SSC Solution on of March-019

1. (C) As Safe and Secure are synonyms of one another, similarly Careful and **Wary** are synonyms.

2. (B) Rupee is the currency of India and **Rand** is the currency of South Africa.

3. (D) $6 \triangleright 6^2 + 2 = 38$
   $11 \triangleright 11^2 + 2 = \mathbf{123}$

4. (C) 9845   9676   9555   9474   **9425**
   $-(13)^2 = -169$ $-(11)^2 = -121$ $-9)^2 = -81$ $-7)^2 = -49$

5. (B) 6812   6816   6960   7444   **8468**
   $+2^2 = 4$ $+12^2 = 144$ $+22^2 = 484$ $+32^2 = 1024$
   +10   +10   +10

6. (C)

7. (C) $4 \circledR 1 \circledR 2 \circledR 6 \circledR 5 \circledR 3$

8. (D) P O S I   T I O N   P E R   S O N
   K U Q R   L M G R   T G R   L M Q
   +2 +2 +2 +2   +2 +2 +2 +2   +2 +2 +2   +2 +2 +2

9. (D) M U S C L E
       4 6 5 1 3 2

10. (A) $T = 3 + \dfrac{2}{11}(3 \cdot 30 + 0)$

    $= 3 + \dfrac{180}{11} = \mathbf{3}$ **past** $16\dfrac{4}{11}$ **min**

11. (C) As, $\dfrac{2024}{4} = 0$ as a remainder
    So, Required year $= 2024 + 28 = \mathbf{2052}$

12. (D) We are using **paper** in file, diary and letter.

13. (A) **9612** $= 9 + 6 + 1 + 2 = 18$
    $1097 = 1 + 0 + 9 + 7 = 17$
    $9413 = 9 + 4 + 1 + 3 = 17$
    $4742 = 4 + 7 + 4 + 2 = 17$

14. (D) Only **Gingelly** is the Kharif crops.

15. (A)

    Shantanu is **Great Grandfather** of Savitri.

16. (B) $13 + 21 + 24 = 58$ $\triangleright 7 \times 8 = 56$
    $21 + 18 + 39 = 78$ $\triangleright 7 \times 8 = 56$
    $23 + 11 + 34 = 68$ $\triangleright 6 \times 8 = \mathbf{48}$

17. (B) As,
    $(11^2 + 13^2 + 17^2 + 19^2) - (11 + 13 + 17 + 19)$
    $= 121 + 169 + 289 + 361 - 60 = 880$
    and $(3^2 + 5^2 + 7^2 + 11^2) - (3 + 5 + 7 + 11)$
    $= 9 + 25 + 49 + 21 = 204 - 26 = 178$
    Similarly,
    $(5^2 + 11^2 + 23^2 + 17^2) - (5 + 11 + 23 + 17)$
    $= 25 + 121 + 529 + 289 - 56$
    $= 908$

18. (C) W E **B** S I **T** E W E **B** S I T E

19. (D) From both the dices, we can observe that digit 4 is missing, it means it is at bottom of 3.

20. (D)

21. (D)

22. (C) $\sqrt{64} + \sqrt{36} = 8 + 6 = 14$
    $\sqrt{144} + \sqrt{16} = 12 + 4 = 16$
    $\sqrt{324} + \sqrt{841} = 18 + 29 = 47$

23. (D)

24. (D)

25. (C)

26. (C) Periyar Lake is not a lagoon. It is surrounded by mountain ridges of Andaman hills.

27. (D) Galena, also known as Lead glance is the natural mineral form of Lead (II) sulphide.

28. (A) The Ravva offshore block is in Krishna-Godavari basin of Andhra Pradesh. It is the area of a great reserve of petroleum and natural gas.

29. (D) In computer programming, an event handler is an asynchronous call back subroutine that handles inputs received in a program. Each event is a piece of application-level information from the underlying framework, typically the GUI. GUI events include the key presses, mouse movement.

30. (A) The Ajanta Caves is in Aurangabad district of Maharashtra. The caves include paintings and sculptures considered to be masterpieces of Buddhist religious art (which depict the Jatak tales). The Ajanta cave paintings depict the life of Gautam Buddha.

31. (C) PIL originated from USA. It seeks to protect and promote interest of the public at large.

