SSC MOCK TEST - 433 (SOLUTION)

1. (1) As, $2925 \Rightarrow (2 + 9 + 2 + 5)^2 = 324$

   Similarly, $2648 \Rightarrow (2 + 6 + 4 + 8)^2 = 400$

2. (2) Retina is the part of Eye and Pons is the part of brain, while Cochlea is the part of Ear.

3. (4) Start, Begin and Initiative have a similar meaning: to start something. Hurdle means an obstacle or a barrier.

4. (3) (1) $8 + 3 = 11 \Rightarrow 11^2 = 121$ (2) $5 + 8 = 13 \Rightarrow 13^2 = 169$

   (3) $4 + 9 = 13 \Rightarrow 13^2 = 169 \neq 144$ (4) $2 + 5 = 7 \Rightarrow 7^2 = 49$

5. (3) (1) C Y U Q -4 -4 -4 (2) T P L H -4 -4 -4

   (3) N J F A -4 -4 -5 (4) F B X T -4 -4 -4

6. (3) $37 \times 1 + 2 = 39$

   $39 \times 2 + 2 = \mathbf{80}$

   $80 \times 3 + 2 = 242$

   $242 \times 4 + 2 = 970$

   $970 \times 5 + 2 = 4852$

7. (2)

   R A D S E C T I B U O A **V U Z**

   with -1 steps between groups and $+1$ (Vowel) relations.

8. (2) The alphabetical position of S is 19.

   The reverse alphabetical position of L is 21.

   So, $19 \times 21 = 399$

   Similarly,

   Alphabetical position of J is 10.

   The reverse alphabetical position of P is 61.

   So, $10 \times 61 = 610$

9. (4)

   Hence, Ankur is Ayushman father or uncle.

10. (4) As, SPEAKER $\Rightarrow 19 + 16 + 5 + 1 + 11 + 5 + 18 = 75 \Rightarrow 7 - 5 = 2$

    And, PAINT $\Rightarrow 16 + 1 + 9 + 14 + 20 = 60 \Rightarrow 6 - 0 = 6$

    Similarly, SATISFY $\Rightarrow 19 + 1 + 20 + 9 + 19 + 6 + 25 = 99 \Rightarrow 9 - 9 = 0$
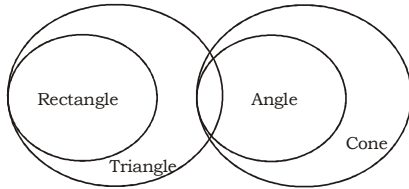
11. (1)   As, $63 \Rightarrow (6 + 3) \times (6 – 3) = 27$
$27 \Rightarrow (2 + 7) \times (2 – 7) = – 45$
Similarly, $81 \Rightarrow (8 + 1) \times (8 – 1) = 63$
$63 \Rightarrow (6 + 3) \times (6 – 3) = 27$

12. (2)

I. False   II. False   III. True
Hence, only conclusions III follows.

13. (4)   14. (1)

15. (4) $8 * 15 * 62 * 154 * 11 = 23$
After put the sign
$8 \times 15 – 62 + 154 \div 11 = 23$
$120 – 62 + 14 = 23$
$134 – 62 = 72$
$72 = 72$

16. (2)

17. (3)   As, $[(22 + 3) \times 22] \div 2 = 275$
And, $[(18 + 3) \times 18] \div 2 = $ **189**
Similarly, $[(11 + 3) \times 11] \div 2 = 77$

