SSC MOCK TEST – 147 (SOLUTION)
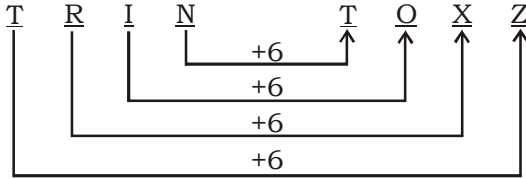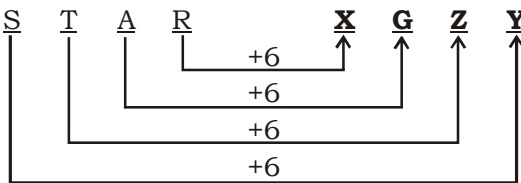
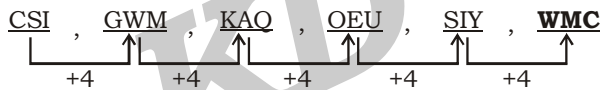1. (D) As, Visitors are welcomed.
Similarly, Criminals are **prosecuted**.

2. (A) As,

T R I N   T O X Z
+6, +6, +6, +6
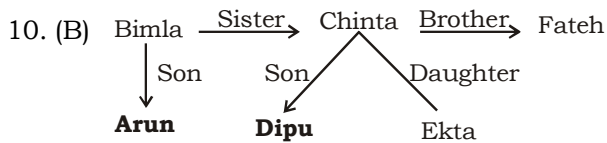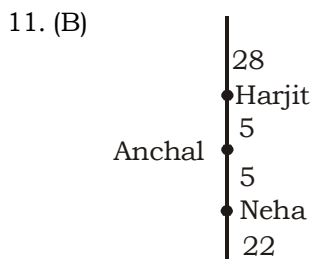
Similarly,

S T A R   **X G Z Y**
+6, +6, +6, +6

3. (C) As, 8 × 4 = 32
Similarly, 7 × 5 = **35**

4. (B) Except **Circle**, others are line figures.

5. (C) 3 × (3 – 1) = 6
7 × (7 – 1) = 42
8 × (8 – 1) = **56 ≠ 32**
5 × (5 – 1) = 20

6. (D) Except **LOVM**, sum of the numerical values of other letters is 54.

7. (C) RAPPORT → REPORT → REPRESS → REPRISAL → RESPIRE

8. (D)

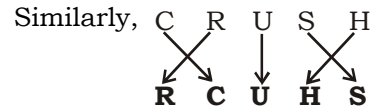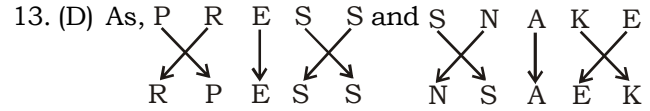CSI , GWM , KAQ , OEU , SIY , **WMC**
+4   +4   +4   +4   +4

9. (B)

18 , 18 , 36 , 108 , 432 , **2160**
×1   ×2   ×3   ×4   ×5

10. (B) Bimla —Sister→ Chinta —Brother→ Fateh
Bimla —Son→ **Arun**
Chinta —Son→ **Dipu**
Chinta —Daughter→ Ekta
Clearly, there are **2 nephews** of Fateh.

11. (B)

28
● Harjit
5
Anchal ●
5
● Neha
22

∴ Total No. of girls = **63**

12. (C)

13. (D) As, P R E S S and S N A K E
→ R P E S S   N S A E K

Similarly, C R U S H
→ **R C U H S**

14. (A) 28 % 7 @ 20 ~ 40 # 128% 16
After changing the signs, as per the given details,
28 ÷ 7 × 20 – 40 + 128 ÷ 16 = **48**

15. (C)
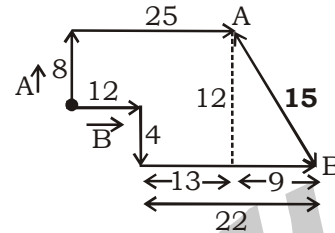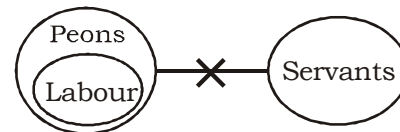
From pythagoras theorem,
AB = $\sqrt{9^2 + 12^2}$ = **15 miles**

