, which is celebrated on June 29 every year. C Rangarajan had served as the Chairman of the National Statistical Commission.

33. (C) Alkaline phosphate is an anti-rust solution. Painting and galvanizing also prevent rusting.
35. (C) Sodium chloride, used as a general cleanser. It is also used as an antiseptic mouthwash.
37. (D) BRICS is a grouping acronym of leading emerging economies: Brazil, Russia, India and China. South Africa was included into the BRIC group in 2010. The acronym was coined by Jim O' Neill in a 2001 paper entitled Building Better Global Economic BRIC's. The BRIC countries met their first official summit on June 16, 2009 in Yekaterinburg, Russia.
38. (D) Abanindranath Tagore founded Bengal School of Art' along with EB Havell. He led the neo-art movement, ie to regenerate ancient and medieval artist's supreme mental weapon in modern setting.
40. (C) Former Indian spinner Sunil Joshi has been named Chairman of the National selection panel by the Cricket Advisory Committee (CAC) of BCCI.
43. (C) The Parliament can make laws on any subject of the three lists (including the State List) for the Union Territories. This power of Parliament also extends to Puducherry and Delhi, which have their own local legislatures.
44. (A) The specific gravity of sea water is more than that of river water. So less of sea water is needed to have the same weight as that of the ship. So the ship sinks less.
45. (B) A physical change is a temporary change which is reversible There may be a change in the state but not in the composition of the substance i.e. no new substance is formed. When potassium chlorate is heated, it decomposes to give two entirely different products - solid potassium chloride and oxygen gas. Decomposition of potassium chlorate is therefore a chemical change.
47. (A) The chloroplast contains the wonder green pigment chlorophyll which is able to trap solar energy and use it for synthesis of food.
48. (C) Acid rain refers to rainfall with pH less than 5.6. This rain has an adverse effect on flora and fauna on which it falls. Primary causes of acid rain are sulfur dioxide and nitrogen oxides.
50. (D) Genes: The DNA is the genetic material. The DNA is made of several nucleotides. A nucleotide means, one nitrogenous base one sugar molecule and a phosphate molecule. These nucleotides occur in sequences and several nucleotides form one gene.

51. (D) $3\frac{4}{5} \div \left(5\frac{3}{7} \div \frac{2}{7} \text{ of } 1\frac{1}{4}\right) \times \left[\left(2\frac{3}{4} \div 4\frac{2}{5}\right)\right] \text{ of } 1\frac{3}{5}$

$$= \frac{19}{5} \div \left(\frac{38}{7} \div \frac{2}{7} \text{ of } \frac{5}{4}\right) \times \left[\left(\frac{11}{4} \div \frac{22}{5}\right)\right] \text{ of } \frac{8}{5}$$

$$= \frac{19}{5} \div \left(\frac{38}{7} \div \frac{5}{14}\right) \times \left[\left(\frac{11}{4} \times \frac{5}{22}\right)\right] \text{ of } \frac{8}{5}$$

$$= \frac{19}{5} \div \left(\frac{38}{7} \times \frac{14}{5}\right) \times \left[\left(\frac{5}{8} \times \frac{8}{5}\right)\right]$$

$$= \frac{19}{5} \div \frac{76}{5} \times 1$$

$$= \frac{19}{5} \times \frac{5}{76} = \frac{1}{4}$$

52. (B) Let the marks of each questions be x and total number of questions be y
ATQ,

$$(8 \times x) \times \frac{50}{100} = (xy) \times \frac{40}{100}$$

$$40x = 4xy$$

$$\therefore y = 10$$

Number of questions in the test = 10

53. (A) As much time A travelled 1 km at the same time distance travelled by B = $1000 - (90 + 70)$
= $1000 - 160 = 840$ m

As we know that the if time is constant then the ratio of distance is equal to the ratio of speed.

So, ratio of speed of A and B = $(1000 : 840) = 25 : 21$

54. (A) Let the efficiency of B be x works/day

Efficiency of A = $3x$ works/day

Efficiency of A and B together = $(x + 3x)$ works/day = $4x$ works/day

Efficiency of C = $\left(\frac{4x}{4}\right)$ works / day = x works / day

Ratio of share of A, B and C in earning = Ratio of efficiency of A, B and C

$$= 3x : x : x = 3 : 1 : 1$$

55. (A) Average rainfall of first four days = 0.80 inch

Sum of rainfall of first four days = $0.80 \times 4 = 3.20$ inch

Average rainfall of first six days = 1 inch

Sum of rainfall of first six days = $(1 \times 6) = 6$ inch

Sum of rainfall of fifth and sixth days = $(6 - 3.20)$ inches = 2.8 inches

Rainfall of sixth day = $2.8 \times \frac{3}{3+4} = 1.2$ inches

56. (D) We take, number = 49

Reverse of number = $94 = 49 \times 1 + 45$

Remainder = 45

57. (B) We know that each face of cube is a square.

