SSC MOCK TEST - 427 (SOLUTION)

1. (2)   As 'Justice' is done in 'Court'. Similarly, 'Education' is imparted in 'School'.

2. (3)   As,   Similarly,

   PZQW ———— NXOU   FISK ———— **DGQI**
                 −2   −2

3. (4)   Except option (4), all others are the types of work and their related workfields.

4. (4)   (1) $32 \longrightarrow 41$ (2) $62 \longrightarrow 44$ (3) $46 \longrightarrow 28$ (4) $33 \longrightarrow 56$
             $3+2=5$ $4+1=5$ $6+2=8$ $4+4=8$ $4+6=10$ $2+8=10$ $3+3=6$ $5+6=11$

5. (3)   I > J > L > H > K

   Hence, K is at the lowest rank.

6. (3) $T \xrightarrow{-3} Q \xrightarrow{-4} M$, $U \xrightarrow{-3} R \xrightarrow{-4} N$, $V \xrightarrow{-3} S \xrightarrow{-4} O$,

   From option (3),

   $W \xrightarrow{-3} T \xrightarrow{-4} P$

7. (4)   23 × 3 = **69**

   69 + 6 = 75

   75 × 9 = 675

   675 + 12 = 687

8. (1)   As, 18 × 5 + (18 ÷ 3) = 96

   And, 48 × 5 + (48 ÷ 3) = 256

   Similarly, 24 × 5 + (24 ÷ 3) = **128**

9. (2)   d **f** o **o** d k **k** m / **d** f **o** o **d** k k **m** / d f o **o** d **k** k m

10. (4)   this (is) [fact] ⟶ ⟨cuz⟩ duz [ruz]

   [fact] (is) fictional ⟶ guz [ruz] ⟨cuz⟩

   doubt (is) clear ⟶ ⟨cuz⟩ kuz buz

   'This is fictional' is coded as 'duz guz cuz'.

11. (2)

12. (3)   (12 × 8) + (8 ÷ 2) = 100

   (18 × 6) + (6 ÷ 2) = 111

   (15 × 4) + (4 ÷ 2) = **62**

13. (4)   75 × 15 ÷ 8 + 13 – 34 = 19

   Change ÷ and ×,

   75 ÷ 15 × 8 + 13 – 34 = 19

   53 – 34 = 19

   19 = 19

14. (4) As,   And,

N O R M A L   28 30 36 26 2 24   T A I L O R   40 2 18 24 30 36

14×2   20×2
15×2   1×2
18×2   9×2
13×2   12×2
1×2   15×2
12×2   18×2

Similarly,

M E N T A L   26 10 28 40 2 24

13×2
5×2
14×2
20×2
1×2
12×2
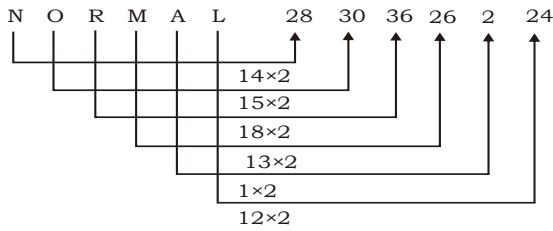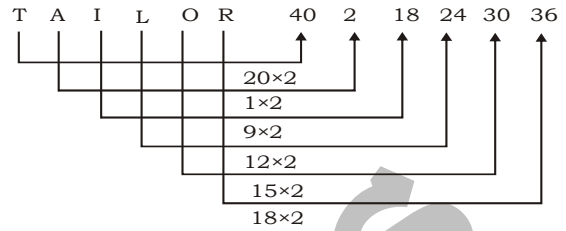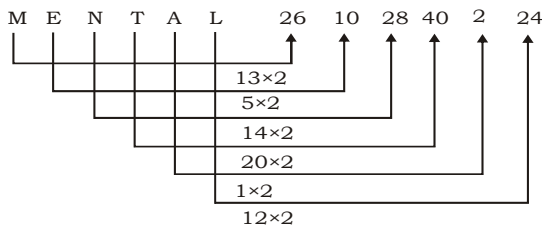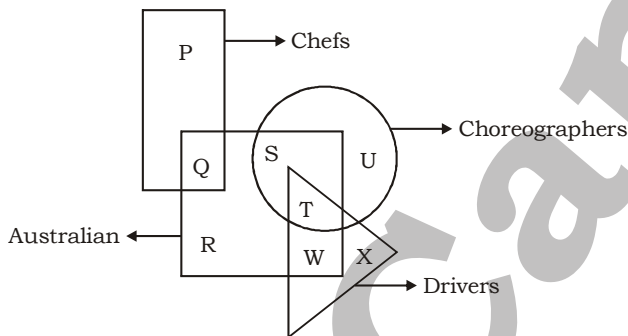
15. (1)   1. Core → 4. Surface → 2. Atmosphere → 5. Galaxy → 3. Universe
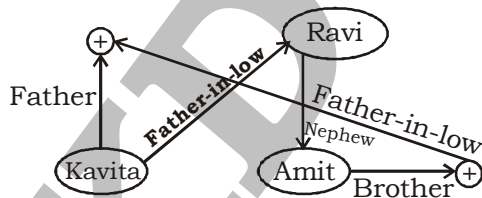
16. (2)