16. (B) $24^2 + 7^2 = 25^2$ = 625
$15^2 + 8^2 = 17^2$ = 289
$40^2 + 9^2 = 41^2$ = **1681**

17. (D) 4 × 2 + 3 × 7 = 29
5 × 6 + 4 × 8 = 62
2 × 7 + 9 × 6 = **68**

18. (B)

Peons, Labour ✕ Servants

19. (B) **14 Squares**

20. (C) a**b**cd/**a**b**c**d/**a**bc**d**/ab**c**d

21. (A) Raju's present age = 36 years
12 years ago, Raju's age = 36 – 12 = 24 years
12 years ago, Dipu's age = 24 × $\frac{1}{4}$ = 6 years
∴ present age of Dipu = 6 + 12 = 18 years
∴ Age of Dipu after 27 years = 18 + 27 = **45 years**

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

26. (A) Acids taste sour, conduct electricity when dissolved in water, and react with metals to produce hydrogen gas. Certain indicator compounds, such as litmus, can be used to detect acids. Acids turn

blue litmus paper red. The strength of acids is measured on the pH scale.

27. (A) The Garo, the Khasi and the Jaintia hills are part of Shillong Plateau. It is the correct arrangement of the hills from the West to East.

28. (D) Black soil is also called Regur soil. It is black in colour and ideal for growing cotton. This type of soil is typical of the Deccan trap (Basalt) region spread over North-West Deccan plateau and is made up of lava flows.

30. (C) The National Waterway 1 or Ganga-Bhagirathi-Hooghly river system is located in India and runs from Haldia (Sagar) to Allahabad across the Ganges, Bhagirathi and Hooghly river systems. It is 1,620 km long, making it the longest waterway in India.

32. (A) A single-celled organism, like amoeba, captures and digests food, respires, excretes, grows and reproduces. Similar functions in multicellular organisms are carried out by groups of specialized cells forming different tissues. Tissues, in turn, form organs.

33. (B) Vascular tissue is a series of complex cell types that comprise the plant's vascular system (the xylem and phloem), which moves nutrients and water throughout vascular plants.

34. (A) Ferrous Sulphate is the chemical compound with the formula $FeSO_4$. Green vitriol is an important compound of iron. It's used medically to treat iron deficiency, and also for industrial applications.

35. (B) Carbon dioxide passed into limewater gives a milky solution, due to precipitation of an insoluble suspension of Calcium Carbonate:

$$Ca(OH)_2(aq) + CO_2(g) \longrightarrow CaCO_3(s) + H_2O(l)$$

36. (B) Forest is known as dynamic living entity because forest is independent living force that stimulates change or progress within an ecosystem. By harbouring greater variety of plants, the forests provide greater opportunities for food and habitat for herbivore. In forest wide variety of animals helps the forest to regenerate and grow. Decomposer helps in maintaining the supply of nutrient to growing plant in forest. Thus forest is full of life and vitality.

37. (A) The Biaras Small Hydro Power Plant Project (SHP) of 1.5 MW capacity, in Biaras Drass, Kargil Jammu & Kashmir, was commissioned on 4th November 2017. The total cost of the project, fully funded by the Ministry of New & Renewable Energy, is Rs. 17 crores and this was the first project to be commissioned under the Prime Minister's Ladakh Renewable Energy Initiative (LREI).

39. (B) The characteristics of the unorganized sector of economy:
- There are rules and regulations but these are not followed. Jobs are low-paid and often not regular.
- There is no provision for overtime, paid leave, holidays, leave due to sickness etc.
- Employment is not secure. People can be asked to leave without any reason.
- When there is less work, such as during some seasons, some people may be asked to leave.
- A lot also depends on the whims of the employ

40. (B) In India, a motion of No Confidence can be introduced only in the Lok Sabha (the lower house of the Parliament of India). Most importantly, the Lok Sabha controls the Council of Ministers. Only a person who enjoys the support of the majority of the members in the Lok Sabha is appointed the Prime Minister. If the majority of the Lok Sabha members say they have 'no confidence' in the Council of Ministers, all ministers including the Prime Minister, have to quit. The Rajya Sabha does not have this power.