Perimeter of square face = 32 cm

Side of cube = $\frac{\text{Perimeter}}{4} = \frac{32 \text{ cm}}{4} = 8 \text{ cm}$

Volume of cube = $(\text{side})^3 = (8 \text{ cm})^3 = 512 \text{ cm}^3$

58. (C) Put $\theta = 0^\circ$

$$x \cos \theta - \sin \theta = 1$$

$$x \cos 0^\circ - \sin 0^\circ = 1$$

$$x = 1$$

Put the value θ and x in $x^2 + (1 + x^2)\sin \theta$

$$(1)^2 + [1 + (1)^2]\sin 0^\circ = 1 + 0 = 1$$

59. (D) $3 \sin\theta = 2\cos^2\theta$
 $3 \sin\theta = 2(1 - \sin^2\theta) \quad [\because \cos^2\theta + \sin^2\theta = 1]$
 $2\sin^2\theta + 3 \sin\theta - 2 = 0$
 $2 \sin^2\theta + 4\sin\theta - \sin\theta - 2 = 0$
 $2 \sin\theta(\sin\theta + 2) - 1(\sin\theta + 2) = 0$
 $(2 \sin\theta - 1)(\sin\theta + 2) = 0$

$$\sin\theta = \frac{1}{2} \text{ or } -2 \text{ (-2 is not possible)}$$

$$\sin\theta = \frac{1}{2}$$

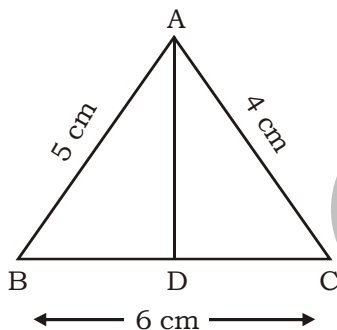
$$\sin\theta = \sin 30^\circ$$

$$\therefore \theta = 30^\circ$$

$$\tan^2\theta + \sec^2\theta - \operatorname{cosec}^2\theta = \tan^2 30^\circ + \sec^2 30^\circ - \operatorname{cosec}^2 30^\circ$$

$$= \left(\frac{1}{\sqrt{3}}\right)^2 + \left(\frac{2}{\sqrt{3}}\right)^2 - (2)^2 = \left(\frac{1}{3} + \frac{4}{3} - 4\right) = \frac{-7}{3}$$

60. (C)



Let $BD = x$ cm

$CD = (6 - x)$ cm

We know that from angle bisector theorem,

$$\frac{AB}{BD} = \frac{AC}{CD}$$

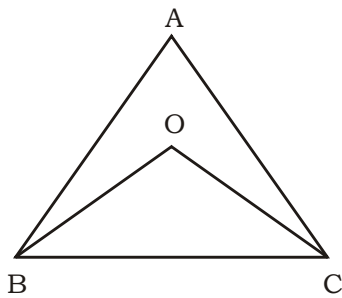
$$\frac{5}{x} = \frac{4}{6 - x}$$

$$30 - 5x = 4x$$

$$9x = 30$$

$$x = \frac{30}{9} = \frac{10}{3} = 3\frac{1}{3} \text{ cm}$$

61. (A)



We know that,

$$\angle BOC = 90^\circ + \frac{\angle A}{2}$$

$$118^\circ = 90^\circ + \frac{\angle A}{2}$$

$$28^\circ = \frac{\angle A}{2}$$

$$\angle A = (28^\circ \times 2) = 56^\circ$$

62. (C) We know that,

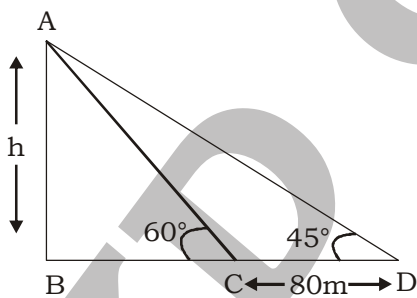
Area of Δ = inradius \times semi-perimeter

$$30 \text{ cm}^2 = 6 \times \frac{\text{perimeter}}{2}$$

$$30 \text{ cm}^2 = 3 \times \text{perimeter}$$

$$\text{Perimeter} = \frac{30}{3} \text{ cm} = 10 \text{ cm}$$

63. (B)