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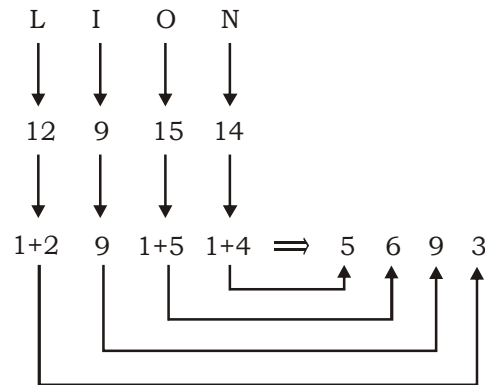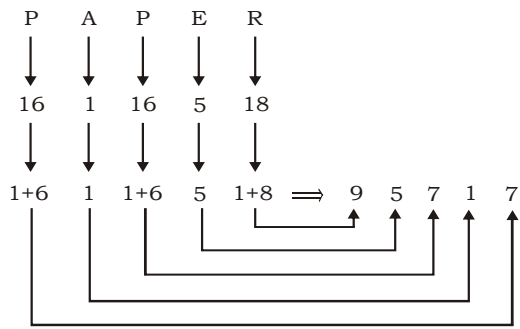
Similarly,
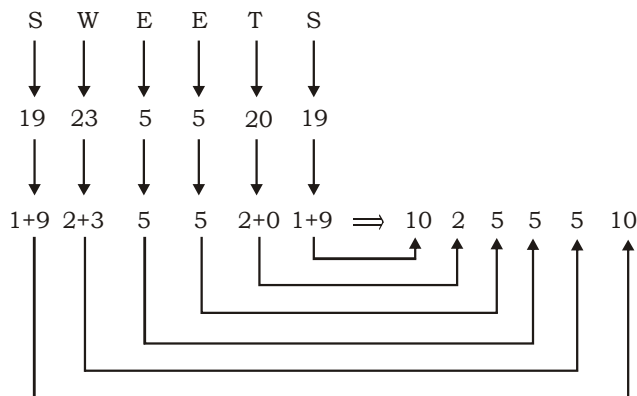
19. (3) Clock gain 3 minutes in 1 hour i.e. it shows 63 min when right figure should be 60 minutes. From 12 pm to 10:30 pm it shows 630 minutes, but actually it should indicate 600 minutes i.e. 10:00 pm.

20. (4)
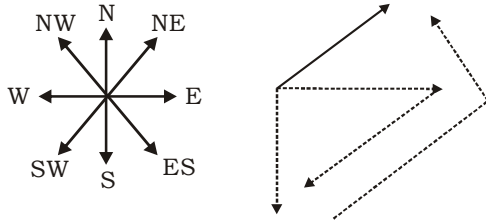
Thus, he is facing North East.

21. (3) 2. Dream → 1. Dreamlover → 4. Dreamset → 5. Dream time → 3. Dreamy

22. (1)   23. (4)

24. (3) **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**

25. (3)

26. (3) Chamba Rumal belongs to Himachal Pradesh.

27. (3) Sangeet Natak Akademi was established in 1953, it was inaugurated by Dr. Rajendra Prasad, the then President of India.

28. (2) Marco polo voyage to india is related to italy.

29. (1) The Kailash Nath Temple at Ellora was built by Rashtrakuta ruler Krishna I. This temple is built in the Dravidian style.

30. (2) The editor of The Tribune was Dyal Singh Majithia, its publication was started from Lahore in the year 1888.

31. (4) Satyashodhak Samaj was founded by Jyotiba Phule in Pune in 1873.

32. (2) Karakoram is called the backbone of high Asia, it is a mountain range of Trans Himalaya.

33. (1) Kangto mountain peak is located in Arunachal Pradesh.

34. (1) Markha Valley is related to Ladakh, it provides route to Hemis National Park.

35. (1) India has delivered two Dornier-228 aircraft to Guyana as part of a Line of Credit, marking a new phase in their partnership. The Indian Air Force dispatched a team to Guyana for the delivery.

36. (1) Sphygmomanometer is used to measure blood pressure while barometer is used to measure atmospheric pressure.

37. (2) Hydrogen bomb is based on nuclear fusion which is about 1000 times more powerful than atomic bomb.

38. (2) The telescope was built by Galileo in 1609.

39. (2) Gastric juice is acidic in nature due to its pH value being 2. It contains digestive enzymes like pepsin and renin.

40. (1) The Estimates Committee is the largest parliamentary committee with a total of 30 members, all of whom are Lok Sabha members, while the Public Accounts Committee consists of 22 members, including 15 Lok Sabha members and 7 Rajya Sabha members.

41. (1) There were a total of 14 languages in the Eighth Schedule of the original Constitution of India, while at present a total of 22 languages are included.

42. (4) Special provisions have been made in respect of Nagaland under Article 371A of the Constitution while certain special provisions have been made in respect of Maharashtra and Gujarat under Article 371.

43. (3) Under the Directive Principles of State Policy, provision has been made in Article 51 for promotion of international peace and security.

44. (2) National Sports Day is celebrated on 29 August.

45. (2) Project Tiger was started in the year 1973.

