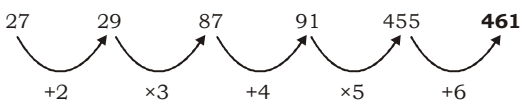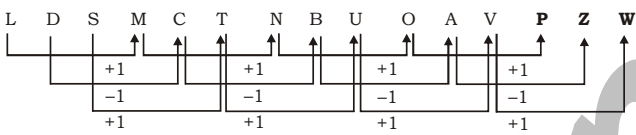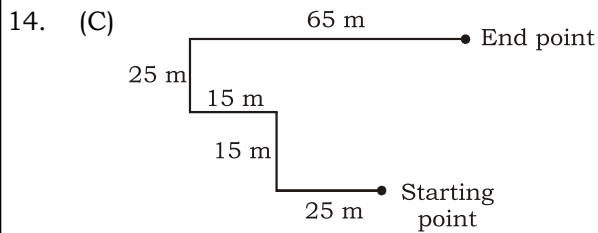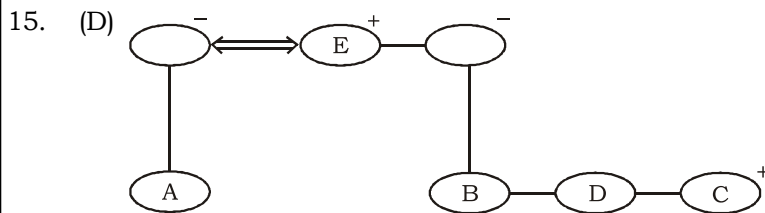# SSC MOCK TEST - 342 (SOLUTION)

1. (C) Accident is due to Carelessness, while Success is gain after Diligence.

2. (A) As, $13 \Rightarrow 1^3 + 3^3 = 28$

    Similarly, $27 \Rightarrow 2^3 + 7^3 = 351$

3. (D) Except Agra, others are the capital of state.

4. (C) Except 218, others are the cube of any number.

5. (B) As, STAPLE $\Rightarrow 19 + 20 + 1 + 15 + 12 + 5 = 72 \Rightarrow 72 \times 6$ (Number of letters) = 432

    And, SPEAK $\Rightarrow 19 + 16 + 5 + 1 + 11 = 52 \Rightarrow 52 \times 5$ (Number of letters) = 260

    Similarly, RANDOM $\Rightarrow 18 + 1 + 14 + 4 + 15 + 13 = 65 \Rightarrow 65 \times 6$ (Number of letters) = 390

6. (C)

7. (B)

8. (C) The formula for finding the angle between clock hands = $\left(\dfrac{11M - 60H}{2} \right)$

    $= \left(\dfrac{11 \times 15 - 60 \times 3}{2} \right) = \dfrac{15}{2} = 7.5°$

9. (D) As, $(84 - 43)^2 = 1681$

    Similarly, $(68 - 45)^2 = 529$

10. (C) **x**dmr**j**/**x**dmrj/**x**dm**r**j

11. (D)

12. (C) **In the first column,**

    $14^2 - 13^2 = 27$

    In the second column,

    $24^2 - 18^2 = 252$

    In the third column,

    $?^2 - 24^2 = 208$

    $?^2 = 784$

    $\therefore$? = 28

13. (A) $196 + 49 - 22 \times 25 \div 5 \times 4 = 27$

    After changing + and ÷ ,

    $196 \div 49 - 22 \times 25 + 5 \times 4 = 27$

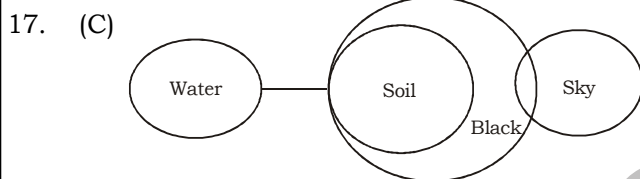 $4 - 22 \times 25 + 20 = 27$

    $4 - 570 = -566$

    $-566 = -566$

14. (C)

Hence, she is in North-East direction with respect to starting point.

15. (D)

Hence, E is the maternal uncle of C.