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32. (D) Disposable income is total personal income minus personal current taxes. In national accounts definitions, personal income minus direct taxes equals disposable personal income.

33. (A) The International Energy Agency (IAE) is a Paris-based autonomous inter-governmental organization, which works to accelerate the global energy transition, providing research, statistics, in-depth analysis & policy recommendations. It was established in the framework of the Organisation for Economic Co-operation and Development (OECD) in 1974 in the wake of the 1973 oil crisis. Recently, it is in news because IAE will tie-up with India to implement its Unnat Jyoti by Affordable LEDs for All (UJALA) initiative globally for energy savings. The UJALA scheme is executed by the Energy Efficiency Services Limited (EESL), a joint venture of PSUs under the Union Ministry of Power.

34. (A) Aaron Pryor (60), an American boxer, has recently passed away in Cincinnati, Ohio. He was known as "the Hawk" and was a crowd favorite who fought with a frenetic style.

36. (D) Satya Shodhak Samaj was founded by Jyotiba Phule in 1873.

37. (D) The book "The Greatest Bengali Stories Ever Told" has been authored by Arunava Sinha.

38. (C) MRI scanners use strong magnetic fields, radio waves to form images of body.

39. (D) The World's first-ever Cybathlon championship for disabled athletes has started at Zurich in Switzerland. The championship is popularly known as 'Bionic Olympics', it differs from the Paralympics as it sees participants compete against each other using the latest assistive technologies such as robotic prostheses, brain-computer interfaces and powered exoskeletons. It is organized by the Swiss Federal Institute of Technology ETH Zurich.

41. (D) Though temperature and humidity are key elements of weather crucial for a good harvest in Indian agriculture, it is said to be the handmaid of monsoon. This is on account of the lack of irrigational facilities across the country. A good monsoonal year often means a bumper harvest.

42. (C) 'Part III - Fundamental Rights' is a charter of rights contained in the Constitution of India. It guarantees civil liberties such that all Indians can lead their lives in peace and harmony as citizens of India. These include individual rights which are common to most liberal democracies such as equality before law, freedom of speech, expression and peaceful assembly, freedom to practice one's own religion, and the rights by means of writs such as habeas corpus.

44. (C) It is because the night side of Earth will radiate infra-red radiation (heat) back into the space. When there is cloud cover, the clouds act like a blanket and trap the heat just like a blanket traps heat close to our body.

46. (C) Darul Uloom Deoband is an Islamic school where the Deobandi Islamic Movement was started. Deoband had opposed the Jinnah's Demand for the partition of British India into Muslim and Non-Muslim sections. The school advocates an orthodox version of Islam and has repeatedly distanced itself from religious extremism.

48. (B) The assets of the banks are the loans and advances given to the public. Banks earn interest on these loans and advance is the main source of income for the banks.

50. (A) A medium of exchange permits the value of goods to be assessed and rendered in terms of intermediary. Most often, a form of currency widely accepted to buy any other goods.

51. (D) Percentage variation :

Model A $\Rightarrow \dfrac{40-30}{30} \times 100 = 33\dfrac{1}{3}\%$

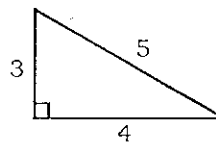**Model B** $\Rightarrow \dfrac{20-15}{15} \times 100 = 33\dfrac{1}{3}\%$

Model C $\Rightarrow \dfrac{15-20}{20} \times 100 = -25\%$

52. (B) Required production
$= \dfrac{44 \times 30}{100}$ lakhs
$= \textbf{1320000}$

53. (C)

Put $\sin q = \dfrac{3}{5}$, $\cos q = \dfrac{4}{5}$

then $3 \sin q + 4 \cos q = 3 \times \dfrac{3}{5} + 4 \times \dfrac{4}{5} = \dfrac{25}{5} = 5$

So, $4 \cos q - 3 \sin q = 4 \times \dfrac{4}{5} - 3 \times \dfrac{3}{5} = \dfrac{7}{5} = \textbf{1.4}$

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54. (A) HCF (3.0, 1.2, 0.06)

$$HCF\left(\frac{3}{10}, \frac{6}{5}, \frac{3}{50}\right) = HCF\left(\frac{3}{50}\right) = \textbf{0.06}$$