46. (2) Mirabai Chanu, Tokyo Olympics medallist, secures her spot at the Paris Olympics, making history as the sole Indian weightlifter to qualify. At the IWF World Cup in Phuket, Thailand, the 29-year-old Olympic silver medalist finished third in Group B of women's 49kg, earning 11th place overall. After a six-month injury lay-off, Chanu lifted a total of 184kg at the event, solidifying her berth for the 2024 Paris Games.

47. (1) **Ropar:** Ropar is situated in Punjab. The evidence of burying a dog below the human burial is very interesting. This was excavated by Yojna Dutta Sharma In 1953-54. Kalibangan: Kalibangan is situated in Ganganagar district of Rajasthan. This was excavated by A Ghosh in 1953 and termed it as a Sothi-Culture.

   Dholavira: It is situated in Gujarat in Kachcha district. It was discovered by J P Joshi in 1967-68 and excavation carried out by R S Bisht in 1990-91. It is the latest and one of the two largest Harappan settlements in India, the other being Rakhigarhi in Haryana. The other Harappan towns were divided into two parts - Citadel and Lower Town, but Dholavira was divided into three principal divisions, two of which were strongly protected by rectangular fortification.

   Banawali: Banawali is situated in Haryana and it was excavated by R S Bisht in 1973. Like Kalibangan, Amri, Kot Diji and Harappa, Banawali also saw two cultural phases - pre-Harappan and Harappan. Here we find large quantity of barley, sesamum and mustard.

48. (1) Council for the Advancement of People's Action and Rural Technology (CAPART) is an autonomous body under the Ministry of Rural Development Government of India, set up to address specific problems relating to development in the rural areas.

50. (2) South Korea's KSTAR fusion reactor that is also called as Korean artificial sun, operating at the Korea Institute of Fusion Energy, achieved a breakthrough by sustaining plasma at 100 million degrees Celsius for 48 seconds, setting a new world record.

51. (1)
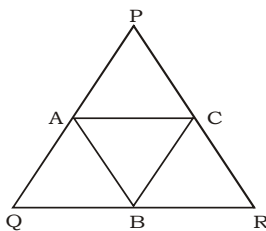
PQR is an equilateral triangle and A, B and C are the mid-points of side PQ, QR and PR respectively.

Side of triangle PQR = 12 cm

We know that,

$$ar(\Delta PAC) = ar(\Delta BCR)$$

$$ar(\Delta AQB) = ar(\Delta ABC)$$

$\therefore$ Area of $\Delta ABC = \dfrac{1}{4} \times ar.(\Delta PQR)$

$$= \dfrac{1}{4} \times \dfrac{\sqrt{3}}{4} \times (12)^2 \quad = \dfrac{1}{4} \times \dfrac{\sqrt{3}}{4} \times 144 = 9\sqrt{3}\, cm^2$$

52. (3) $A + B + C = \pi$

$$\frac{A + B}{2} = \frac{\pi}{2} - \frac{C}{2}$$

$$\sin\left(\frac{A + B}{2}\right) = \sin\left(\frac{\pi}{2} - \frac{C}{2}\right) = \cos\frac{C}{2}$$

Similarly,

$$\cos\left(\frac{A + B}{2}\right) = \sin\frac{C}{2}$$

$$\cot\left(\frac{A + B}{2}\right) = \tan\frac{C}{2}$$

$$\tan\left(\frac{A + B}{2}\right) = \cot\frac{C}{2}$$

53. (1) $x = \dfrac{\left(\sqrt{2} + 1\right)}{\left(\sqrt{2} - 1\right)} = \dfrac{\sqrt{2} + 1}{\sqrt{2} - 1} \times \dfrac{\sqrt{2} + 1}{\sqrt{2} + 1}$

$$x = \frac{2 + 1 + 2\sqrt{2}}{2 - 1} = 3 + 2\sqrt{2}$$

$$\frac{1}{x} = \frac{1}{3 + 2\sqrt{2}} = \frac{1}{3 + 2\sqrt{2}} \times \frac{3 - 2\sqrt{2}}{3 - 2\sqrt{2}}$$