17. (3)   As, 26 + 25 = 51 – 41 = 10

Similarly, 38 + 18 = 56 – 46 = 110

18. (3)

19. (3)

I. Doubt   II. False   III. Doubt

Hence, either conclusion I or III follows.

20. (3)   Number of days from 27 February 2011 to 1 March 2012 = 368

∴   Required day = Sunday + 368 = Sunday + 52 + 4 = Thursday

21. (3)   22. (2)   23. (3)   24. (3)   25. (4)

27. (3) Philosopher's wool is an oxide of zinc with a white powder used as a pigment, cosmetics, glass, inks and zinc ointment.

28. (4) Bacteria, micro algae and fungi are most widely used in industries. Bacteria like Lactobacillus sp. is used in manufacturing of vinegar and alcohol by fermentation process.

29. (1) 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. (1) Deficiency of vitamin C causes Scurvy, a disease of gums. Deficiency of vitamin D causes Rickets, a disease of bones and Deficiency of Vitamin A causes night blindness, a disease of eyes.

32. (1) The Archaeological Survey of India established in 1861 is a department of the Government of India attached to the Ministry of Culture. ASI is responsible for archaeological studies and the preservation of archaeological heritage of the country in accordance with the various acts of the Indian Parliament.

33. (1) Antiseptic are antimicrobial substances that are applied to living tissue/skin to reduce the possibility of infection, sepsis, or putrefaction. Now phenyl being a phenol derivative possesses effective germicidal properties because phenol is germicidal in strong solution. Used in the form of a powder as an antiseptic baby powder, it has a pain killing effect as well. Example: TCP (Trichlorophenol).

34. (1) The Bor Tiger Reserve (BTR) in Maharashtra, declared a tiger reserve in July 2014, recently sought Rs 1 crore for wildlife safari initiatives in Bangdapur and Hingni forest ranges. It is India's smallest tiger reserve located in Wardha District. Situated amidst various Bengal Tiger habitats, it neighbors Pench, Nagzira Navegaon, Karhandla, Tadoba Andhari, Melghat, and Satpura reserves. The area boasts Dry Deciduous Forest vegetation and includes the Bor Dam drainage basin.

35. (1) Prime Minister Narendra Modi, with Sri Lankan President Ranil Wickremesinghe and Mauritian Prime Minister Pravind Jugnauth, inaugurated Unified Payment Interface (UPI) services in Sri Lanka and Mauritius, and RuPay card services in Mauritius via video conferencing.

36. (1) A solar eclipse occurs as the moon passes in front of the sun, resulting in the earth falling into the shadow of the moon.

37. (3) According to NHRC Act 1993, only a retired CJI can become chairman of NHRC, appointed by President on the recommendation of a committee comprising of PM, Speaker of Lok Sabha, Home Minister, Leader of Opposition of both Houses of Parliament and Deputy Chairman of Rajya Sabha.

39. (4) Housed within the Carbon Finance Unit of the World Bank, the Bio Carbon Fund is a public-private sector initiative mobilizing financing to help for development of projects that conserve carbon in forest and agroecosystems. It was created in 2004.

