SSC MOCK TEST - 293 (SOLUTION)

1. (B) 19 : 484 :: 38 : **1681**
   $(19+3)^2$ $(38+3)^2$

2. (D) As,
   LOGIC $\Rightarrow$ 12 + 15 + 7 + 9 + 3 = 46
   Similarly,
   SCIENCE $\Rightarrow$ 18 + 3 + 9 + 5 + 14 + 3 + 5 = **57**

3. (B) Sun appears in the Day, while Stars appears in the Night.

4. (D) D $\rightarrow$ 4
   H $\rightarrow$ 8
   P $\rightarrow$ 16
   U $\rightarrow$ **21**
   Except U, the alphabetical place value of others are divisible by 4.

5. (C) Except 291, others are the divisible by 5.

6. (D) Except Bowl, others are Cutlery.

7. (D) 5. Scope $\rightarrow$ 3. Scoreboard $\rightarrow$ 4. Scorn $\rightarrow$ 1. Scratch $\rightarrow$ 2. Screw

8. (B) 4, 10, 33, 136, 685, **4116**
   ×2+2 ×3+3 ×4+4 ×5+5 ×6+6

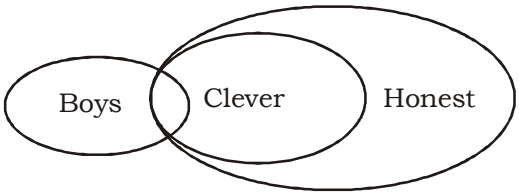
9. (B) L U, M T, N S, O R, **P Q**
   −1 −1 −1 −1
   +1 +1 +1 +1

10. (B) $\sqrt{49} \times \sqrt{225} = 7 \times 15 = 105$
    $\sqrt{81} \times \sqrt{289} = 9 \times 17 = 153$
    $\sqrt{121} \times \sqrt{361} = 11 \times 19 =$ **209**

11. (C) As,
    8 × 10 = 80
    Similarly,
    11 × **10** = 110

12. (C) 35 + 49 × 7 – 20 ÷ 10
    After changing the signs as per the given detail,
    35 – 49 ÷ 7 + 20 × 10
    = 35 – 7 + 200 = **228**

13. (B)



Conclusion:

I. False II. True III. False

Hence, Conclusion II follows

14. (C) As,

K I N G F I S H E R

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

+ $ @ * ! $ > < ^ ?

Similarly,

F I N I S H E R

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

! $ @ $ > < ^ ?

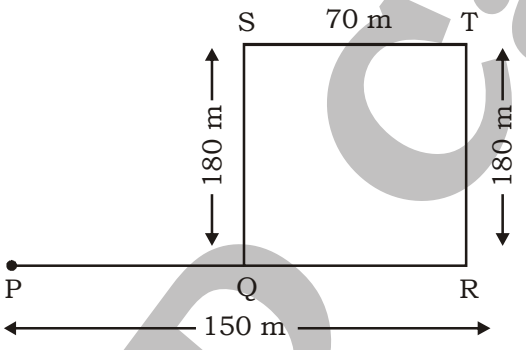
15. (B) Time $\rightarrow$ 3 : 24

Angle made by hour hand = $3 \times 30 = 90°$

Angle made by minute hand = $24 \times \frac{11}{2} = 132°$

$\therefore$ Required Angle = $132° - 90° = 42°$

16. (B)



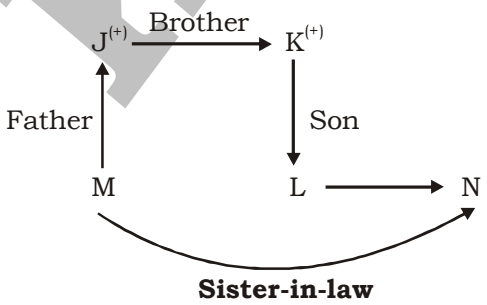
PQ = 150 – 70

PQ = 80 m

Hence, Divya is 80 m East from her starting position.

17. (B)

18. (C)



19. (B)

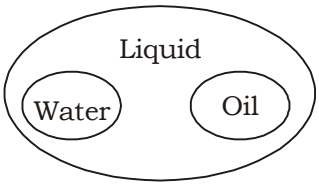
20. (C) Number of days from 10th March to 25th September = 21 + 30 + 31 + 30 + 31 + 31 + 25 = 199

Number of odd days = $\frac{199}{7} \Rightarrow 3$

$\therefore$ Required day = Friday + 3 = Monday

21. (D) c**d**e**f**/cd**e**f/**c**de**f**

22. (C)



23. (B)

24. (A)

25. (D) **G E A R**

44 55 42 66

27. (C) In chittodgarh fort built in honour of Jaimal and Kalla, heroes, who laid down their lives in the 1568 siege by Emperor Akbar. Chittodgarh fort is a UNESCO World Heritage Site.