Let the height of tower be h m

In ΔABC ,

$$\tan 60^\circ = \frac{AB}{BC}$$

$$\sqrt{3} = \frac{h}{BC}$$

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

In $\triangle ABD$,

$$\tan 45^\circ = \frac{AB}{BD}$$

$$1 = \frac{h}{\frac{h}{\sqrt{3}} + 80}$$

$$\frac{h}{\sqrt{3}} + 80 = h$$

$$h - \frac{h}{\sqrt{3}} = 80$$

$$h \left(\frac{\sqrt{3} - 1}{\sqrt{3}} \right) = 80$$

$$h = \frac{80\sqrt{3}}{(\sqrt{3} - 1)} = \frac{80\sqrt{3}(\sqrt{3} + 1)}{3 - 1}$$

$$= 120 + 40\sqrt{3} = 40(3 + \sqrt{3})\text{m}$$

64. (D) Factors of 50 are 1, 2, 5, 10, 25 and 50

Marbles in the 50th box will be kept by 1st, 2nd, 5th, 10th, 25th and 50th person.

So, the total number of marbles = $(1 + 2 + 5 + 10 + 25 + 50) = 93$

65. (D) $x^2 - y^2 = 56$

$$(x + y)(x - y) = 56$$

$$(x - y) = 7 \quad \dots\dots(I)$$

$$x + y = 8 \quad \dots\dots(II)$$

Adding equation (I) and (II) we get,

$$x + y = 8$$

$$x - y = 7$$

$$\hline 2x = 15$$

$$x = 7.5$$

Put the value of x in equation (II),

$$y = 8 - 7.5 = 0.5$$

Now, average of 3x and 2y.

$$\frac{3 \times 7.5 + 2 \times 0.5}{5} = \frac{22.5 + 1}{5} = \frac{23.5}{5} = 4.7$$

66. (A) Total production of TVS motorcycles during 2010 to 2013 = $28 + 30 + 23 + 25 = 106$ thousand

Total production of BMW motorcycles during 2010, 2011 and 2014

= $15 + 18 + 20 = 53$ thousand

$$\text{Required more percentage} = \frac{106 - 53}{53} \times 100 = 100\%$$

67. (C) Total production of motor cycles in 2012 = 53 + 37 + 35 + 23 + 12 = 160 thousand

$$\text{Required angle} = \frac{360}{160} \times 12 = 27^\circ$$

68. (B) Total production of Bajaj in 2010 = 45

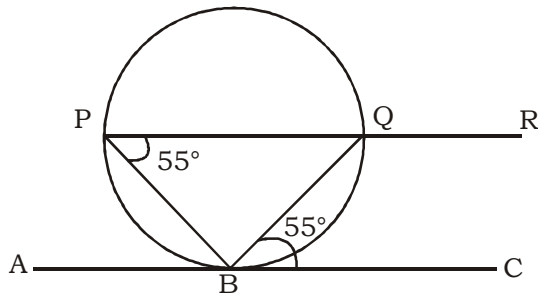
Total production of Honda in 2011 = 45

Total production of TVS in 2011 and 2013 = 30 + 25 = 55

Total production of Bajaj in 2014 = 45

Required Ratio = (45 + 45) : (55 + 45) = 90 : 100 = 9 : 10

69. (B)



$\angle QBC = \angle QPB$ (By alternate segment theorem)

$$\angle QPB = 55^\circ$$

$$\angle QBC = \angle BQR = 180^\circ$$

$$\angle BQR = 180^\circ - 55^\circ = 125^\circ$$

$$\angle PQB = 180^\circ - 125^\circ = 55^\circ$$

Then,

$$\angle PBQ = 180^\circ - 55^\circ - 55^\circ = 70^\circ$$

70. (C) Let the C.P of each articles be ₹ 100 and number of articles sold by shopkeeper be 24.