40. (4) The Good Governance Day (GGD) is observed every year in India to mark the birth anniversary of former Prime Minister Atal Bihari Vajpayee. The day was established to honour Prime Minister Vajpayee by fostering awareness among the Indian people of accountability in government. From December 25th, 2016, the Good Governance campaign will be undertaken for 100 days during which Ministers and Members of Parliament (MoP) will travel across the country and attend programmes highlighting the government's key initiatives. The effort of the government is to improve delivery systems, to promote digital transformation and take forward the connectivity revolution in all sectors.

41. (4) Nitroglycerine (NG) also known as nitroglycerine, trinitroglycerin, trinitroglycerine, 1, 2, 3 - trinitroxypropane and glyceryl trinitrate is a heavy, colourless, oily, explosive liquid obtained by nitrating glycerol. Alfred Nobel discovered that mixing nitroglycerin with diatomaceous earth would turn the liquid into a paste, called dynamite. An advantage of dynamite was that it could be cylinder-shaped for insertion into the drilling holes used for mining.

43. (1) Under Article 76, impeachment procedure of the Attorney-General is not provided. He shall hold office during the pleasure of the President. He must not be a member of either House of Parliament.

44. (4) Cotton is generally considered a rainfed crop. It is also grown in areas where assured irrigation is not available. Black soils can retain water which is very useful property for rainfed crops to grow. The texture of the soil is supportive for the growth of cotton. So black soils are more suitable for cotton to grow.

46. (2) The Part III of the Constitution of India gives a detailed description on a charter of rights called the fundamental Rights'. These fundamental rights guarantee civil freedom to all the citizens of India to allow them to live in peace and harmony. These are the basic rights that every Indian citizen has the right to enjoy, irrespective of their caste, creed and religion, place of birth, race, color or gender. These fundamental rights include Right to Equality, Rights to Freedom, Right to Freedom of Religion, Cultural and Education Rights, Right against Exploitation, Right to Constitutional Remedies, etc.

48. (2) Frequency modulation: It is a process in which the frequency of the carrier is varied in accordance with the instantaneous value of modulating voltage. In tele-communications 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.

50. (1) An Alaskan man recently became the first to die from Alaskapox, an orthopox virus discovered in 2015. It is DNA virus belonging to the same genus as smallpox, monkeypox, and cowpox, it primarily affects small mammals. Symptoms include skin lesions, swollen lymph nodes, and muscle pain, with mild illnesses usually resolving in a few weeks.

51. (2) Let the Initial amount of milk in the container is x litres.

ATQ,

$$\left(1 - \frac{5}{x}\right)^5 = \frac{32}{211 + 32} = \frac{32}{243} = \left(\frac{2}{3}\right)^5$$

$$1 - \frac{5}{x} = \frac{2}{3}$$

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

$x = 15$ litres

∴ Initial amount of milk in the container = 15 litres

52. (1) ATQ,

$5x \times 12 : 4x \times 4 + (4x + 1000) \times 8 : 3x \times 8 + (3x + 2000) \times 4 = 15 : 14 : 11$

$$\frac{5x \times 12}{4x \times 4 + (4x + 1000) \times 8} = \frac{15}{14}$$

$$\frac{4x \times 15}{16x + 32x + 8000} = \frac{15}{14}$$

$56x - 48x = 8000$

$x = 1000$

Investment of C at the beginning = 3 × 1000 = ₹3000

53. (1) $\sin37° \cos53° + \cos37° \sin53° - \dfrac{4\cos^2 37° - 7 + 4\cos^2 53°}{\tan^2 47° + 4 - \csc^2 43°}$

$= \sin^2 37° + \cos^2 37° - \dfrac{4\cos^2 37° + 4\sin^2 37° - 7}{4 - 1}$

$= 1 - \dfrac{4 - 7}{3} = 1 + \dfrac{3}{3} = 2$

54. (4) $\dfrac{a^2 + b^2}{c^2 + d^2} = \dfrac{ab}{cd} = \dfrac{2ab}{2cd}$ $\qquad$ [If $\dfrac{a}{c} = \dfrac{b}{d}$, then $\dfrac{a}{b} = \dfrac{c}{d}$]

$\dfrac{a^2 + b^2}{2ab} = \dfrac{c^2 + d^2}{2cd}$

On applying Componendo & dividendo

$\dfrac{a^2 + b^2 + 2ab}{a^2 + b^2 - 2ab} = \dfrac{c^2 + d^2 + 2cd}{c^2 + d^2 - 2cd}$