16. (D) 5. Cover page → 1. Preface → 2. Content → 3. Chapters → 4. Bibliography

17. (C)

I. True   II. False   III. True

Hence, Only conclusions I and III follow.

18. (C)   19. (B)

20. (B) As, (1 + 6 + 2 + 4) + (7 + 7 + 6 + 4) = 37

Similarly, (1 + 8 + 3 + 1) + (5 + 4 + 3 + 1) = 26

21. (D) As, MASTER → Alphabetical order → AEMRST

And, CENTRAL → Alphabetical order → ACELNRT

Similarly, POSTMAN → Alphabetical order → AMNOPST

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

26. (B) India Technical and Economic Cooperation (ITEC) Programme is an initiative of the Ministry of External Affairs, wherein participants from ITEC member countries are trained.

27. (C) Main purpose of these Committees is to provide a forum for informal discussions between the Government and Members of Parliament on policies and programmes of the Government and the manner of their implementation.

28. (B) 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 telecommunications 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.

29. (C) Somali legislators have elected former leader Hassan Sheikh Mohamud as the African country's next president.

30. (D) The Convention on the Rights of the Child (adopted on Nov. 20, 1989) is the first legally binding international instrument to incorporate the full range of human rights i.e. civil, cultural, economic, political and social rights.

32. (C) The book "A Season of Ghosts" has been authored by Ruskin Bond. It is an entertaining book, which includes interesting short stories about the mists and mellow magic of Bond's beloved mountains.

33. (A) Haryana sprinter Dharambir Singh is in news because he has been slapped an eight year ban by the National Anti-Doping Agency (NADA) because of his second dope-related offence. Earlier, he was barred from representing India in the 2016 Rio Olympics at the last minute for failing a dope test.

34. (A) The second national highway of Indian NH-6 is the major project of National Highway network of India. NH-6 run through the west to east corner of India via 6 states as well as many cities and towns. Length of KolkataHajira NH - 1949 km.

36. (A) Temperature coniferous forests covers the highest percentage of forest area in the world.

37. (C) Recently, the Ministry of AYUSH has decided to set up a central regulatory structure for AYUSH drugs as a part of Central Drugs Standard Control Organization (CDSCO) to enforce the provisions for Ayurvedic, Siddha, Unani and Homoeopathic drugs in coordination with the State regulatory authorities. The CDSCO is the national regulatory body for Indian pharmaceuticals and medical devices and is headquarters is located at New Delhi.

39. (A) An optical fiber is a thin, flexible, transparent fiber that acts as a wave guide or "light pipe" to transmit light between the two ends of the fiber. An optical fiber transmits light along its axis, by the process of total internal reflection. When light traveling in a dense medium hits a boundary at an angle larger than the "critical angle" for the boundary, the light will be completely reflected. This effect is used in optical fibers to confine light in the core.

40. (D) Article 67(b) in the Constitution of India states that a Vice President may be removed from his office by a resolution of the council of States passed by a majority of all the members of the council and the House of the People, but no resolution for the purpose of this clause shall be moved unless atleast fourteen days notice has been given of the intention to move the resolution.

41. (A) Blue green algae is used as a biofertilizer in rice crop. Blue green algae has the nitrogen fixing ability which enhances the production of rice.

42. (D) Haemophilia is a sex-linked recessive disorder. Clotting of blood is abnormally delayed in such a way that even a simple or small cut will result non stop bleeding in affected individual.

43. (B) The Battle of Haldighati was fought between the Mughal Empire and the forces of Mewar on June 21, 1576 at Haldighati in Rajasthan, India. It was a decisive victory for the Mughal Emperor Jalal ud-Din Muhammad Akbar's general Raja Man Singh against the Maharana Pratap Singh of Mewar. Akbar was 14 years old when he was crowned at Kalanaur in 1556.

44. (C) On 12 March, 1930, Gandhi started his civil disobedience movement by starting Dandi March from Sabarmati Ashram in Gujarat and reached Dandi on 6 April 1930 and broke the salt law.