42. (D) The Mansabdari system was the administrative system of the Mughal

Empire introduced by Akbar. The word mansab is of Arabic origin meaning rank or position. The system, hence, determined the rank of a government official.

43. (A) Vitamin C deficiency is called scurvy and can cause bleeding gums. If a person is suffering from bleeding gums he or she needs food which is rich in Vitamin C. It's because bleeding gums is caused by deficiency of Vitamin C in human body.

46. (C) A food web is a system of connected and interdependent food chains. All organisms originally got their energy from the sun. A food producer is an organism that is a source of food for other organisms in a food chain.

47. (C) PMUY was launched by Prime Minister Narendra Modi in May 2016 with tagline of Swachh Indhan, Behtar Jeevan.

48. (D) L.K. Advani wrote the book "A prisoner's Scrapbook". Lal Kishen Chand Advani known as Lal Krishna Advani is an Indian politician. A former president of the Bharatiya Janata Party, he served as the Deputy Prime Minister of India from 2002 to 2004.

50. (C) In, 1991, the Government set up the Tax Reforms Committee under the Chairmanship of Raja J. Chelliah examined the tax structure of the country and suggested appropriate changes therein. In its report submitted to the Government in January 1993, it had made several recommendations for reforming India's tax structure.

51. (D) Let x = Original cost of bag of apples and y = Original cost of bag of oranges
ATQ, $x + y = 70$ -----(i)
Now, Apples are sold at 40% profit.

$\therefore$ S.P = $x + x \times \dfrac{40}{100} = 1.4x$

Oranges are sold at 20% Loss.

$\therefore$ S.P = $y - y \times \dfrac{20}{100} = 0.8y$

So, $1.4x + 0.8y = 70 + 16 = 86$ ------(ii)
By Solving equation (i) and (ii),
$x = 50$

$\therefore$ Cost price of apples = **₹50**

52. (B) Boy can buy 25 pencils or 40 erasers.
Let the price of one eraser be ₹ x.
$\therefore$ Total amount the person has = ₹$40x$
Now, the cost of 25 pencil = $40x$

so 1 pencil costs $\dfrac{40x}{25}$ = $1.6x$

and cost of 10 pencils = $10 \times 1.6x = 16x$
amount for taxi fare = 20% of $40x = 8x$
$\therefore$ Money Left with boy = $40x - 8x - 16x$
$\qquad\qquad = 16x$
$\because$ C. P of one eraser = x
Hence **16 erasers** can be bought with ₹$16x$.

53. (C) Let there are 100 people in a dance club.
Number of men = 40
Number of women = 60
Number of men above 30 years = 75% of 40 = 30
ATQ,
Total no. of people above 30 years = 45
$\therefore$ Number of women above 30 years
= $45 - 30 = 15$
So, Number of women of or below 30 years
= $60 - 15 = 45$

Hence, required fraction = $\dfrac{45}{60} = \dfrac{3}{4}$

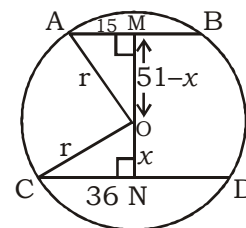54. (A) A = $0.19999\underline{\qquad}$ = $0.1\overline{9}$ = $\dfrac{19-1}{90} = \dfrac{18}{90}$

B = $0.142857142857\underline{\qquad}$

= $0.\overline{142857} = \dfrac{142857}{999999}$

Now, $\dfrac{A+B}{AB} = \dfrac{1}{A} + \dfrac{1}{B} = \dfrac{90}{18} + \dfrac{999999}{142857} = 5 + 7 =$ **12**

