SSC MOCK TEST - 275 (SOLUTION)

1. (A) As,

    ABDE   FGIJ
    +5

    Similarly,

    IJLM   **NOQR**
    +5

2. (D) 1 : 8 : : **27** 64

    1^3 2^3 3^3 4^3
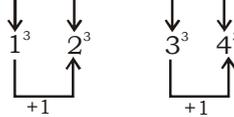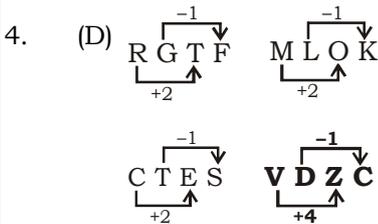   +1   +1
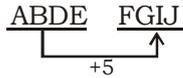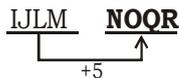
3. (A) Donkey brays and monkey chatters.

4. (D)
    −1
    R G T F   M L O K
    +2   +2

    −1
    C T E S   **V D Z C**
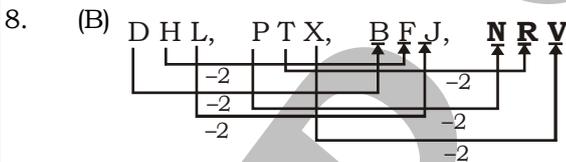   +2   **+4**

5. (B) 443 ⇒ 4 + 4 + 3 = 11
    633 ⇒ 6 + 3 + 3 = **12**
    821 ⇒ 8 + 2 + 1 = 11
    245 ⇒ 2 + 4 + 5 = 11

6. (D) Except Driving, others are related to physical work.

7. (A) Dwell → Dwindle → Dye → Dyke

8. (B) D H L,   P T X,   B F J,   **N R V**
    −2   −2
    −2   −2
    −2   −2

9. (B) 1   6   15   **28**   45   66   91
    +5   +9   +13   +17   +21   +25
    +4   +4   +4   +4   +4

10. (B) As,

    B L A C K S M I T H
    +1 +2 +1 +2 +1 +2 +1 +2 +1 +2
    C N B E L U N K U T

    Similarly,

    C H I L D R E N
    +1 +2 +1 +2 +1 +2 +1 +2
    D J J N E T F P
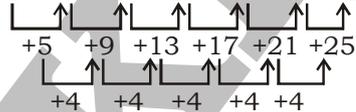
11. (D) $17 + 17 \Rightarrow 17 \times 17 = 289|5 \Rightarrow 2895$

   $18 + 18 \Rightarrow 18 \times 18 = 324|5 \Rightarrow 3245$

   $19 + 19 \Rightarrow 19 \times 19 = 361|5 \Rightarrow 3615$

   $23 + 23 \Rightarrow 23 \times 23 = 529|5 \Rightarrow$ **5295**

12. (A) Triangle $1 \rightarrow 3^2 = 9$ and $4^2 = 16$ hence 916

   Triangle $2 \rightarrow 2^2 = 4$ and $5^2 = 25$ hence 425

   Similarly, $1^2 = 1$ and $7^2 = 49$

   Hence, 149 is the right answer.

13. (C)

14. (C) $5 \div 3 - 25 + 20 = 20 \times 39$

   After changing the signs as per the given details,

   $5 \times 3 + 25 - 20 \div 20 = 39$

   $15 + 25 - 1 = 39$

   $40 - 1 = 39$

   $39 = 39$

15. (A) June – 5 days

   July – 31 days

   August – 15

   $\Rightarrow \dfrac{51}{7}$ = Remainder 2 and Wednesday + 2 = Friday.

16. (A) P @ Q $\rightarrow$ P is the wife of Q   ...(1)

   Q \$ T $\rightarrow$ Q is the brother of T   ...(2)

   T # U $\rightarrow$ T is the daughter of U

   Q is the son of U   ...(3)

   U * W $\rightarrow$ U is the father of W.