$\dfrac{(a+b)^2}{(a-b)^2} = \dfrac{(c+d)^2}{(c-d)^2}$

$\therefore \quad \dfrac{a+b}{a-b} = \pm \dfrac{c+d}{c-d}$

55. (2) Let the speed of train = x km/hr

ATQ,

$x \times \dfrac{40}{60} = (x - 10) \times \dfrac{45}{60}$

$\dfrac{2x}{3} = \dfrac{3x}{4} - \dfrac{15}{2}$

$\dfrac{3x}{4} - \dfrac{2x}{3} = \dfrac{15}{2}$

$\dfrac{9x - 8x}{12} = \dfrac{15}{2}$

$x = 90$ km/hr

$\therefore$ Distance between A and B = $90 \times \dfrac{40}{60}$ = 60 km

56. (1) Salary of all workers = 60 × number of workers

12 × 400 + (all workers – 12) × 56 = 60 × number of workers

12 × 400 + $(n - 12)$ × 56 = 60 × n $\quad$ (where n $\rightarrow$ number of all workers)

4800 – 672 = 60n – 56n

$\therefore \quad n = \dfrac{4128}{4} = 1032$

57. (2) $\left[\dfrac{1}{2}+\dfrac{1}{2}\left\{\dfrac{3}{4}-\dfrac{1}{2}\left(\dfrac{7}{8}-\dfrac{3}{4}\right)\right\}\right] = \left[\dfrac{1}{2}+\dfrac{1}{2}\left\{\dfrac{3}{4}-\dfrac{1}{2}\left(\dfrac{7-6}{8}\right)\right\}\right]$

$$= \left[\dfrac{1}{2}+\dfrac{1}{2}\left\{\dfrac{3}{4}-\dfrac{1}{16}\right\}\right] = \left[\dfrac{1}{2}+\dfrac{1}{2}\left\{\dfrac{12-1}{16}\right\}\right] = \left[\dfrac{1}{2}+\dfrac{1}{2}\times\dfrac{11}{16}\right]$$

$$= \left[\dfrac{1}{2}+\dfrac{11}{32}\right] = \left[\dfrac{16+11}{32}\right] = \dfrac{27}{32}$$

58. (3) Let the number be $= x$

ATQ,

$$\dfrac{3}{4}x-\dfrac{3}{14}x = 150$$
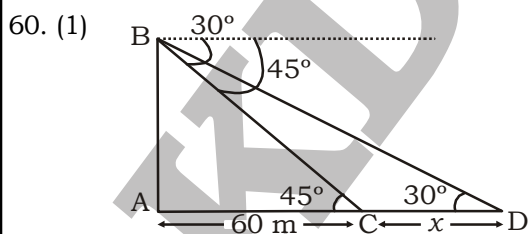
$$\dfrac{21x-6x}{28} = 150$$

$$\dfrac{15x}{28} = 150$$

$\therefore \qquad x = 150 \times \dfrac{28}{15} = 280$

59. (3) Work done by both the pipes in 4 min $= 4\left(\dfrac{1}{15}+\dfrac{1}{10}\right) = \dfrac{2}{3}$ work

When all the pipes working together, then work done $= \dfrac{1}{15}+\dfrac{1}{10}-\dfrac{1}{5} = \dfrac{-1}{30}$

$= \dfrac{-1}{30}$ part of th tank is emptied in 1 min

$\therefore \qquad \dfrac{2}{3}$ of the tank can be emptied in $\dfrac{2\times30}{3}$ = 20 minutes

60. (1)

Let height of the tower = AB

So, In $\triangle ABC$,

$\tan45° = \dfrac{AB}{AC}$

So, AB = 60 m

Also, In $\triangle ADB$

$$\tan 30° = \frac{60}{60 + x}$$

$$\frac{1}{\sqrt{3}} = \frac{60}{60 + x}$$

$$x = 60(\sqrt{3} - 1) = 60 \times (1.73 - 1)$$

$$x = 60 \times 0.73 = 43.8 \text{ m}$$

$\therefore$ Required Speed = $\dfrac{43.8}{5} \times \dfrac{18}{5}$ = 31.5 km/hr