46. (C) Creating firework colours is a complex endeavour, requiring considerable art and application of physical science. Strontium and barium both are alkaline earth metal and are extremely reactive. They both impart characteristic colour to flame. Strontium salts impart a red color to fireworks. Strontium compounds are also important for stabilizing fireworks mixtures. Barium is used to create green colors in fireworks, and it can also help stabilize other volatile elements.

47. (C) RDX is also known, but less commonly, as cyclonite, hexogen (particularly in Russian, French, German and German-influenced languages), T4, and, chemically, as cyclotrimethylenetrinitramine.

48. (D) RDX, initialism for Research Department Explosive, is an explosive nitroamine widely used in military and industrial applications. It is also known less commonly as cyclonite. Its chemical name is cyclotrimethylene trinitramine.

51. (C) Given :

$\Delta ABC \sim \Delta DEF$

$\dfrac{ar(\Delta ABC)}{ar(\Delta DEF)} = \dfrac{BC^2}{EF^2}$

$\dfrac{54}{ar(\Delta DEF)} = \dfrac{3^2}{4^2}$

$ar(\Delta DEF) = 54 \times \dfrac{16}{9} = 96$ cm²

52. (A) Inscribed circle radius of an equilateral triangle (r) = $\dfrac{a}{2\sqrt{3}}$

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

a = 6 cm

∴ Perimeter = 3 × 6 = 18 cm

53. (D) Area of trapezium = $\dfrac{1}{2}$ × sum of parallel sides × height

$105 = \dfrac{1}{2}$ × (9 + 12) × height

$105 = \dfrac{1}{2}$ × 21 × height

∴ Height = $\dfrac{105 \times 2}{21}$ = 10 m

54. (C) $7\sin^2\theta + 3\cos^2\theta = 4$

$7\sin^2\theta + 3(1 - \sin^2\theta) = 4$

$7\sin^2\theta + 3 - 3\sin^2\theta = 4$

$4\sin^2\theta + 3 = 4$

$4\sin^2\theta = 1$

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

∴ $\tan\theta = \dfrac{1}{\sqrt{3}}$

55. (B) $(a + b)^3 = a^3 + b^3 + 3ab(a + b)$

We get,

$(\sin\theta + \text{cosec}\theta)^3 = \sin^3\theta + \text{cosec}^3\theta + 3\sin\theta\text{cosec}\theta(\sin\theta + \text{cosec}\theta)$

$(2)^3 = \sin^3\theta + \text{cosec}^3\theta + 3 \times 2$

∴ $\sin^3\theta + \text{cosec}^3\theta = 8 - 6 = 2$

56. (B) $2 \text{ km/h} = \left(2 \times \dfrac{5}{18}\right) = \dfrac{5}{9} \text{ m/sec}$

$4 \text{ km/h} = \left(4 \times \dfrac{5}{18}\right) = \dfrac{10}{9} \text{ m/sec}$

Let the length of the train be x metres and its speed by y m/sec.

ATQ,

$\left(\dfrac{x}{y - \dfrac{5}{9}}\right) = 9$ and $\left(\dfrac{y}{y - \dfrac{10}{9}}\right) = 10$
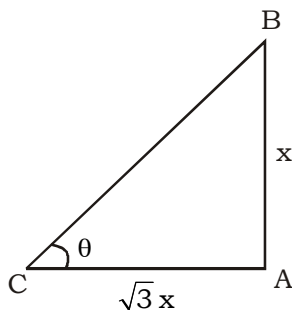
9y – 5 = x and 10(9y – 10) = 9x

9y – x = 5 and 90y – 9x = 100

On solving, we get,

x = 50 and y = $\dfrac{55}{9}$

∴ Length of the train = 50 m

57. (A) Let AB be the tree and AC be its shadow.

Let $\angle ACB = \theta$

ATQ,

$\dfrac{AC}{AB} = \sqrt{3}$

$\cot\theta = \sqrt{3}$

$\cot\theta = \cot 30°$

∴ θ = 30°

58. (C) Let the principal be P and rate of interest be R%.