$$\frac{1}{x} = \frac{3 - 2\sqrt{2}}{9 - 8} = 3 + 2\sqrt{2}$$

$$x + \frac{1}{x} = 3 + 2\sqrt{2} + 3 - 2\sqrt{2}$$

$$x + \frac{1}{x} = 6$$

$$x^2 + \frac{1}{x^2} + 2 = 36$$

$$x^2 + \frac{1}{x^2} = 34$$

$$\frac{x^5 + x^4 + x^2 + x}{x^3} = x^2 + x + \frac{1}{x} + \frac{1}{x^2}$$

$$= x^2 + \frac{1}{x^2} + x + \frac{1}{x} = 36 + 6 = 40$$

54. (2) Volume $= \frac{1}{3}\pi r^2 h$ = 660 cm²

r = 12 cm

Radius $= \frac{12}{2}$ = 6 cm

$\frac{1}{3} \times \frac{22}{7} 6^2 \times h = 660$

$h = \frac{35}{2} cm$

Slant height = $\sqrt{h^2 + r^2} = \sqrt{17.5^2 + 6^2}$

$l = \frac{37}{2} cm$

Total S.A. = $\pi r^2 + \pi r l = \pi \times 6^2 + \pi \times 6 \times \frac{37}{2}$

$= \pi \times 6 \left(6 + \frac{37}{2} \right)$ = 462 cm²

55. (3) Let us assume that the average of 100 numbers be 36.

75% of 100 = 75

If we assume that the all the numbers are 36.

ATQ,

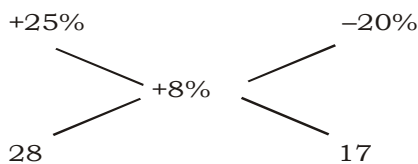75% of Number is increased by 6

New number = 36 + 6 = 42

Also given that

25% numbers are decreased by 9

36 – 9 = 27

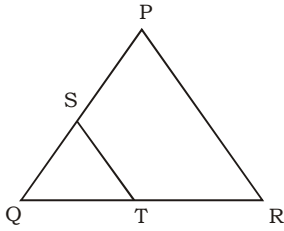∴ New average = $\frac{(42 \times 75) + (27 \times 25)}{100} = \frac{153}{4} = 38.25$

56. (2) By alligation method,

+25%   −20%

+8%

28   17

Ratio = 28 : 17

∴ Part of rice sold at 20% loss = $\frac{1350}{28 + 17} \times 17 = \frac{1350}{45} \times 17$ = 510 kg

57. (1)

ST $\parallel$ PR

$\Delta PQR \sim \Delta QST$,

$\dfrac{PQ}{QS} = \dfrac{QR}{QT}$

$\dfrac{PQ}{QS} - 1 = \dfrac{QR}{QT} - 1$

$\dfrac{PQ - QS}{QS} = \dfrac{QR - QT}{QT}$

$\dfrac{PS}{QS} = \dfrac{RT}{QT}$

$\dfrac{4}{PQ - PS} = \dfrac{RT}{QT}$

$\dfrac{4}{10 - 4} = \dfrac{RT}{QT}$

$\dfrac{4}{6} = \dfrac{RT}{QT}$

$\dfrac{2}{3} = \dfrac{RT}{QT}$

$\therefore$ QT : RT = 3 : 2

58. (2)   Area of circle = πr^2

$\pi r^2 = 5544$

$r^2 = \dfrac{5544}{22} \times 7$

$r^2 = 1764$

r = 42 cm

Perimeter of circle = $2\pi r = 2 \times \dfrac{22}{7} \times 42 = 264$ cm

Perimeter of rectangle = $\dfrac{264}{2}$ = 132 cm

2(l + b) = 132

50 + b = 66

b = 66 – 50 = 16 cm

$\therefore$ Area of rectangle = 50 × 16 = 800 cm^2

59. (1) Let the investment of C is x months.

Ratio of annual investment of A, B and C = 25000 × 12 : 30000 × 12 : 40000 × x

= 300 : 360 : 40x = 15 : 18 : 2x

Share of C in the annual profit = $= \dfrac{x}{33 + 2x} \times 260000 = 20000$

$\dfrac{x}{33 + 2x} = \dfrac{1}{13}$

13x = 33 + 2x

11x = 33

x = 3

∴ Required month = 3 months

60. (1) $\dfrac{1 + \dfrac{1}{7\frac{3}{5}}}{2 + \dfrac{1}{3 + \dfrac{1}{1 + \frac{1}{4}}}} \div 0.5 \quad = \dfrac{1 + \dfrac{5}{38}}{2 + \dfrac{1}{3 + \frac{4}{5}}} \div 0.5$

$= \dfrac{\dfrac{43}{38}}{2 + \dfrac{5}{19}} \div 0.5 \quad = \dfrac{\dfrac{43}{38}}{\dfrac{43}{19}} \div 0.5$

$= \dfrac{1}{2} \div 0.5 \quad = \dfrac{1}{2} \times \dfrac{1}{0.5} = 1$

61. (2) <u>Venn–Diagram of Failed Students</u>

History   Geography

30% (27%) 35%

Percentage of failed students = 30% + 35% – 27% = 38%

Percentage of passed students = 100% – 38% = 62%

Now, Let total number of students be *x*.