28. (B) The leader of the bhakti movement focusing on the Lord as Rama was Ramananda. Very little is known about him, but he is believed to have lived in the first half of the 15th century.

29. (C) Metal oxides are basic in nature because they react with water to form bases. Moreover, the oxides turn moist red litmus paper blue and blue remains blue.

30. (C) Jat and Sawar are ranks in Mansabdari system, prevalent in Mughal time especially efficient in akbar's reign. Zat rank was conferred by the kings on the Mansabdar and Sawar was decided based on cavalry.

31. (B) President of India will submit resignation to Vice-President. Article 56 of the Indian Constitution makes it clear that the term of the President is five years from the date on which he enters the office.

32. (C) Vivekananda Rock Memorial is a popular tourist monument in Kanyakumari, India.

34. (A) Tsunami are waves caused by sudden movement of the ocean surface due to earthquakes, landslides on the sea floor, land slumping into the ocean, large volcanic eruptions or meteorite impact in the ocean.

35. (D) The acids in the acid rain react with calcium carbonate of marble and degrade it. The phenomenon is called Marble cancer. Acidic rain fall on Taj Mahal thus the monument got corroded by the harmful chemicals.

36. (C) Carbon monoxide reduces the oxygen carrying capacity of the blood.

38. (B) The Danube was once a long-standing frontier of the Roman Empire and today is the river running through the largest number of countries in the world.

39. (A) Humayun's heir, Akbar, was born in exile and was only 13 years old when his father died. Akbar's reign holds a certain prominence in history; he was the ruler who actually fortified the foundations of the Mughal Empire. After a series of conquests, he managed to subdue most of India.

41. (D) Fiscal deficits occur when a government's total expenditures exceed the revenue that it generates, excluding money from borrowing. Primary deficit is the fiscal deficit for the current year minus interest payments on previous borrowings.

43. (C) IIP is a key economic indicator of the manufacturing sector of the economy. There is a lag of six weeks in the publication of the IIP index data after the reference month ends. IIP index is currently calculated using 2011-2012 as the base year.

46. (C) A budget deficit occurs when expenses exceed revenue and indicate the financial health of a country. The government generally uses the term budget deficit when referring to spending rather than businesses or individuals. Accrued deficits form national debt.

48. (A) Sunda Strait, Indonesian Selat Sunda, channel, 16–70 miles (26–110 km) wide, between the islands of Java (east) and Sumatra, that links the Java Sea (Pacific Ocean) with the Indian Ocean (south).

49. (B) BharatPe has rolled-out its innovative lending product- Distributor to Retailer (D2R) Finance which will focus specifically on empowering Small and Medium Enterprises.

51. (B) $14+6\sqrt{5}=14+2\times3\times\sqrt{5}$ = 9 + 5 + 2 × 3 × $\sqrt{5}$

$=(3)^2+\left(\sqrt{5}\right)^2+2\times3\times\sqrt{5}=\left(3+\sqrt{5}\right)^2$

$\therefore\quad\sqrt{14+6\sqrt{5}}=\sqrt{\left(3+\sqrt{5}\right)^2}=3+\sqrt{5}$

52. (A) HCF of a and b = 12

So, numbers = 12x and 12y, where x and y are prime to each other.

$\because$ a > b > 12

$\therefore$ a = 36 and b = 24

53. (D) $1+(3+1)(3^2+1)(3^4+1)(3^8+1)(3^{16}+1)(3^{32}+1)$

$=1+\frac{(3-1)(3+1)}{3-1}(3^2+1)(3^4+1)(3^8+1)(3^{16}+1)(3^{32}+1)$

$=1+\frac{\left(3^2-1\right)\left(3^2+1\right)\left(3^4+1\right)\left(3^8+1\right)\left(3^{16}+1\right)\left(3^{32}+1\right)}{2}$

$=1+\frac{\left(3^4-1\right)\left(3^4+1\right)\left(3^8+1\right)\left(3^{16}+1\right)\left(3^{32}+1\right)}{2}$

$=1+\frac{\left(3^8-1\right)\left(3^8+1\right)\left(3^{16}+1\right)\left(3^{32}+1\right)}{2}$