∴ Required ratio = $\dfrac{\left(\dfrac{P \times R \times 6}{100}\right)}{\left(\dfrac{P \times R \times 9}{100}\right)} = \dfrac{6\,PR}{9\,PR} = 2:3$

59. (A) CP of 1 orange = $\left(\dfrac{350}{100}\right)$ = ₹ 3.50

    SP of 1 orange = $\left(\dfrac{48}{12}\right)$ = ₹ 4

    ∴ Gain% = $\left(\dfrac{0.50}{3.50}\times100\right)\%$ = $\dfrac{100}{7}\%$ = $14\dfrac{2}{7}\%$

60. (A) Total number of votes polled = (1136 + 7636 + 11628) = 20400

    ∴ Required percentage = $\left(\dfrac{11628}{20400}\times100\right)\%$ = 57%

61. (D) Since the month begins with a Sunday, to there will be five Sundays in the month.

    ∴ Required average = $\left(\dfrac{510\times5+240\times25}{30}\right)$ = $\dfrac{8550}{30}$ = 285

62. (D) $(3^{25} + 3^{26} + 3^{27} + 3^{28}) = 3^{25} \times (1 + 3 + 3^2 + 3^3) = 3^{25} \times 40$

    $= 3^{24} \times 3 \times 4 \times 10$

    $= (3^{24} \times 4 \times 30)$, which is divisible by 30.

63. (C) Let total number of children be x.

    ATQ,

    $x \times \dfrac{1}{8}x = \dfrac{x}{2}\times16$

    x = 64

    ∴ Number of notebooks = $\dfrac{1}{8}x^2 = \left(\dfrac{1}{8}\times64\times64\right) = 512$

64. (D) Speed upstream = 9 – 1.5 = 7.5 km/h

    Speed downstream = 9 + 1.5 = 10.5 km/h

    ∴ Total time taken = $\left(\dfrac{105}{7.5}+\dfrac{105}{10.5}\right)$ = 24 hours

65. (B) Let the total distance be x km.

    ATQ,

    $\dfrac{\left(\dfrac{1}{2}\right)x}{21}+\dfrac{\left(\dfrac{1}{2}\right)x}{24}=10$

    $\dfrac{x}{21}+\dfrac{x}{24}=20$

    15x = 168 × 20

    ∴ x = $\left(\dfrac{168\times20}{15}\right)$ = 224 km

66. (C) (A + B)'s 1 day's work = $\left(\dfrac{1}{15} + \dfrac{1}{10}\right) = \dfrac{1}{6}$

Work done by A and B in 2 days = $\left(\dfrac{1}{6} \times 2\right) = \dfrac{1}{3}$

Remaining work = $\left(1 - \dfrac{1}{3}\right) = \dfrac{2}{3}$

Now, $\dfrac{1}{15}$ work is done by A in 1 day.

$\dfrac{2}{3}$ work will be done by a in $\left(15 \times \dfrac{2}{3}\right)$ = 10 days

Hence, the total time taken = (10 + 2) = 12 days

67. (A) CI when interest compounded yearly = $\left[5000 \times \left(1 + \dfrac{4}{100}\right) \times \left(1 + \dfrac{\frac{1}{2} \times 4}{100}\right)\right]$

$= \left[5000 \times \dfrac{26}{25} \times \dfrac{51}{50}\right]$ = ₹ 5304

CI when interest is compounded half yearly = $\left[5000 \times \left(1 + \dfrac{2}{100}\right)^3\right]$

$= \left(5000 \times \dfrac{51}{50} \times \dfrac{51}{50} \times \dfrac{51}{50}\right)$ = ₹ 5306.04

∴ Difference = ₹ (5306.04 – 5304) = ₹ 2.04

68. (C) To reach the winning post A will have to cover a distance of (500 – 140)m, i.e., 360 m. While A covers 3 m, B covers 4 m

While A covers 360 m, B covers $\left(\dfrac{4}{3} \times 360\right)$ = 480 m

Thus, when A reaches the winning post, B covers 480 m and therefore remains 20 m behind.