55. (B) $(A + B)^3 + 6A(A^2 - B^2) + (A - B)^3$
= $(A + B)^3 + 3 \times (A + B)(A - B)(A + B + A - B) + (A - B)^3$
= $(A + B + A - B)^3$
= $(2A)^3 = (2 \times 8)^3 = (16)^3 =$ **4096**

56. (D)

In $\triangle AOM$,
$r^2 = AO^2 = (15)^2 + (51 - x)^2$ ----(i)
In $\triangle CON$,
$r^2 = CO^2 = 36^2 + x^2$ ----(ii)
From (i) and (ii),
$(15)^2 + (51 - x)^2 = 36^2 + x^2$
$\Rightarrow 225 + (51)^2 + (x)^2 - 2 \times 51 \times x = (36)^2 + x^2$

$\Rightarrow$ $225 + 2601 + x^2 - 102x = 1296 + x^2$
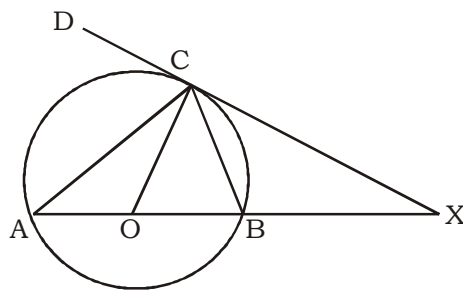
$\Rightarrow$ $2826 - 102x = 1296$

$\Rightarrow$ $102x = 1530$

$\Rightarrow$ $x = \dfrac{1530}{102} = 15$ cm.

From $\triangle$ CON,

$r^2 = x^2 + (36)^2$

$\Rightarrow$ $r = \sqrt{(15)^2 + (36)^2} = 39$ cm.

So, area of circle = $\pi r^2 = \pi \times (39)^2$

= **$1521\, \pi$ cm²**

57. (A)

From Figure,

$\angle$ XCA + $\angle$ ACD = 180°

$\Rightarrow$ 120° + $\angle$ ACD = 180°

$\Rightarrow$ $\angle$ ACD = 60°

Now, $\angle$ ACD = $\angle$ ABC = 60°

[Alternate Segment]

and $\angle$ ACB = 90° [Angle in semicircle]

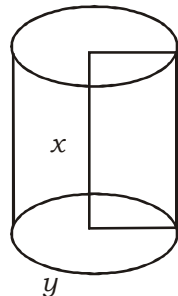$\therefore$ $\angle$ BAC = 180° − 90° − 60° = **30°**

58. (C) Time = $\dfrac{\text{Distance}}{\text{Speed}} = \dfrac{L_1 + L_2}{S_1 + S_2}$

= $\dfrac{120 + 180}{(40 + 50) \times \dfrac{5}{18}} = \dfrac{300 \times 18}{90 \times 5}$

= **12 Seconds**

59. (B)

Length of rectangle = Height of cylinder = x

and width (y) = 2π r [r = radius of cylinder]

$\therefore$ 2π r = y

$\Rightarrow$ r = $\dfrac{y}{2\pi}$

Therefore,

Volume of cylinder = π r²h

= $\pi \left(\dfrac{y}{2\pi}\right)^2 x = \dfrac{\boldsymbol{y^2 x}}{\boldsymbol{4\pi}}$

60. (B) ATQ,

$A = B\left(1 - \dfrac{x}{100}\right)$ -------(i)

$A = C\left(1 - \dfrac{y}{100}\right)$ --------(ii)

$C = B\left(1 + \dfrac{k}{100}\right)$ ------(iii)

By Substituting equations (i) and (iii) in equation (ii), we get

$B\left(1 - \dfrac{x}{100}\right) = B\left(1 + \dfrac{k}{100}\right)\left(1 - \dfrac{y}{100}\right)$

$\Rightarrow$ $1 + \dfrac{k}{100} - \dfrac{y}{100} - \dfrac{ky}{(100)^2} = 1 - \dfrac{x}{100}$

$\Rightarrow$ $\dfrac{k}{100}\left(1 - \dfrac{y}{100}\right) = \left(\dfrac{y - x}{100}\right)$

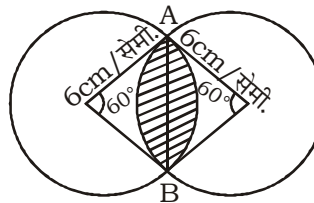$\Rightarrow$ $k = \dfrac{\boldsymbol{(y - x)100}}{\boldsymbol{100 - y}}$

61. (D) He solves 50 questions in 25 minutes.