   From (1) and (3),

   We can conclude that U is the father-in-law of P.

17. (B) The girl is the daughter of the sister of Sandeep's father. Hence, the girl is the cousin of Sandeep.

18. (C)

   Hence, he is going in the South-West direction.

19. (C) From position I and III, considering % as the common face.

we have,

%	×	o
%	+	$

Hence according to rule sign '×' is opposite to sign '+'.

20. (B) There are 28 triangles in the figure.

21. (D)

```
   M      O      U      S      E
+3|    +3|    +0|          |−2   |−2
   P      R      U      Q      C
```

Similarly,

```
   S      H      I      F      T
+3|    +3|    +0|    −2|    −2|
   V      K      I      D      R
```

22. (B)

23. (C) The position of each person which satisfies the above statements is G D E F B C A

Hence, it's clear that 'G' is on extreme left.

24. (A) MERC**Y** cannot be formed from CUMBERSOME.

25. (B)

26. (C) Direct demand- Commodities or services which satisfy our wants directly are said to have direct demand.

27. (A) The book 'A History of Sikhs' is authored by Khuswant Singh.

28. (B) Fasciola hepatica, also known as the common liver fluke or sheep liver fluke, is a parasitic trematode (fluke or flatworm, a type of helminth) of the class Trematoda, phylum Platyhelminthes.

29. (A) It's the Magnesium hydroxide which is present in Milk of Magnesia. It is a laxative that is used to treat constipation, by drawing water into the intestines.

30. (A) The final boundary between the Earth and the outer space is called magnetosphere created due to solar wind. It is a region in which charged particles are controlled by the Earth's magnetic field and protect the Earth from harmful substances.

31. (D) Speaker of LoK Sabha is empowered to take a decision on matter of Anti Defection under Tenth Schedule of constitution.

32. (B) Harshavadhana wrote the play 'Nagananda' in Sanskrit language. Nagananda is the story of how Jimutavahana prince of vidhyadara gives up his own body to stop a sacrifice of serpents to the divine Garuda. Harsha was an Indian emperor who ruled North India from 606 to 647 CE.

36. (C) A centrally planned economy is an economic system in which the state or government makes economic decisions rather than the these being made by the interaction between consumers and businesses.

37. (A) Karen Uhlenb eck is an Americanmathematician and a founder of modern geometric analysis.

38. (B) Prolactin is a hormone that is secreted by the pituitary gland in the brain which is responsible for the making milk by alveoli in breast. This hormone rises when the baby suckles the breast.

40. (C) Red data book contains data of all plant endangered species. This was founded in 1964 by IUCN and is a comprehensive inventory of the state of almost all endangered species. The book has got three folded classification namely Lower risk, Threatened, and extinct.

43. (D) TV remote control works on the principle of Infrared Technology.

44. (B) Veteran Folk musician Sonam Tshering Lepcha has recently passed away at Kalimpong, West Bengal at the age of 92.

46. (C) Gastric bypass and other types of weight-loss surgery, collectively known as bariatric surgery, make surgical changes digestive system.

49. (A) Rajya Sabha is Council of states and it is also known as the upper house of the Parliament of India. It have members from all states known as member of Parliament. Punjab have Seven members in Rajya Sabha.

50. (B) Guru Tegh Bahadur was the successor of Sikh Guru Har Krishan. He followed the preachings of Guru Nanak. He resisted the forced conversions of Kashmiri Pandits and non-Muslims to Islam and due to that he was beheaded in 1675 on the orders of Mughal emperor Aurangzeb in Delhi for refusing to convert to Islam.

51. (D) Let the radius of smaller circle = r

    ∴ Radius of bigger circle = 14 – r

    ATQ,

    $\pi r^2 + \pi (14 - r)^2 = 130 \pi$

    $r^2 + 196 + r^2 - 28r = 130$

    $2r^2 - 28r + 66 = 0$

    $r^2 - 14r + 33 = 0$

    $(r - 11)(r - 3) = 0$

    $r = 11, 3$

    As r is the radius of smaller circle.