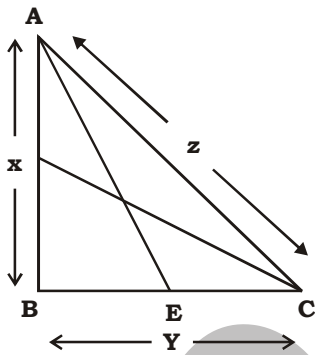61. (1) Amount remaining after

1 year = $4000\left(1 + \dfrac{7.5}{100}\right) - 1500 = ₹2800$

2 years = $2800\left(1 + \dfrac{7.5}{100}\right) - 1500 = ₹1510$

$\therefore$ 3 years = $1510\left(1 + \dfrac{7.5}{100}\right) - 1500 = ₹123.25$

62. (4)

Let AB = x,

Then, $AD = \dfrac{x}{2} = DB$

Let BC = Y

Then, $BE = EC = \dfrac{Y}{2}$

Here, AY = 7

DC = $4\sqrt{6}$

From $\triangle ABC$,

$$x^2 + \left(\frac{Y}{2}\right)^2 = 49 \qquad ......(1)$$

From ΔDBC,

$$\left(\frac{x}{2}\right)^2 + Y^2 = 96 \qquad ......(2)$$

Adding (1) and (2),

$$x^2 + \frac{y^2}{4} + \frac{x^2}{4} + Y^2 = 145$$

$$5x^2 + 5Y^2 = 580$$

$$x^2 + Y^2 = 116$$

Now, $x^2 + Y^2 = z^2$

$$z^2 = 116$$

$\therefore \quad z = 2\sqrt{29} = $ hypotenuse

63. (2) Let the length of the wire be h.

Radius = 0.1 mm = $\frac{1}{100}$ cm

According to problem,

$$\pi \times \frac{1}{100} \times \frac{1}{100} \times h = \frac{4}{3}\pi \times 3 \times 3 \times 3$$

$\therefore \quad$ h = 360000 cm

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

$(11)^2 = a^2 + b^2 + c^2 + 2(28)$

$a^2 + b^2 + c^2 = 121 - 56 = 65$

Now, $a^3 + b^3 + c^3 - 3abc = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca) = 11 \times (65 - 28)$

$= 11 \times 37 = 407$

65. (4) Let the maximum marks be x.

ATQ,

30% of x +10 = 40% of x

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

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

$\therefore \quad$ x = 100

66. (2) Number of sphere = $\dfrac{\text{Volume of bigger sphere}}{\text{Volume of smaller sphere}} = \dfrac{\frac{4}{3}\pi \times 8 \times 8 \times 8}{\frac{4}{3}\pi \times 4 \times 4 \times 4} = 8$

67. (4) Ratio of investment of A, B and C = $\frac{1}{4} : \frac{1}{3} : \frac{1}{6} = 3 : 4 : 2$

Let the investment of A, B and C be ₹ 3x, ₹ 4x and ₹ 2x respectively.

Ratio of profit = $\left(3x \times 4 + \frac{3x}{2} \times 8\right) : \left(4x \times 6 + \frac{4x}{3} \times 6\right) : (2x \times 12)$ = 24x : 32x : 24x = 3 : 4 : 3

Profit of A = $14000 \times \frac{3}{3+4+3}$ = ₹4200

Profit of B = $14000 \times \frac{4}{3+4+3}$ = ₹5600

Profit of C = $14000 \times \frac{3}{3+4+3}$ = ₹4200

68. (3) Let the sum be ₹x.

$S.I = \frac{P \times R \times T}{100} = \frac{x \times 4 \times 1}{100} = ₹\frac{x}{25}$

When interest is compounded half yearly

Rate = 6% p.a = $\frac{6}{2}$% half yearly = 3% half yearly

Time = 1 year = (1 × 2) half year = 2 half year

$C.I = P\left[\left(1 + \frac{R}{100}\right)^t - 1\right] = x\left[\left(1 + \frac{3}{100}\right)^2 - 1\right]$