$=1+\frac{\left(3^{16}-1\right)\left(3^{16}+1\right)\left(3^{32}+1\right)}{2}$

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

$=1+\frac{\left(3^{64}-1\right)}{2}=\frac{3^{64}+1}{2}$

54. (A) $\frac{\cot\theta}{(1-\sin\theta)(\sec\theta+\tan\theta)}$

$$= \frac{\frac{\cos\theta}{\sin\theta}}{(1-\sin\theta)\left(\frac{1}{\cos\theta}+\frac{\sin\theta}{\cos\theta}\right)} = \frac{\frac{\cos\theta}{\sin\theta}}{(1-\sin\theta)\left(\frac{1+\sin\theta}{\cos\theta}\right)}$$

$$= \frac{\frac{\cos\theta}{\sin\theta}}{\frac{1-\sin^2\theta}{\cos\theta}} = \frac{\cos\theta}{\sin\theta}\times\frac{\cos\theta}{\cos^2\theta}$$

$$= \frac{1}{\sin\theta} = \operatorname{cosec}\theta$$

55. (C) $(4M + 3B) \times 15 = (8M + 10B) \times 6$
$60M + 45B = 48M + 60B$
$12M = 15B$
$15B = 12 \times 80$

$$1B = \frac{12\times 80}{15} = ₹\ 64$$

∴ Required ratio = 80 : 64 = 5 : 4

56. (B) Let the total number of candidates be 100.
70 candidates passed in English and 30 candidates failed in it.
10 candidates failed in English and Mathematics both.
Out of 30 failed in English, 10 failed in Mathematics also.
So, (30 – 10) = 20 failed in English alone.
Similarly, (20 – 10) = 10 failed in Mathematics alone.
Total number of failure = 20 + 10 + 10 = 40
(100 – 40) = 60 candidates passed in both the subjects.
Now, if 60 candidates passed, total strength = 100

∴ For 168 candidates, total strength = $\frac{100}{60}\times 168 = 280$

57. (D) Distance = 384 km
Let the speed of train be x km/hr.
ATQ,

$$\frac{384}{x-16} - \frac{384}{x} = 2$$

$$\frac{384x - 384x + 6144}{x^2 - 16x} = 2$$

$2x^2 – 32x – 6144 = 0$
$x^2 – 16x – 3072 = 0$
$x^2 – 64x + 48x – 3072 = 0$
$x(x – 64) + 48(x – 64) = 0$
$(x + 48)(x – 64) = 0$
$x = – 48, 64$ (Negative value of x is not possible, as speed can't be negative)

∴ Speed of train = 64 km/hr

58. (B) $x + y + z = 17$

$x + z = 17 - y$

Squaring both sides,

$(x + z)^2 = (17 - y)^2$

$x^2 + z^2 + 2xz = 289 + y^2 - 34y$

$(153 - y^2) + 2(y^2) = 289 + y^2 - 34y$ $[x^2 + z^2 = 153 - y^2$ and $xz = y^2]$

$153 - y^2 + 2y^2 = 289 + y^2 - 34y$

$34y = 289 - 153$

$34y = 136$

$$y = \frac{136}{34} = 4$$

Now, $(x - z)^2 = x^2 + z^2 - 2xz$

$(x - z)^2 = (153 - y^2) - 2y^2$

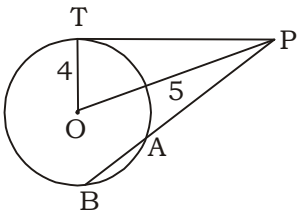
$(x - z)^2 = (153 - 4^2) - 2 \times 4^2$

$(x - z)^2 = 153 - 16 - 32$

$(x - z)^2 = 105$

$\therefore \quad x - z = \sqrt{105}$

59. (A)



In Right triangle OTP,

$OT^2 + PT^2 = OP^2$

$(4)^2 + (PT)^2 = (5)^2$

PT = 3 cm

Let, PA = x

$PT^2 = PA \times PB$

$(3)^2 = x(x + 8)$

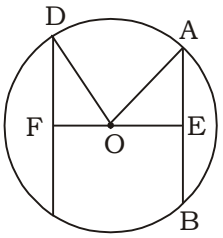
On $x = 1$, it satisfied the equation.