    ∴ $r = 3$

52. (D) $x + y = 6$ .... (i)

    $(x + y)^3 = 6^3$

    $x^3 + y^3 + 3xy(x + y) = 216$

    $72 + 3xy \times 6 = 216$

    $18xy = 216 - 72$

    $xy = \dfrac{144}{18} = 8$

    $x = \dfrac{8}{y}$

    Now,

    $x + y = 6$

    $\dfrac{8}{y} + y = 6$

    $8 + y^2 = 6y$

    $y^2 - 6y + 8 = 0$

    $(y - 4)(y - 2) = 0$

    $y = 4, 2$

Put y = 4 in (I)	Put y = 2 in (I)
∴ x = 2	∴ x = 4

    As x > y, therefore

    x = 4, y = 2

    x – y = 4 – 2 = 2

53. (A) $\sin A \cos A \ (\tan A - \cot A) = \sin A \cos A$

$\left(\dfrac{\sin A}{\cos A} - \dfrac{\cos A}{\sin A} \right) = \sin A \cos A$

$\left(\dfrac{\sin^2 A - \cos^2 A}{\cos A \sin A} \right) = \sin^2 A - \cos^2 A$

$= \sin^2 A - (1 - \sin^2 A)$

$= 2 \sin^2 A - 1$

54. (D) Each side in doubled i.e there is an increase of 100% in each side.

% increase in Surface Area $= 100 + 100 + \dfrac{100 \times 100}{100} = 300\%$
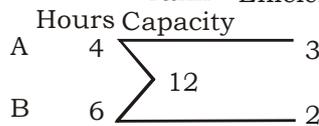
55. (B) Let the exterior angle = x

Interior angle = 3x

3x + x = 180°

$x = \dfrac{180}{4} = 45°$

∴ Number of sides $= \dfrac{360°}{45°} = 8$

56. (D)

```
              Tank    Efficiency
        Hours Capacity
   A      4  ⟩          3
             ⟩  12
   B      6  ⟩          2
```

In two hours, working alternatively starting with A tank filled = 3 + 2 = 5
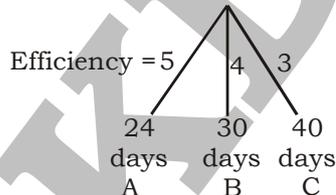In 4 hours, tank filled = 2 × 5 = 10
Tank left unfilled = 12 – 10 = 2
3 Parts of tank are filled by A is 1 hours.

2 Parts of tank will be filled by A in $\dfrac{2}{3}$ hours

∴ Total time taken $= 4 + \dfrac{2}{3} = 4\dfrac{2}{3}$ hours

57. (A)

```
          Total work = 120
Efficiency = 5    4    3
           24    30    40
          days  days  days
           A     B     C
```

Efficiency of A and B together = 5 + 4 = 9
Work done by A and B in 4 days = 9 × 4 = 36
Work done before C left = 120 – 36 = 84
Efficiency of A, B and C = 5 + 4 + 3 = 12

Number of days for which C worked $= \dfrac{84}{12} = 7$

∴ Work was completed in 7 + 4 = 11 days

58. (B) Let one of the numbers = x

Second number = $\dfrac{2}{5} x$

ATQ,

$x + \dfrac{2}{5} x = 50$

$\dfrac{7x}{5} = 50$

$x = \dfrac{250}{7}$

∴ The numbers are $\dfrac{250}{7}$, $\dfrac{100}{7}$

59. (B) $\sqrt[3]{79.507} + \sqrt[3]{0.079507} + \sqrt[3]{0.000079507}$

$= \sqrt[3]{\dfrac{79507}{1000}} + \sqrt[3]{\dfrac{79507}{1000000}} + \sqrt[3]{\dfrac{79507}{1000000000}}$