55. (D) The number of pass candidates are
2 + 6 + 18 + 40 = 66 out of total 100.
Hence, Pass percentage = **66%**

56. (B) Let x kg of oil be used for the eating purpose, daily, then
$(x + 11) \times 50 = (x + 15) \times 45$
$\triangleright x = 25$
Thus, Total quantity of oil,
$= (25 + 11) \times 50 = 1800$
Hence, required number of days,

$$= \frac{1800}{25} = \textbf{72 days}.$$

57. (A) Let 1st part is x and 2nd part is (6000 – x). ATQ,

$$\left(\frac{x \times 2}{100}\right) = \left(\frac{(6000-x) \times 3 \times 8}{100}\right)$$

$12x = 144000 - 24x$
or, $36x = 144000$

or, $x = \dfrac{144000}{36} = ₹\ 4000$

1st part = ₹ **4000**
2nd part = ₹ **2000**

58. (B) Let the quantity of water mixed be x kg.
Let CP of 1 kg of pure milk = ₹ 1.

Hence, % gain = $\dfrac{x \times 100}{50}$

$$10 = \frac{100x}{50}$$

or, $2x = 10$
or, $x = 5$ kg
Quantity of water to be mixed = **5 kg**

59. (D) Let, $B_1 : B_2 : B_3 = 3x : 4x : 5x$
Again, $B_1 : B_2 : B_3 = 5y : 4y : 3y$
Number of oranges remain constant in third basket as increase in oranges takes place only in first two baskets.
Hence, $5x = 3y$
and, $3x : 4x : 5x$

$$\triangleright \frac{9y}{5} : \frac{12y}{5} : \frac{15y}{5} = 9y : 12y : 15y$$

And, $5y : 4y : 3y \triangleright 25y : 20y : 15y$
\ Increment in first basket = 16
Increment in second basket = 8

Thus, Required ratio = $\dfrac{16}{8} = \textbf{2 : 1}$

60. (A) Let the CP of the article be ₹ x, since he earns a profit of 20%, hence SP= X + 20% of X = 1.2x.
It is given that he incurs loss by selling 16 articles at the cost of 12 articles
[loss = (16 – 12)/16 = 25%]
His selling price = SP – 25% of SP = SP × 0.75;
Hence, SP × 0.75 = 1.2X.
or, SP = (1.2 × x/0.75) = 1.6X.
This SP is arrived after giving a discount of 20% on MP.
Let MP = Y.
Y – 20% of Y = SP
0.80Y = 1.6X.
Y = 2X.
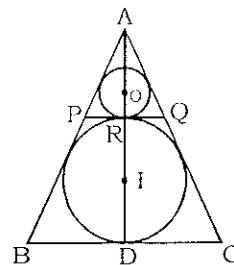It means that the article has been marked **100%** above the cost price.

61. (D) Average speed = $\left[\dfrac{2xy}{(x+y)}\right]$ km/hr

$$= \left[\frac{(2 \times 84 \times 56)}{(84 + 56)}\right] \text{ km/hr}$$

$$= \left[\frac{(2 \times 84 \times 56)}{140}\right] \text{ km/hr}.$$

= **67.2 km/hr**

62. (C)

In radius = $\dfrac{a}{2\sqrt{3}}$

Now PQ is parallel to BC. AR is ⊥ to PQ. Triangle APQ is also an equilateral △ and AORID is a st. line.

AD = $\dfrac{\sqrt{3}}{2}a$, RD = $\dfrac{a}{\sqrt{3}}$, AR = $\dfrac{\sqrt{3}}{2}a - \dfrac{a}{\sqrt{3}}$

$$= \frac{a}{2\sqrt{3}} = \frac{1}{3}AD$$

Radius of smaller circle = $\dfrac{1}{3}$ × radius of

larger circle = $\dfrac{1}{3} \times \dfrac{a}{2\sqrt{3}} = \dfrac{a}{6\sqrt{3}}$