$\therefore$ PB = PA + AB

PB = $x + 8$

= 1 + 8 = 9 cm

60. (C)



AB = 16 cm, OE = 15 cm

In right ΔOEA,

$OE^2 + AE^2 = OA^2$

$OA^2 = 15^2 + 8^2$

$OA^2 = 289$

$OA = 17$

OA = OD = 17 cm

OF = 8 cm

In right ΔOFD,

$OF^2 + DF^2 = OD^2$

$DF^2 = 17^2 - 8^2$

$DF^2 = 225$

DF = 15 cm

$\therefore$ Length of chord = 15 × 2 = 30 cm

61. (B) Seats in executive class = 10% of 500 = 50

Seats in chair car = 500 – 50 = 450

Booking seats in total = 85% of 500 = 425

Booking in executive class = 96% of 50 = 48

Booking in chair class = (425 – 48) = 377

$\therefore$ Empty seats in chair class = 450 – 377 = 73

62. (A) Let the amount invested by Ram and Shyam is $3x$ and $5x$ respectively and after 6 month Mohan joined amount equal to Shyam.

Then, Ratio of Ram, Shyam and Mohan in profit = $3x \times 12 : 5x \times 12 : 5x \times 6 = 6 : 10 : 5$

63. (C) Let the side of the square be x.

Diangonal of square = $\sqrt{2}$ × (side)

$12\sqrt{2} = \sqrt{2} \times x$

$x = 12$

Perimeter of square = 12 × 4 = 48 cm

Now, perimeter of equilateral triangle = 48 cm

Side of equilateral triangle = $\frac{48}{3}$ = 16 cm

$\therefore$ Area of equilateral triangle = $\frac{\sqrt{3}}{4} \times (16)^2 = 64\sqrt{3}$ cm^2

64. (B) Let the share of Q be ₹ x.

Share of P = ₹ (30600 – x)

ATQ,

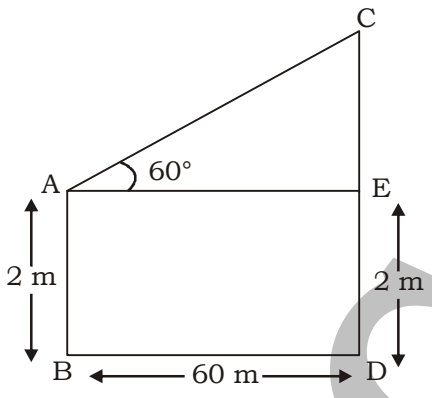
$$x \times \left(1+\frac{4}{100}\right)^3 = (30600 - x)\left(1+\frac{4}{100}\right)^2$$

$$x \times \frac{104}{100} = 30600 - x$$

$$\frac{204}{100}x = 30600$$

$$x = \frac{30600 \times 100}{204} = ₹\ 15000$$

65. (A)



Let height of man be AB and height of pole be CD.

AB =ED = 2 m

AE = BD = 60 m

$\angle CAE = 60°$

In ΔACE,

$$\tan 60° = \frac{CE}{AE}$$

$$\sqrt{3} = \frac{CE}{60}$$

$$CE = 60\sqrt{3} = (60 \times 1.732)\text{m} = 103.920 \text{ m}$$

Height of the pole = (103.92 + 2) = 105.92 m

66. (C) $\text{cosec}\,\theta + \cot\theta = 3$ .....(i)

we know that,

$\text{cosec}^2\theta - \cot^2\theta = 1$

$(\text{cosec}\,\theta + \cot\theta)(\text{cosec}\,\theta - \cot\theta) = 1$

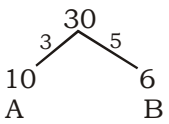
$\text{cosec}\,\theta - \cot\theta = \frac{1}{3}$ .....(ii)

Adding equations (i) and (ii),

$2\,\text{cosec}\,\theta = 3 + \frac{1}{3} \Rightarrow \text{cosec}\,\theta = \frac{10}{3\times 2} = \frac{5}{3}$

$\sin\theta = \frac{3}{5}$ $\left[\text{As } \sin\theta = \frac{1}{\text{cosec}\,\theta}\right]$

67. (D)



work done by (A + B) in 3 days = 3 ×(3 + 5) = 24

Remaining work = 30 – 24 = 6

C does 6 work in 2 days

$\therefore$ C does 30 work = $\frac{2}{6}\times 30$ = 10 days

68. (C) Volume of cone = Volume of sphere

$\frac{1}{3}\pi r^2 h = \frac{4}{3}\pi R^3$

$3.6 \times 3.6 \times 14.4 = 4 \times R^3$

$R^3 = 3.6 \times 3.6 \times 3.6$

R = 3.6 cm

69. (B) $\frac{3}{4} - \frac{1}{2} = \frac{3-2}{4} = \frac{1}{4}$

ATQ,

$\frac{1}{4}$ part = 48 litres

1 part = 48 × 4 =192 litres

70. (A) $7 + 5 = 12 \xrightarrow{\times 15} 180$

Pencils = $5 \xrightarrow{\times 15} 75$

28% of pencils = $75 \times \frac{28}{100} = 21$

71. (C) Required number of students passed the examination = $360 \times \frac{90}{100} \times \frac{75}{100} = 243$