$= \dfrac{43}{10} + \dfrac{43}{100} + \dfrac{43}{1000}$

$= 4.3 + 0.43 + 0.043 = 4.773$

60. (B) $\dfrac{\cos \alpha}{\sin \beta} = n$ ...... (i)

$\dfrac{\cos \alpha}{\cos \beta} = m$ ..... (ii)

Divide equation (ii) by (i),

$\dfrac{\cos \beta}{\sin \beta} = \dfrac{n}{m}$ [Squaring]

$\dfrac{\cos^2 \beta}{\sin^2 \beta} = \dfrac{n^2}{m^2}$

$m^2 \cos^2 \beta = n^2 \sin^2 \beta$

$m^2 \cos^2 \beta = n^2 (1 - \cos^2 \beta)$

$m^2 \cos^2 \beta = n^2 - n^2 \cos^2 \beta$

$m^2 \cos^2 \beta + n^2 \cos^2 \beta = n^2$

$\cos^2 \beta (m^2 + n^2) = n^2$

$\cos^2 \beta = \dfrac{n^2}{m^2 + n^2}$

61. (C) We know that,
The angle in same segment are equal.

$\angle BDC = \angle BAC$

Now in $\triangle ABC$,

$\angle A + \angle B + \angle C = 180°$

$\angle A + 78° + 42° = 180°$

$\angle A = 180° - 120°$

$\angle A = 60°$

$\angle BAC = \angle BDC = 60°$

62. (B) Average of first four numbers a, b, c and d = 10

Total of first four numbers = 10 × 4 = 40 ....(1)

Average of last four numbers b, c, d and e = 8

Total of last four numbers = 8 × 4 = 32 ....(2)

From equation (1) and (2),

a + b + c + d - (b + c + d + e) = 40 - 32

a – e = 8

e = 10

a = 8 + e

a = 8 + 10 = 18

63. (A) Let number 'A' and 'B' be Kx and Ky.

A + B = Kx + K y = K(x + y)

$$\frac{A^3 - B^3}{A^2 + B^2 + AB} = \frac{(A - B)(A^2 + B^2 + AB)}{(A^2 + B^2 + AB)}$$

= A - B = Kx - Ky = K(x - y)

HCF of (A + B) and $\dfrac{A^3 - B^3}{A^2 + B^2 + AB}$ is K.

64. (A) $47^{13/2} \div (47^{3/2} \times 47^2) = [47^{1/3}]^x$

$47^{x/3} = 47^{13/2} \div 47^{\frac{3}{2}+2}$

$47^{x/3} = 47^{13/2} \times \dfrac{1}{47^{\frac{7}{2}}}$

$47^{x/3} = 47^{\frac{13}{2}-\frac{7}{2}} = 47^{6/2} = 47^3$

$47^{x/3} = 47^3$

$\dfrac{x}{3} = 3 \Rightarrow x = 9$

65. (C) A can do $\dfrac{1}{3}$ of a piece of work in 5 days.

A can do 1 unit of work in $\dfrac{5 \times 3}{1} = 15\,\text{days}$

B can do $\dfrac{3}{4}$ of a piece of work in 9 days.

B can do 1 unit of work in $\dfrac{9 \times 4}{3} = 12\,\text{days}$

C can do $\dfrac{1}{2}$ of a piece of work in 5 days.