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Area of smaller circle= pr^2

$$\text{Fig} \frac{a \cdot a \cdot 6^2}{6\sqrt{3} \cdot 6} = \frac{pa^2}{108}$$

Area of triangle = $\frac{\sqrt{3}}{4}a^2$

∴ Required ratio = $\frac{pa^2}{108} : \frac{\sqrt{3}a^2}{4} = $ **p : 27√3**

63. (A) In this type of question, We need to find out the LCM of the given numbers.
LCM of 12, 15, 18 and 20;
$12 = 2 \times 2 \times 3$
$15 = 3 \times 5$
$18 = 2 \times 3 \times 3$
$20 = 2 \times 2 \times 5$
Hence, LCM = $2 \times 2 \times 3 \times 5 \times 3$
Since, the soldiers are in the form of a solid square.
Hence, LCM must be a perfect square. To make the LCM a perfect square, We have to multiply it by 5, hence, the required number of soldiers = $2 \times 2 \times 3 \times 3 \times 5 \times 5 = $ **900**.

64. (D) By increasing the speed by 33.33%, it would be able to reduce the time taken for traveling by 25%.
But since this is able to overcome the time delay of 30 minutes, 30 minutes must be equivalent to 25% of the time originally taken.
Hence, the original time must have been 2 hours and the original speed would be 750 km/h.
Hence, the new speed would be **1000 km/h**.

65. (A) The sum of two sides should be greater than the third. Let us assume a £ b £ c.
a = 1, Possible triangle 1, 7, 7
a = 2, possible triangle 2, 6, 7
a = 3, possible triangles 3, 6, 6 and 3, 5, 7
a = 4, possible triangles 4, 4, 7 and 4, 5, 6
a = 5, possible triangle is 5, 5, 5
There are totally **7 triangles** possible.

66. (D) Let us assume there are 100 students in the institute.
Then, number of boys = 60
And, number of girls = 40
Further, 15% of boys get fee waiver = 9 boys
7.5 % of girls get fee waiver = 3 girls
Total = 12 students who gets fee waiver
But, here given 90 students are getting fee waiver. So we compare
12 = 90

So, $1 = \frac{90}{12} = 7.5$

Now number of students who are not getting fee waiver = 51 boys and 37 girls.
50% concession = 25.5 boys and 18.5 girls (i.e. total 44).
Hence, required students = $44 \times 7.5 = $ **330**

67. (B) Perimeter = 56. Let the side of the rhombus be "a", then $4a = 56$ �Þ $a = 14$.
Area of Rhombus = Half the product of its diagonals. Let the diagonals be d_1 and d_2 respectively

$\frac{1}{2} \times d_1 \times d_2 = 100$ ⊃ $d_1 \times d_2 = 200$.

By Pythagoras theorem, $(d_1)^2 + (d_2)^2 = 4a^2$
⊃ $(d_1)^2 + (d_2)^2 = 4 \times 196 = 784$.
$(d_1)^2 + (d_2)^2 + 2d_1 \times d_2 = (d_1 + d_2)^2$
$= 784 + 2 \times 200 = 1184$ ⊃ $(d_1 + d_2)$

$= \sqrt{1184} = 34.40$ cm

Therefore, sum of the diagonals is equal to **34.40 cm**.

68. (B) Time × Rate = total charges
$100 \times 100 = 10000$
X × 125 = 110 [25% increase in rate, user can afford only 10% increase]

$X = \frac{110}{125} \times 100 = 88\%$

Thus, decrease in time period = $(100-88)\% = $ **12%**

69. (B) In ᴅABC,
ᴅA + ᴅB + ᴅC = 180°
or, ᴅC = 180° – 90° – 30° = 60° = ᴅACB
also, ᴅACB + ᴅACD = 180°
⊃ ᴅACD = 180° – 60° = 120°
Now, in ᴅACD,
ᴅA + ᴅC + ᴅD = 180°
30° + 120° + ᴅD = 180° ⊃ ᴅD = 30°
As, ᴅCDA = ᴅCAD = 30° ⊃ **AC = CD**

70. (A)
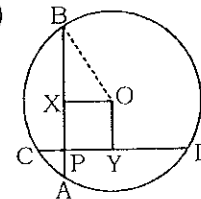
When 2 chords AB and CD intersect at P then
$AP \times PB = CP \times PD$
Hence $4 \times 6 = 3 \times PD$
Thus, PD = 8 cm
Now AB = AP + PB = 10 cm
And CD = CP + PD
Thus, CD = 11 cm ⊃ DY = 5.5 cm
⊃ PY = 5.5 – 3 = 2.5 cm
AB = 10 cm ⊃ BX = 5 cm