$\therefore$ remaining questions to solve = 30

and remaining time = 35 minutes

So, average time for each question

= $\dfrac{35}{30} \times 60$

= **70 Seconds**

62. (C)

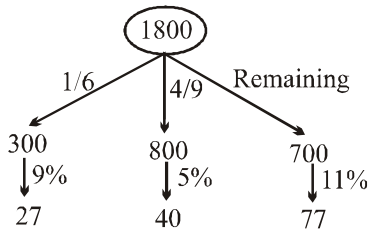$\because$ AOB is an equilateral $\triangle$.

$\therefore$ Area of $\triangle$ AOB = $\dfrac{\sqrt{3}}{4}(r)^2$

= $\dfrac{\sqrt{3}}{4}(6)^2 = \dfrac{36\sqrt{3}}{4}$

Area of sector OAB = $\dfrac{60°}{360°} \times \pi(r)^2$

$= \dfrac{1}{6}\pi(6)^2 = \dfrac{36\pi}{6}$

∴ Area of shaded region = 2 ×

$\left(\dfrac{36\pi}{6} - \dfrac{36\sqrt{3}}{4}\right)$

$= 36\left(\dfrac{\pi}{3} - \dfrac{\sqrt{3}}{2}\right) \textbf{cm}^2$

63. **(B)** Let the total capital = 1800 units
ATQ,

Total interest = (27 + 40 + 77) = 144

Required rate = $\dfrac{144}{1800} \times 100$ = **8%**

64. **(A)** Mother (M) + Daughter (D) = 110
M + D = 110----------(i)

ATQ, $\dfrac{M-10}{D-10} = \dfrac{2}{1}$

⇒ (M −10) = 2(D − 10)
⇒ M − 10 = 2D − 20
⇒ M − 2D = −10 -----(i)
By solving equations (i) and (ii)
M = 70
D = 110 − 70 = 40
Hence ratio of ages after 10 years =
Mother : Daughter
70 + 10 : 40 + 10
80 : 50
8 : **5**

65. **(C)** $x + 5 = \sqrt{y} + 2$

⇒ $x + 3 = \sqrt{y}$

ATQ,

$\dfrac{1}{3}\left(y - \dfrac{x^3 + 9x^2 + 27x + 27}{\sqrt{y}}\right)$

$= \dfrac{1}{3}\left(y - \dfrac{(x+3)^3}{\sqrt{y}}\right)$

$= \dfrac{1}{3}\left(y - \dfrac{y\sqrt{y}}{\sqrt{y}}\right) = \dfrac{1}{3}(y - y) = \textbf{0}$

66. **(D)** A = $2^3 \times 3^{10} \times 5 \times 10$
$= 2^3 \times 3^{10} \times 5 \times 5 \times 2$
$= 2^4 \times 3^{10} \times 5^2$
B = $2^5 \times 3^2 \times 21 = 2^5 \times 3^2 \times 3 \times 7$
$= 2^5 \times 3^3 \times 7$
∴ HCF of (A, B) = Common factor of A and B
$= 2^4 \times 3^3 = 432$

67. **(D)** $2(\sin^2\theta - \cos^2\theta) = 1$

⇒ $\sin^2\theta - \cos^2\theta = \dfrac{1}{2}$

⇒ $\sin^2\theta - (1 - \sin^2\theta) = \dfrac{1}{2}$

⇒ $\sin^2\theta - 1 + \sin^2\theta = \dfrac{1}{2}$

⇒ $2\sin^2\theta = \dfrac{3}{2}$

⇒ $\sin^2\theta = \dfrac{3}{4}$

⇒ $\sin\theta = \dfrac{\sqrt{3}}{2} = \sin 60°$

⇒ $\theta = 60°$

∴ $\sin^2 2\theta = (\sin 2\theta)^2 = (2\sin\theta \cos\theta)^2$
$= (2 \times \sin 60° \times \cos 60°)^2$