C can do 1 unit of work in $\dfrac{5 \times 2}{1} = 10\,\text{days}$

$$A = 15 \quad \begin{vmatrix} & 4 \\ & \end{vmatrix}$$
$$B = 12 \quad \Big| 60 \Big| \quad 5$$
$$C = 10 \quad \begin{vmatrix} & 6 \end{vmatrix}$$

$$T(A + B + C) = 15$$

$$(A + B + C) = \frac{60}{15} = 4 \, \text{days}$$

66. **(D)** $A = \dfrac{\pi}{2} - B$

taking tan both sides,

$$\tan A = \tan\left(\frac{\pi}{2} - B\right)$$

$$\tan A = \cot B$$

$$\tan A = \frac{1}{\tan B}$$

$B + C = A$

taking tan both sides,

$\tan (B + C) = \tan A$

$$\frac{\tan B + \tan C}{1 - \tan B \tan C} = \tan A$$

$$\frac{\tan B + \tan C}{1 - \tan B \tan C} = \frac{1}{\tan B}$$

$\tan^2 B + \tan B \tan C = 1 - \tan B \tan C$

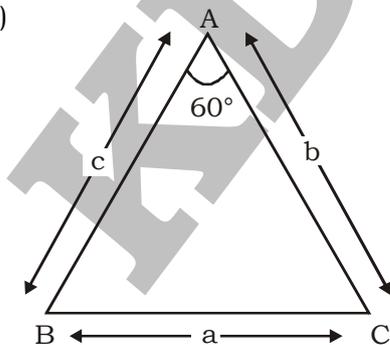$\tan^2 B + 2 \tan B \tan C = 1$

$\tan B (\tan B + 2 \tan C) = 1$

$$\tan B + 2 \tan C = \frac{1}{\tan B}$$

∴ $\tan A = \tan B + 2 \tan C$

67. **(B)**

$a + b + c = 20$

Area of $\triangle ABC = \dfrac{1}{2} \times AB \times AC \times \sin A$

$$10\sqrt{3} = \frac{1}{2} \times c \times b \times \sin 60°$$

$$10\sqrt{3} = \frac{1}{2} \times c \times b \times \frac{\sqrt{3}}{2}$$

bc = 40

$$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$$

$$\cos 60° = \frac{b^2 + c^2 - a^2}{2bc}$$

$$\frac{1}{2} = \frac{b^2 + c^2 - a^2}{2bc}$$

$b^2 + c^2 - a^2 = bc$

$(b + c)^2 - 2bc - bc - a^2 = 0$

$(20 - a)^2 - 3 \times 40 - a^2 = 0$

$400 + a^2 - 40a - 120 - a^2 = 0$

$40a = 280$

$$a = \frac{280}{40} = 7$$

b + c = 20 - a = 20 - 7 = 13   ....(i)

bc = 40

$(b - c)^2 = (b + c)^2 - 4ac$

$b - c = \sqrt{(13)^2 - 4 \times 40}$

b - c = 3   ....(ii)

Addidng equation (i) and (ii),

$\begin{aligned} b + c &= 13 \\ \underline{b - c} &= \underline{\ 3} \\ 2b &= \ \ 16 \end{aligned}$

b = 8

c = 13 - 8 = 5

Hence, sides of triangle are 7 cm, 8 cm and 5 cm.

68. (B) Let Initial money be ₹ x.

ATQ,

$$x \times \frac{25}{100} \times \frac{25}{100} \times \frac{25}{100} = 2$$

∴ $x = 64 \times 2 = ₹ 128$

69. (A) Speed = 72 km/hr = $72 \times \frac{5}{18}$ = 20m/s

∴ Time = $\frac{160}{20}$ = 8 sec

70. (B) $x + \dfrac{1}{9x} = 4$

$3x + \dfrac{1}{3x} = 12$

$9x^2 + \dfrac{1}{9x^2} = 144 - 2$

$9x^2 + \dfrac{1}{9x^2} = 142$

71. (D) $27a^3 - 54a^2b + 36ab^2 - 8b^3 = (3a-2b)^3$

$= (6 + 6)^3$

$= 12^3 = 1728$

72. (C) Mobile phones sold by Apple $= \dfrac{30}{40} \times 100 = 75\%$

Mobile phones sold by Nokia $= \left(\dfrac{40}{55} \times 100\right)\% = 72.72\%$

Mobile phones sold by Samsung $= \left(\dfrac{70}{80} \times 100\right)\% = 87.5\%$

Mobile phones sold by Moto $= \left(\dfrac{60}{75} \times 100\right)\% = 80\%$

Hence, mobiles phones sold by Samsung is maximum.