62% of *x* = 248

∴ $x = 248 \times \dfrac{100}{62} = 400$

62. (4) Only the option (4) gives the difference of votes between two candidates as 308.

63. (1) Let the first train be X which leaves Delhi at 10:00 AM and second train be Y which leaves Delhi at 10 : 30 AM.

Speed of train A = 110 km/hr

Speed of train B = 150 km/hr

Distance covered by train A in 30 minutes = $110 \times \dfrac{30}{60}$ = 55 km

At 10:30 AM, distance between both the trains = 55 km

Relative speed of train B = 150 – 110 = 40 km/hr

Time taken by train B to meet train A = $\dfrac{55}{40}$ hours = $\dfrac{11}{8}$ hours

Distance covered by train B in $\dfrac{11}{8}$ hours = $\dfrac{11}{8} \times 150$ = 206.25 km

∴ 206.25 km from Delhi will both the trains meet.

64. (3) Simple interest = ₹7650

Time = 3 years

Rate = 6%

$P = \dfrac{7650 \times 100}{3 \times 6}$ = ₹42500

Now, principal = ₹42500

Time = 3 years

Rate = 12%

$A = 42500\left(1 + \dfrac{12}{100}\right)^3$

$= 42500 \times \dfrac{112}{100} \times \dfrac{112}{100} \times \dfrac{112}{100}$ = ₹ 59709.44

∴ Compound interest = 59709.44 – 42500 = ₹17209.44

65. (4) Total work = 6 × 24 = 144

Work done by 6 persons in 4 days = 6 × 4 = 24

Remaining work = 144 – 24 = 120

Required number of persons to complete the work in next 12 days = $\dfrac{120}{12}$ = 10

∴ Number of persons should join the group = 10 – 6 = 4

66. (1) Required number of poles = $\dfrac{\text{Perimeter}}{\text{Distance between any two adjacent poles}}$ = $\dfrac{84}{1.5}$ = 50

67. (3) A makes one complete round of the circular track in $\dfrac{5}{5/2}$ = 2 hours

B in $\dfrac{5}{3}$ hours and C in $\dfrac{5}{2}$ hours,

That is after 2 hours A is at the starting point, B after $\dfrac{5}{3}$ hours and C after $\dfrac{5}{2}$ hours.

Hence the required time = LCM of 2, $\dfrac{5}{3}$ and $\dfrac{5}{2}$ hours = $\dfrac{\text{LCM of } 2,5,5}{\text{HCF of } 3,2}$ = $\dfrac{10}{1}$ = 10 hours

68. **(2)** Let the B invested capital for x months.

ATQ,

$$\frac{5 \times 8}{6 \times x} = \frac{5}{9}$$

∴ $x = \dfrac{5 \times 8 \times 9}{5 \times 6} = 12$ months

69. **(1)** Perimeter of the largest equilateral triangle = 3 × 24 = 72

Now, triangle formed by joining the mid-points will have perimeter half of that original triangle.

Hence, the required sum = 72 + 36 + 18 + ... upon infinite terms.

This is nothing but an infinite GP, with first term (1) = 72 and common (r) = $\dfrac{1}{2}$

Hence, the required sum = $\dfrac{a}{1-r}$ = $\left(\dfrac{75}{1 - \dfrac{1}{2}}\right)$ = 144 cm

70. **(4)** Let the length and breadth of rectangle be x and y m respectively.