$= \left(2 \times \dfrac{\sqrt{3}}{2} \times \dfrac{1}{2}\right)^2 = \dfrac{3}{4}$

68. **(A)**
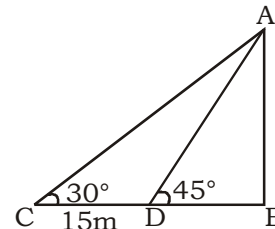
In ∆ABD

$\tan 45° = \dfrac{AB}{BD}$

⇒ $1 = \dfrac{AB}{BD}$

⇒ AB = BD

In ∆ABC,

$\tan 30° = \dfrac{AB}{BC}$

$\Rightarrow \qquad \dfrac{1}{\sqrt{3}} = \dfrac{AB}{BD + CD}$

$\Rightarrow \qquad \dfrac{1}{\sqrt{3}} = \dfrac{AB}{AB + CD}$

$\Rightarrow \quad \sqrt{3}\ AB = AB + 15$

$\Rightarrow \quad AB (\sqrt{3} - 1) = 15$

$\Rightarrow \quad AB = \dfrac{15}{\sqrt{3}-1} \times \dfrac{\sqrt{3}+1}{\sqrt{3}+1} = \dfrac{15(\sqrt{3}+1)}{2}$

= **7.5 ($\sqrt{3}$ +1) metre**

69. (C) $\text{Cot}^2(90 - x)\text{Sin}^6(90 - x) + \cot^2(180 - x)\text{Sin}^6(180 - x)$

= $\tan^2 x\ \text{Cos}^6 x + (-\text{Cot}x)^2\ \text{Sin}^6 x$

= $\tan^2 x\ \text{Cos}^6 x + \text{Cot}^2 x\ \text{Sin}^6 x$

= $\dfrac{Sin^2 x}{Cos^2 x} Cos^6 x + \dfrac{Cos^2 x}{Sin^2 x} Sin^6 x$

= $\text{Sin}^2 x\ \cos^4 x + \text{Cos}^2 x\ \sin^4 x$

= $\text{Sin}^2 x\ \cos^2 x\ (\text{Cos}^2 x + \text{Sin}^2 x)$

= $\text{Sin}^2 x\ \text{Cos}^2 x$

= $(\text{Sin}x\ \cos x)^2 = \left(\dfrac{Sin2x}{2}\right)^2 = \dfrac{\textbf{Sin}^2\textbf{2x}}{\textbf{4}}$

70. (A) Outer curved surface area of hollow cylinder = 1188

$\Rightarrow \quad 2\pi\ Rh = 1188$ \qquad [R=outer radius]

$\Rightarrow \quad 2 \times \dfrac{22}{7} \times R \times 9 = 1188$

$\Rightarrow \quad R = 21$ cm.

Inner volume of hollow cylinder = 5544

$\Rightarrow \quad \pi\ r^2 h = 5544$ \qquad [r = inner radius]

$\Rightarrow \quad \dfrac{22}{7} \times r^2 \times 9 = 5544$

$\Rightarrow \quad r^2 = 196$

$\Rightarrow \quad r = 14$ cm.