73. (B) Unsold mobiles of Apple = (40,000 - 30,000) = 10,000

Unsold mobiles of Nokia = (65,000 - 40,000) = 25,000

Unsold mobiles of Samsung = (80,000 - 70,000) = 10,000

Unsold mobiles of Moto = (75,000 - 60,000) = 15,000

Unsold mobiles of one-plus = (35,000 - 35,000) = 0

Average number unsold mobiles of all the companies

$= \dfrac{10,000 + 25,000 + 10,000 + 15,000}{5} = \dfrac{60,000}{5} = 12,000$

74. (C) Total production of phone in all companies = (40 + 55 + 80 + 75 + 35) = 285 thousands

Required% $= \left(\dfrac{55}{285} \times 100\right) = 19.30\% \approx 19\%$

75. (A) Unsold mobile phones of Apple = (40 - 30) = 10

Unsold mobiles phones of Nokia = (55 - 40) = 15

Required ratio = 10 : 15 = 2 : 3

MEANINGS IN ALPHABETICAL ORDER

Ailments	An illness	रोग
Blues	Feelings of melancholy, sadness, or depression	अवसाद, निराशा
Capricious	Of strange nature	सनकी
Depression	A state of feeling sad	अवसाद, निराशा
Despair	Be without hope	निराशा
Dirge	A lament for the dead	शोकगीत
Docile	Ready to accept control or instruction; submissive	आज्ञाकारी
Effete	Having lost character, vitality, or strength	निर्बल
Elation	Great happiness	हर्षोल्लास
Elevation	The action or fact of raising or being raised to a higher or more important level, state, or position	उन्नति
Extravagance	Wastefulness	फिजूलखर्ची
Flattering	(of a person or their remarks) full of praise and compliments	प्रशंसापूर्ण चापलूसी
Humiliation	A feeling of being ashamed or a state of disgrace	अपमान, निरादर
Infallible	Incapable of making mistakes or being wrong	अचूक
Irrevocable	Not able to be changed, reversed	अपरिवर्तनीय
Merriment	Cheerfulness	हर्ष
Quack	A person, who dishonestly pretends to have medical skills	झोलाछाप डॉक्टर
Reduction	The action or fact of making something smaller or less in amount, degree, or size	कटौती
Relinquish	Give up	छोड़ देना, त्यागना
Remittance	A a sum of money sent in payment	भेजी गई रकम
Render	Provide or give (a service, help, etc.)	सेवा/सहायता आदि देना
Resilient	(of a substance or object) able to recoil or spring back into shape after bending, stretching, or being compressed	लचीला
Resistance	The refusal to accept or comply with something	प्रतिरोध
Retaliate	Make an attack or assault in return	जवाबी हमला करना
Scintillating	Sparkling or shining brightly	चमकता हुआ
Sensuous	Relating to the senses	कामुक
Shrewd	Cunning	धूर्त, चालाक
Stinging	Feeling a sharp tingling or burning pain or sensation	चुभता हुआ
Tenacious	Tending to keep a firm hold of something	दृढ़
Tropical	Peculiar to the tropics	उष्णकटिबंधीय

SSC MOCK TEST - 275 (ANSWER KEY)

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

76. (C) Change 'would' into 'will'. The sentence is of future conditional sentence. The first action is in Simple Present Tense, so the following sentence should be Future Indefinite Tense.

77. (B) Change 'rather impressed' into 'impressed rather' as 'rather than' must be followed by same structure of words which are two alternatives.

90. (D) The correct spelling of Remittence is Remittance, Resillient is Resilient and Retalaite is Retaliate.

91. (A) The correct spelling of caprecious is capricious, extravagence is extravagance and tenecious is tenacious.