$= x\left[\frac{10609}{10000} - 1\right] = ₹\frac{609x}{10000}$

ATQ,

$\frac{609x}{10000} - \frac{x}{25} = 104.50$

$\frac{209x}{10000} = 104.50$

∴ $x = \frac{10450 \times 100}{209}$ = ₹5000

69. (2) Let the x liters of water should be added.
In 30 litres mixture,

Quantity of milk = $30 \times \frac{7}{7+3} = 21$ litres

Quantity of water = (30 – 21) = 9 litres
ATQ,

$\frac{21}{9+x} = \frac{3}{7}$

147 = 27 + 3x

3x = 120

∴   x = 40 litres

70. (3)
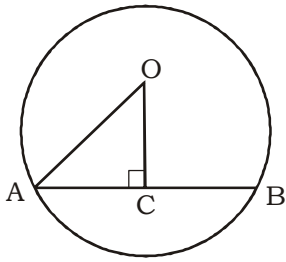
OC = 7 cm

OA = 25 cm (radius)

AB = chord

We know that perpendicular drawn from the centre bisects the chord.

In ΔOAC ,

$OA^2 = AC^2 + OC^2$ (Pythagoras theorem

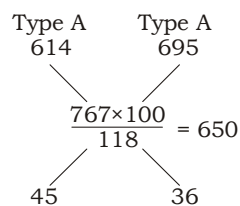$(25)^2 = AC^2 + (7)^2$

$\sqrt{625 - 49} = AC$

$AC = \sqrt{576} = 24$ cm

$\therefore$ AB = 2 × AC = 2 × 24 cm = 48 cm

71. (4)

Type A   Type A

614   695

$\dfrac{767 \times 100}{118} = 650$

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, $\dfrac{2}{3} x \times \dfrac{12 \times 6}{100} + \dfrac{1}{3} x \left(1 + \dfrac{10}{100}\right)^2 - \dfrac{x}{3}$ = ₹1650

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

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

$\therefore$ $x = \dfrac{1650 \times 300}{165}$ = ₹ 3000

73. (4) $\dfrac{I_Q}{E_Q}$ = 1.05

$\dfrac{I_P}{E_P}$ = 0.75

$\therefore$ Required% = $\dfrac{1.05}{0.75}$ × 100 = 140%

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

Number of female teachers = 2688 – 1800 = 888

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

Number of female employees in Bangalore = $\dfrac{3360}{14} \times 6$ = 1440

∴   Required % = $\left(\dfrac{1332}{1440} \times 100 \right)\%$ = 92.5%

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

MEANINGS IN ALPHABETICAL ORDER

Abated	(of something perceived as hostile, threatening, or negative) become less intense or widespread	कम करना
Absenteeism	the practice of regularly staying away from work or school without good reason	कार्य से अनुपस्थित होना
Ardent	enthusiastic or passionate	उत्साही
Arrogant	having or revealing an exaggerated sense of one's own importance or abilities	घमंडी
Astrophysics	the branch of astronomy concerned with the physical nature of stars and other celestial bodies, and the application of the laws and theories of physics to the interpretation of astronomical observations	खगोल भौतिकी
Candid	truthful and straightforward; frank	स्पष्टवादी
Cripple	cause severe and disabling damage to; deprive of the ability to function normally	अपंग
Dogmatism	the tendency to lay down principles as incontrovertibly true, without consideration of evidence or the opinions of others	स्वमताभिमान
Enthusiasm	intense and eager enjoyment, interest, or approval	जोश
Flatterer	a person who lavishes praise, often insincerely; a sycophant	चापलूस
Furious	extremely angry	आगबबूला
Grapple	engage in a close fight or struggle without weapons; wrestle	पकड़ना
Hypocrite	a person who indulges in hypocrisy	पाखंडी
Imperialism	a policy of extending a country's power and influence through diplomacy or military force	साम्राज्यवाद
Monotony	lack of variety and interest; tedious repetition and routine	एकरसता
Scruple	a feeling of doubt or hesitation with regard to the morality or propriety of a course of action	संदेह
Stipple	(in drawing, painting, and engraving) mark (a surface) with numerous small dots or specks	चित्रित वस्तु को खोदना
Tranquillity	the quality or state of being tranquil; calm	शांति

SSC MOCK TEST - 427 (ANSWER KEY)

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

76. (2) Replace 'good' by 'well'. we need an adverb 'well' to qualify verb 'performed'.

77. (1) Change 'to do not calculate' into 'not to calculate', as we need a subject here.

86. (2) 'When' shows that the action was in progress in the past at that particular time, hence it should be in Past Continuous Tense.

87. (3) 'Not only..... but also' takes similar phrase or words.