Marked price of each articles = 100 + 40% of 100 = ₹ 140

Number of article sold at 15% discount = $\frac{1}{3}$ of 24 = 8

S.P of each article at 15% discount = 140 - 15% of 140 = ₹(140 - 21) = ₹ 119

Number of article sold at 20% discount = $\frac{1}{4}$ of 24 = 6

S.P of each article at 20% discount = ₹ 140 - 20% of ₹ 140 = ₹ (140 - 28) = ₹ 112

Number of article sold at 25% discount = 24 - 14 = 10

S.P of article at 25% discount = 140 - 25% of 140 = ₹ 105

Total C.P = ₹ 100 × 24 = ₹ 2400

Total S.P = ₹ 119 × 8 + ₹ 112 × 6 + ₹ 105 × 10 = (952 + 672 + 1050) = ₹ 2674

Profit = SP - CP = ₹ 2674 - ₹ 2400 = ₹ 274

$$\text{Profit \%} = \left(\frac{274}{2400} \times 100 \right) \% = 11.4\%$$

71. (D) Let the maximum marks be x.

ATQ,

$$30\% \text{ of } x + 10 = 40\% \text{ of } x$$

$$\frac{3x}{10} + 10 = \frac{4x}{10}$$

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

$$\therefore x = 100$$

72. (D) Simple interest for 2 years = ₹ 900

$$\text{Simple interest for 1 year} = \frac{900}{2} = ₹ 450$$

$$\text{Compound interest for 2 years} = ₹ 954$$

$$\text{Difference between CI and SI for 2 years} = 954 - 900 = ₹ 54$$

$$\text{Rate of interest} = \frac{54 \times 100}{450 \times 1} = 12\% \text{ p.a}$$

$$\text{Principal} = \frac{\text{SI} \times 100}{R \times T} = \frac{900 \times 100}{12 \times 2} = ₹ 3750$$

73. (A) Let $\sqrt{42 + \sqrt{42 + \sqrt{42 + \dots \infty}}} = x$

$$\sqrt{42 + x} = x$$

$$42 + x = x^2$$

$$x^2 - x - 42 = 0$$

$$x^2 - 7x + 6x - 42 = 0$$

$$x(x - 7) + 6(x - 7) = 0$$

$$(x - 7)(x + 6) = 0$$

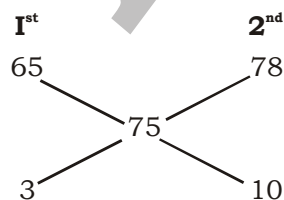
$$x = 7 \text{ or } -6$$

$$\therefore x = 7$$

74. (A) $\frac{a^2}{bc} + \frac{b^2}{ac} + \frac{c^2}{ab}$

$$= \frac{a^3 + b^3 + c^3}{abc} = \frac{3abc}{abc} = 3 \quad (\because a + b + c = 0, \text{ then } a^3 + b^3 + c^3 = 3abc)$$

75. (A)	zinc	:	copper	zinc	:	copper
I st	(1)	:	$2 \Rightarrow 3$	$(\times 5 \times 13)$:	65
II nd	(2)	:	$3 \Rightarrow 5$	$(\times 3 \times 13)$:	78
III rd	(5)	:	$8 \Rightarrow 13$	$(\times 3 \times 5)$:	75



Ratio between first alloy and second alloy = 3 : 10

MEANINGS IN ALPHABETICAL ORDER

Adaptable	able to adjust to new conditions	अनुकूलन के योग्य
Altruistic	showing a disinterested and selfless concern for the well-being of others	परोपकारी
Antiseptic	relating to substances that prevent the growth of disease-causing microorganisms	रोगाणुरोधक
Applause	approval or praise expressed by clapping	वाहवाही, शाबाशी
Ascription	the attribution of something to a cause; Attribution	किसी घटना से किसी चीज का रिश्ता जोड़ना
Assessment	the evaluation or estimation of something	मूल्यांकन
Cauterize	burn the skin or flesh of (a wound) with a heated instrument or caustic substance, typically to stop bleeding or prevent the wound from becoming infected	दागना
Consume	eat, drink, or ingest (food or drink)	उपभोग करना
Contemporary	living or occurring at the same time	समकालीन
Incredible	impossible to believe	अविश्वसनीय
Knack	an acquired or natural skill at performing a task	कौशल
Privilege	a special right, advantage, or immunity granted or available only to a particular person or group	विशेषाधिकार
Rationale	a set of reasons or a logical basis for a course of action or a particular belief	औचित्य
Succession	the action or process of inheriting a title, office, property, etc.	उत्तराधिकारी
Tirade	a long, angry speech of criticism or accusation	निंदा
Victorious	having won	विजयी

SSC MOCK TEST - 251 (ANSWER KEY)

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

76. (B) Many a takes singular noun and is followed by a singular verb.
77. (C) 'at midnight' is a correct phrase.
90. (A) The correct spelling of 'Assesment' is 'Assessment'.
91. (C) The correct spelling of 'Previledge' is 'Privilege'.

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