72. (D) Total number of students from all the colleges together in the year 2012

$480 + 350 + 380 + 500 + 540 = 2250$

$\therefore$ Required number of student who enrolled for computer course = $2250 \times \frac{40}{100} = 900$

73. (C) Average number of students enrolled in all the colleges together in the year 2014

$= \frac{460 + 360 + 430 + 470 + 480}{5} = \frac{2200}{5} = 440$

Average number of students enrolled in all the colleges together in the year 2015

$= \frac{470 + 340 + 390 + 530 + 530}{5} = \frac{2260}{5} = 452$

$\therefore$ Required ratio = 440 : 452 = 110 : 113

74. (A) Average number of student enrolled in college M in all the years together

$= \frac{320 + 350 + 300 + 360 + 340}{5} = \frac{1670}{5} = 334$

Average number of students enrolled in colloage N for all the years together

$= \frac{400 + 380 + 410 + 430 + 390}{5} = \frac{2010}{5} = 402$

$\therefore$ Required % = $\left(\frac{334}{402} \times 100\right)\% = 83.08\% \approx 83\%$

75. (B) Total number of students in all the colleges together in the year 2013

$= 420 + 300 + 410 + 520 + 460 = 2110$

$\therefore$ Required number of student went abroad $= 2110 \times \frac{10}{100} = 211$

MEANINGS IN ALPHABETICAL ORDER

Abound	exist in large numbers or amounts	प्रचुर मात्रा में होना
Adrift	so as to float without being either moored or steered	भटकते हुए
Adversary	one's opponent in a contest, conflict, or dispute	विरोधी
Affirm	state as a fact; assert strongly and publicly	वाणी
Afloat	floating in water; not sinking	बहता हुआ
Aggravate	make (a problem, injury, or offense) worse or more serious	भड़काना
Astronomy	the branch of science which deals with celestial objects, space, and the physical universe as a whole	खगोल
Axiom	a statement or proposition which is regarded as being established, accepted, or self-evidently true	स्वयंसिद्ध
Bury	put or hide under ground	दफनाना
Conceal	keep from sight; hide	छिपाना
Eternal	lasting or existing forever; without end or beginning	सनातन
Evince	reveal the presence of (a quality or feeling)	जताना
Exhale	breathe out	साँस छोड़ना
Exhaust	drain (someone) of their physical or mental resources; tire out	निकास
Exhibition	a public display of works of art or items of interest, held in an art gallery or museum or at a trade fair	प्रदर्शनी
Exigent	pressing; demanding	जल्द
Expose	make (something) visible by uncovering it	बेनकाब
Fugitive	a person who has escaped from a place or is in hiding, especially to avoid arrest or persecution	भगोड़ा
Incentive	a thing that motivates or encourages one to do something	प्रोत्साहन
Indent	start (a line of text) or position (a block of text, table, etc.) further from the margin than the main part of the text	मांगपत्र
Indication	a sign or piece of information that indicates something	संकेत
Injustice	lack of fairness or justice	अन्याय
Introvert	a shy, reticent person	अंतर्मुखी
Petition	a formal written request, typically one signed by many people, appealing to authority with respect to a particular cause	याचिका
Reveal	make (previously unknown or secret information) known to others	प्रकट करना
Rival	a person or thing competing with another for the same objective	प्रतिद्वंद्वी
Shoal	a large number of fish swimming together	छिछला हो जाना
Stoicism	the endurance of pain or hardship without the display of feelings and without complaint	वैराग्य
Sycophant	a person who acts obsequiously toward someone important in order to gain advantage	चापलूस

SSC MOCK TEST - 293 (ANSWER KEY)

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

76. (B) Replace ‘on’ with ‘up’.

Pick on - to harass or bother.

Pick up - to grasp something (as with one’s hands).

77. (B) Replace ‘for’ with ‘against’

90. (A) The correct spelling of 'Exhal' is 'Exhale'.

91. (D) The correct spelling of 'Substituate' is 'Substitute'.