Hence, thickness of hollow cylinder

= $R - r = 21 - 14 = \textbf{7cm.}$

71. (D) I. $\sqrt[4]{1296} + \sqrt{1024}$

= $6 + 32 = 38$

$38 < 55$

II. $\sqrt[3]{\left(\sqrt{729}\right)} + \sqrt[4]{625}$

= $\sqrt[3]{27} + \sqrt[4]{625}$

= $3 + 5 = 8$

I. True II. True

72. (B) Required percentage =

$\dfrac{490}{490 + 49 + 25 + 35 + 30} \times 100$

= $\dfrac{490}{629} \times 100 = \textbf{77.9\%}$

73. (A) Percentage increase in consumption of :

Lemonade = $\dfrac{49 - 25}{25} \times 100 = \dfrac{24}{25} \times 100 = 96\%$

Others = $\dfrac{25 - 35}{35} \times 100 = \dfrac{-10}{35} \times 100 = -28.57\%$

Frooti = $\dfrac{25 - 26}{26} \times 100 = \dfrac{9}{26} \times 100 = -34.61\%$

Redbul = $\dfrac{30 - 35}{35} \times 100 = \dfrac{-5}{35} \times 100 = -14.28\%$
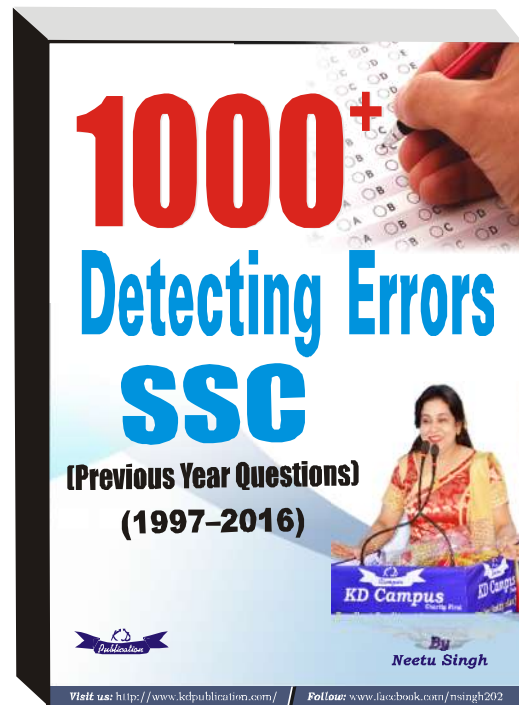
$\therefore$ Required answer = **Lemonade**

74. (B) Ratio of taxes = $\dfrac{25 \times 3 + 26 \times 5 + 35 \times 2}{49 \times 3 + 35 \times 5 + 30 \times 2}$

= $\dfrac{275}{382} = \textbf{0.72}$

75. (C) Required percentage = $\dfrac{35 - 26}{26} \times 100$

= $\dfrac{9}{26} \times 100 = \textbf{34.6\%}$

MEANINGS IN ALPHABETICAL ORDER

| Word	Meaning in English	Meaning in Hindi
Stall	To stop	रोकना
Gripe	A minor complaint	शिकायत
Gross	Total	कुल
Postulate	Suggest or assume the existence, fact, or truth of (something) as a basis for reasoning	स्वयं सिद्ध मान लेना
Thrift	Using money and other resources carefully and not wastefully, miser	कंजूस
Absurd	Wildly unreasonable, illogical, or inappropriate	बेतुका
Virtuous	Having high moral standards	नैतिक
Vile	Morally bad	नीच
Chaste	Pure	पवित्र
Kosher (v)	Prepare (food) according to the requirements of jewish law	यहूदी ढंग से खाना तैयार करना
Celibate	A person who abstains from marriage & sexual relations	ब्रम्हचारी
Hispanic	Related to Spanish speaking countries	स्पेनिश भाषित देशों में सबंधित
Stumpy	Short and thick	छोटा और मोटा
Pudgy	Fat	मोटा आदमी
Loft	A room or space directly under the roof of a house or other building, which may be used for accommodation or storage	दुछत्ती
Lank	(of hair) long, limp and straight	लंबे एवं सीधे बाल
Falter	Lose strength or momentum	लड़खड़ाना
Rangy	(of a person) tall and slim with long, slender limbs	दुबला–पतला
Enunciate	to make a clear statement of (idea, belief, etc.)	स्पष्ट रूप से कहना

SSC MOCK TEST - 147 (ANSWER KEY)