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$\triangleright OB = \sqrt{2.5^2 + 5^2} = \sqrt{31.25}$ cm

Thus radius = $\sqrt{31.25}$ **cm**

71. (A) Amount of alcohol in first vessel,
= 25% of 2 litre
= 0.25 × 2 = 0.5 litre
Amount of alcohol in second vessel.
= 40% of 6 litre
= 0.4 × 6 = 2.4 litre
Total amount of alcohol out of 10 litres of mixture is, 0.5 + 2.4 = 2.9 litre.
Thus, Concentration of alcohol in the mixture is,

$\frac{(2.9 \times 100)}{10} = \textbf{29\%}$

72. (C) $x = 2 - 2^{\frac{1}{3}} + 2^{\frac{2}{3}}$

$\triangleright x - 2 = 2^{\frac{2}{3}} - 2^{\frac{1}{3}}$

$\triangleright (x - 2)^3 = 2^2 - 2^1 - 3.2\left(2^{\frac{2}{3}} - 2^{\frac{1}{3}}\right)$

$\triangleright x^3 - 6x^2 + 12x - 8 = 4 - 2 - 6(x - 2)$
$\triangleright x^3 - 6x^2 + 12x - 8 = 2 - 6x + 12$
$\triangleright x^3 - 6x^2 + 18x - 22 = 0$
$\triangleright x^3 - 6x^2 + 18x - 22 + 46 = 46$
$\triangleright x^3 - 6x^2 + 18x + 24 = \textbf{46}$

73. (B) Let x be the initial number of men then, ATQ,
$4x = x + (x - 20) + (x - 40) + (x - 60) + (x - 80) + (x - 100) + (x - 120)$
$\triangleright 4x = 7x - 420$
$\triangleright 3x = 420$

$\triangleright x = \dfrac{420}{3}$

$\triangleright x = 140$ men
So, initially there were **140** members

74. (A) A : B : C = (10 × 7) : (12 × 5) : (15 × 3)
= 70 : 60 : 45 = 14 : 12 : 9

C's rent = ₹ $\left(\dfrac{175 \times 9}{35}\right) = $ ₹ **45**

75. (A) In right angle $\triangle ADB$,
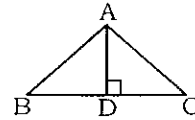
$AB^2 = AD^2 + BD^2$ ...(i)
In Right angled $\triangle ACD$,
$AC^2 = AD^2 + CD^2$ ...(ii)
By (i) − (ii)
$AB^2 - AC^2 = BD^2 - CD^2$
$\mathbf{AB^2 - BD^2 = AC^2 - CD^2}$

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MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Adaptable	able to adjust to new conditions	अनुकूलन योग्य
Comical	amusing	हास्यपूर्ण
Compassionate	feeling or showing sympathy and concern for others	दया करने वाला
Depose	remove from office suddenly and forcefully	पदच्युत करना
Dethrone	remove (a ruler, especially a monarch) from power	राज गद्दी से उतारना
Domicile	the country that a person treats as their permanent home	आवास
Factual	based on or containing facts	तथ्यपूर्ण
Immigrant	a person who has come to live permanently in a country that is not their own	परदेसी
Impinge upon	to have a noticeable effect on something	प्रभाव डालना
Liaison	communication or cooperation that facilitates a close working relationship between people or organizations	संबंध
Perception	the ability to understand the true nature of something	समझ
Poignant	evoking a keen sense of sadness or regret	मार्मिक
Reverie	a state of being pleasantly lost in one's thoughts; a daydream	असंभव कल्पना
Traditional	existing in or as part of a tradition; long-established	परंपरागत
Usurp	take (a position of power) illegally or by force	हड़पना
Vagrant	having no home or job	बेघर, बेरोजगार
Wilt	(of a plant, leaf, or flower) become limp through heat, loss of water etc.	मुरझाना
Wither	to become less or weaker, especially before disappearing completely	मुरझाना

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SSC Answer key oh 03 March - 019

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

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