According to the question,

2($x + y$) = 160

$x + y$ = $\dfrac{160}{2}$ = 80 ......(i)

Perimeter of square = 160 m

Side of square = $\dfrac{160}{4}$ = 40 m

Now,

Area of rectangle = xy

Area of square = 40 × 40 = 160 m^2

Then,

1600 – xy = 100

xy = 1600 – 100 = 1500 ......(ii)

Now,

$(x - y)^2 = (x + y)^2 - 4xy$

$(x - y)^2 = (80)^2 - 4 \times 1500$

$(x - y)^2 = 6400 - 6000 = 400$

$x - y = \sqrt{400}$ = 20 ......(iii)

From equations (i) and (iii),

2x = 100

∴ $x = \dfrac{100}{2}$ = 50 m

71. (4)   Type A   Type A
          614   695

$$\dfrac{767\times100}{118} = 650$$

          45   36

Ratio of A : B = 5 : 4

So, type B sugar will be (7 × 4) = 28 kg

72. (3)   Let the total sum be ₹ x.

Then, $\dfrac{2}{3}x \times \dfrac{12\times6}{100} + \dfrac{1}{3}x\left(1+\dfrac{10}{100}\right)^2 - \dfrac{x}{3} = ₹1650$

$\dfrac{48x}{100} + \dfrac{21x}{300} = 1650$

$\dfrac{144x+21x}{300} = 1650$

∴ $x = \dfrac{1650\times300}{165} = ₹\,3000$

73. (3)   Let the appeared candidates in the year 1992 = 500
          Qualified candidates in the year 1992 = 400

Number of qualified female candidate = $\dfrac{400}{8}\times3$ = 150

∴   Required% = $\left(\dfrac{150}{500}\times100\right)\%$ = 30%

74. (4)   Total distance covered by all the trucks = $\dfrac{2375}{5}$ = 475 km

75. (3)   Total number of teachers in Banglore = 3360 × $\dfrac{80}{100}$ = 2688

Number of female teachers = 2688 – 1800 = 888

Number of female teachers in the next year = 888 × $\dfrac{150}{100}$ = 1332

Number of female employees in Bangalore = $\dfrac{3360}{14}\times6$ = 1440

∴   Required % = $\left(\dfrac{1332}{1440}\times100\right)\%$ = 92.5 %

KD Campus

K D Campus Pvt. Ltd
1997, GROUND FLOOR OPPOSITE MUKHERJEE NAGAR POLICE STATION, OUTRAM LINES, GTB NAGAR, NEW DELHI – 09

MEANINGS IN ALPHABETICAL ORDER

Alimony	a husband's or wife's court-ordered provision for a spouse after separation or divorce	गुजारा–भत्ता
Aromatic	having a pleasant and distinctive smell	सुगन्धित
Assassin	a murderer of an important person in a surprise attack for political or religious reasons	हत्यारा
Befit	be appropriate for	के अनुकूल
Clad	clothed	कपड़े पहने हुए
Commensurate	corresponding in size or degree; in proportion	(किसी वस्तु) के अनुरूप
Condole	express sympathy for (someone)	दु:ख में हमदर्दी दिखाना
Console	comfort (someone) at a time of grief or disappointment	सांत्वना देना
Fable	a short story, typically with animals as characters, conveying a moral	जानवरों के किरदारों वाली एक नीति कथा
Fiasco	a complete failure	असफलता
Kleptomaniac	a person who cannot control their desire to steal things, usually because of a medical condition	वह व्यक्ति जो आमतौर पर अपनी चिकित्सीय स्थिति के कारण चीज़ों को चोरी करने की अपनी इच्छा को नियंत्रित नहीं कर सकता हो
Optometrist	A person who has a profession of examining the eyes for visual defects and prescribing corrective lenses	आँखों के लिए लेंस बनाने वाला
Pantheist	one who practice a doctrine that equates God with the forces and laws of the universe	वह ब्रह्मांड की शक्तियों और उसके को भगवान मानता है
Parsimony	extreme unwillingness to spend money or use resources	मितव्ययिता
Pedantic	showing much knowledge	पांडित्य पूर्ण
Perennial	lasting or existing for a long or apparently infinite time	चिरस्थायी
Philanderer	a man who readily or frequently enters into casual sexual relationships with women	स्त्री लोलुप
Rhetoric	the art of effective or persuasive speaking or writing	वाकपटु
Tart	sharp or acid in taste	खट्टा
Verbatim	in exactly the same words	शब्दश:

SSC MOCK TEST - 433 (ANSWER KEY)

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

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.

90. (B) The correct spelling of 'Optomatrist' is 'Optometrist'.

91. (B) The correct spelling of 'Perenial' is 'Perennial'.