1.	(D)	26.	(A)	51.	(D)	76.	(C)
2.	(A)	27.	(A)	52.	(B)	77.	(D)
3.	(C)	28.	(D)	53.	(C)	78.	(B)
4.	(B)	29.	(A)	54.	(A)	79.	(A)
5.	(C)	30.	(C)	55.	(B)	80.	(C)
6.	(D)	31.	(B)	56.	(D)	81.	(D)
7.	(C)	32.	(A)	57.	(A)	82.	(B)
8.	(D)	33.	(B)	58.	(C)	83.	(A)
9.	(B)	34.	(A)	59.	(B)	84.	(B)
10.	(B)	35.	(B)	60.	(B)	85.	(A)
11.	(B)	36.	(B)	61.	(D)	86.	(D)
12.	(C)	37.	(A)	62.	(C)	87.	(C)
13.	(D)	38.	(B)	63.	(B)	88.	(C)
14.	(A)	39.	(B)	64.	(A)	89.	(D)
15.	(C)	40.	(B)	65.	(C)	90.	(B)
16.	(B)	41.	(D)	66.	(D)	91.	(B)
17.	(D)	42.	(D)	67.	(D)	92.	(A)
18.	(B)	43.	(A)	68.	(A)	93.	(B)
19.	(B)	44.	(B)	69.	(C)	94.	(C)
20.	(C)	45.	(A)	70.	(A)	95.	(D)
21.	(A)	46.	(C)	71.	(D)	96.	(A)
22.	(A)	47.	(C)	72.	(B)	97.	(C)
23.	(C)	48.	(D)	73.	(A)	98.	(D)
24.	(B)	49.	(B)	74.	(B)	99.	(B)
25.	(B)	50.	(C)	75.	(C)	100.	(C)
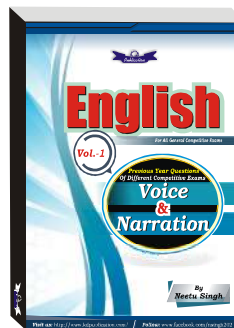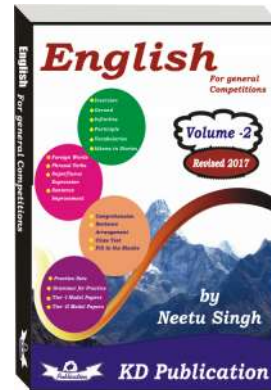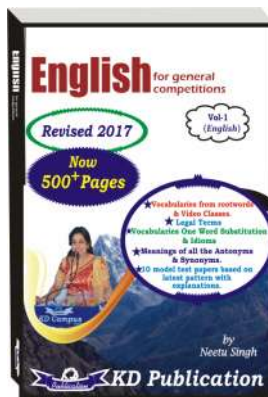
76. **(C)** If a sentence starts with 'it's time' or 'it's about time' and if it is followed by a subject, the verb that follow the subject will be in second (V_2) form. 'Learn' has both 'learnt' and 'learned' as (V_2) forms. 'Learnt' is more common in British English.

77. **(D)** Phrasal verb 'take off' means 'to remove something.

80. **(C)** When we use a superlative adjective before the noun, we generally use it with 'the'. But remember, we don't use 'the' when there is a possessive:

Ex. He is my best student.

Hence add 'his' before 'best'.
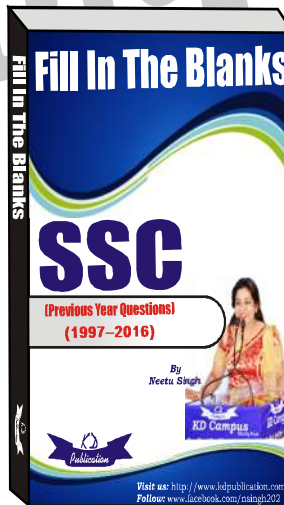
Note:- If your opinion differs regarding any answer, please message the mock test and question number to 8860330003

Note:- Whatsapp with Mock Test No. and Question No. at 7053606571 for any of the doubts. Join the group and you may also share your suggestions and experience of Sunday Mock Test.

Note:- If you face any problem regarding result or marks scored, please contact 9313111777