69. (C) Let the number of 25 p, 10 p and 5 p coins be x, 2x and 3x respectively.
ATQ,

Sum of their values = $\left(\dfrac{25x}{100} + \dfrac{10 \times 2x}{100} + \dfrac{5 \times 3x}{100}\right)$

$30 = \dfrac{60x}{100}$

∴ $x = \dfrac{30 \times 100}{60}$ = 50

Hence, the number of 5 p coins = (3 × 50) = 150

70. **(C)** Suppose pipe A alone takes x hours to fill the tank.

Then, pipes B and C will take $\dfrac{x}{2}$ and $\dfrac{x}{4}$ hours respectively to fill the tank.

ATQ,

$$\dfrac{1}{x} + \dfrac{2}{x} + \dfrac{4}{x} = \dfrac{1}{5}$$
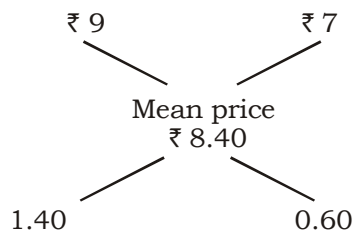
$$\dfrac{7}{x} = \dfrac{1}{5}$$

∴ x = 35 hours

71. **(D)** SP of 1 kg of mixture = ₹ 9.24

Gain = 10%

CP of 1 kg of mixture = $\left(\dfrac{100}{110} \times 9.24 \right)$ = ₹ 8.40

By the rule of alligation, we have C.P. of 1 kg sugar of 1ˢᵗ kind cost of 1 kg sugar of 2ⁿᵈ kind

₹ 9   ₹ 7

Mean price
₹ 8.40

1.40   0.60

Ratio of quantities of 1ˢᵗ and 2ⁿᵈ kind = 14 : 6 = 7 : 3
Let x kg of sugar of 1ˢᵗ be mixed with 27 kg of 2ⁿᵈ kind.
ATQ,
7 : 3 = x : 27

∴ x = $\left(\dfrac{7 \times 27}{3} \right)$ = 63 kg

72. **(C)** Required ratio = 27.5 : 21.5 = 55 : 43

73. **(D)** Required angle = $\dfrac{13.33}{100}$ × 360º = $\dfrac{40}{3 \times 100}$ × 360º = 48º

74. **(C)** Income tax earned by govt. = $\dfrac{20.17}{100}$ × 1200 = 242 crore (approx)

75. **(A)**

MEANINGS IN ALPHABETICAL ORDER

Endoderm	the innermost layer of cells or tissue of an embryo in early development, or the parts derived from this, which include the lining of the gut and associated structures	अंतःस्तर
Fallible	capable of making mistakes or being erroneous	अविश्वसनीय
Gynaecology	the branch of physiology and medicine which deals with the functions and diseases specific to women and girls, especially those affecting the reproductive system	स्त्री रोग
Infatuation	an intense but short-lived passion or admiration for someone or something	आशक्ति
Ligaments	short band of tough, flexible fibrous connective tissue which connects two bones or cartilages or holds together a joint	स्नायुबंधन
Momentous	(of a decision, event, or change) of great importance or significance, especially in its bearing on the future	सब से अहम
Naturalism	(in art and literature) a style and theory of representation based on the accurate depiction of detail	प्रकृतिवाद
Optimism	hopefulness and confidence about the future or the successful outcome of something	आशावाद
Optimist	a person who tends to be hopeful and confident about the future or the success of something	आशावादी
Parochial	relating to a church parish	संकीर्ण
Pessimism	a tendency to see the worst aspect of things or believe that the worst will happen; a lack of hope or confidence in the future	निराशावाद
Sculpture	the art of making two- or three-dimensional representative or abstract forms, especially by carving stone or wood or by casting metal or plaster	मूर्ति
Semblance	the outward appearance or apparent form of something, especially when the reality is different	दिखावा

SSC MOCK TEST - 342 (ANSWER KEY)

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

76. (B) Replace 'grandest than' by 'grander than those' as it takes a comparative degree.
77. (B) Replace 'lead against' by 'leads to', as subject of the sentence is lack of vitamins and minerals' i.e, singular. If an action or event leads to something, it causes that thing to happen or exist.
86. (B) Replace 'was' by 'were' as the subject is plural.
87. (D) No improvement