## SSC MOCK TEST - 381 (SOLUTION)

1. (2) Opposite of 'Hope' is 'Despair', similarly the opposite of 'Lunatic' is 'Sane'.
2. (1) As, $\sqrt[3]{1331}=11$

Similarly, $\sqrt[3]{13824}=\mathbf{2 4}$
3.
(3) $(1)(1 \times 2) \div 2=1$
(2) $(3 \times 6) \div 2=9$
(3) $(2 \times 4) \div 2=4$
(4) $(4 \times 8) \div 2=16$
4. (4) Except Transparent, others are synonym of one another.
5. (2) 74

6. (4)

7. (4)
8. (1) As, $16+\left(\frac{16}{2}=8\right)=24$
$24+\left(\frac{8}{2}=4\right)=28$
Similarly, $24+\left(\frac{24}{2}=12\right)=36$
$36+\left(\frac{12}{2}=6\right)=42$
9. (3) $\mathrm{V}^{-}$


Hence, $R$ is the grand-daughter of $S$.
10. (2) Let O be the starting point.

$\therefore$ Required distance $=30-16=14 \mathrm{~km}$ South
11. (2) In the first row,
$36+72=56+52$
In the second row,
$86+59=100+45$
In the third row,
$35+78=100+\mathbf{1 3}$
12. (4)


Similarly,

13. (4)

I. True
II. False
III. True

Hence, only conclusion I and III follow.
14. (2) $58+28 \times 5-12 \div 6 \times 2$ of $7=290$

After Changing the 58 and 28 with each other,
$28+58 \times 5-12 \div 6 \times 2$ of $7=290$
$28+290-12 \div 6 \times 14=290$
$28+290-28=290$
$290=290$

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15. (3) Let the total number of students be 3a.

Number of students in class $\mathrm{X}=\mathrm{a}$
Number of students in class $Y=3 a$
ATQ,
$a+20=\frac{3 a}{2}$
$2 a+40=3 a$
$a=40$
Total number of students $=40 \times 3=120$
Required $\%=\left(\frac{20}{120} \times 100\right) \%=16 \frac{2}{3} \%$
16. (3)
17. (2) 4. Magical $\rightarrow$ 3. Magnet $\rightarrow$ 1. Magnetic $\rightarrow$ 2. Magnify $\rightarrow$ 5. Majesty
18. (1)
19. (1) As,

And,

20. (3)


Total number of triangles $=2(5+4+3+2+1)=2 \times 15=30$
21. (4) qsu/suw/uwy/yac
22. (3) In a clock, two times minutes and hour hand make an angle $90^{\circ}$ in each hour, except 2-3, 3-4, 8-9 and 9-10 o'clock. So, in 24 hour, 44 times it will make an angles of $90^{\circ}$.
23. (2) 24. (3) 25. (1)
26. (2) Sabarimala temple is located in Kerala where Lord Ayyappa is worshipped.
27. (2) The Bihu festival is celebrated in the state of Assam.
28. (2) Congress was represented by Maulana Abul Kalam Azad in the Shimla Conference of 1945 and Mohammad Ali Jinnah represented by writing Muslim.
29. (3) The book Poverty and Un-British Rule in India was written by Dadabhai Naoroji, also known as the Grand Old Man of India.

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30. (2) Seva Sadan was founded by BA Malabari in Bombay in 1885.
31. (2) Shershah Suri founded the second Afghan Empire in India while the first Afghan Empire was founded by Bahlol Lodi.
32. (1) A place called Chuquicamata located in Chile is famous for the production of copper, that is why Chile is also called the capital of copper.
33. (2) The Irula tribe lives in the Nilgiri Hills.
34. (1) Nanded is situated on the banks of river Godavari, it is a holy place of Sikhism.
35. (1) Palash is called the fire of the forest, it is the state flower of Uttar Pradesh and Jharkhand.
36. (3) Under Article 249, the Parliament has been given the power to make laws on the subjects of state list on the issue of national interest.
37. (2) The Ashok Mehta Committee recommended the implementation of a two-tier Panchayati Raj system.
38. (3) Under the 86th Constitutional Amendment, the Right to Education was given the status of a fundamental right through Article 21A in the Constitution.
39. (3) The National Green Tribunal was constituted in the year 2010 under the National Green Tribunal Act 2010.
40. (3) The Summer Olympics to be held in 2024 will be held in the city of Paris, France, before this the Summer Olympic Games were organised by France in 1900 and 1924 as well.
41. (3) PT Usha has been elected as the new President of the Indian Olympic Association, she is the first woman President of the Indian Olympic Association.
42. (3) Asthma is caused by a fungus called Aspergillus fumigatus.
44. (4) The most important function of ethylene is ripening of unripe fruits, its concentration increases during the ripening of fruits.
45. (2) The spleen is called the graveyard of red blood cells because it disposes of dead red blood cells.
50. (2) Chief Minister Basavaraj Bommai has announced ₹ 9,698 crore-worth projects in the State Budget 2023-23 for comprehensive development of Bengaluru city.
51. (1) Let the total work $=120$ units

Total work done by $K$ and $R$ in 30 days $=\left(\frac{120}{60}+\frac{120}{120}\right) \times 30=90$ units
Remaining work done by $\mathrm{S}=120-90=30$ units
Percentage of work done by $S=\left(\frac{30}{120} \times 100\right) \%=25 \%$
$\therefore \quad$ Share of $S=4800 \times \frac{25}{100}=₹ 1200$
52. (3) Ratio of their profit $=(8000 \times 12):(6400 \times 4+5600 \times 8):(2400 \times 4+2000 \times 8)$
$=96000: 70400: 25600=240: 176: 64$
$\therefore \quad$ Share of B $=\frac{9120}{480} \times 176=₹ 3344$
53. (2) Quantity of $A=\frac{32}{8} \times 3=12$ litres

Quantity of $B=\frac{32}{8} \times 5=20$ litres
After removing the mixture and replaced by A.
ATQ,
$\frac{3 x-12+32}{5 x-20}=\frac{5}{3}$
$\frac{3 x+20}{5 x-20}=\frac{5}{3}$
$9 x+60=25 x-100$
$16 x=160$
$\mathrm{x}=10$ litres
$\therefore$ Total capacity $=3 \mathrm{x}+5 \mathrm{x}=8 \mathrm{x}=8 \times 10=80$ litres
54. (2) Let the total distance be 3d km.

Now,
$x \times \frac{5}{2}=2 d$
$5 \mathrm{x}=4 \mathrm{~d}$
Again,
$(x+2) \times \frac{50}{60}=d$
$5(x+2)=6 d$ $\qquad$
On dividing (ii) by (i), we get
$\frac{[5(x+2)]}{5 x}=\frac{6 d}{4 d}$
$\frac{x+2}{x}=\frac{3}{2}$
$2 x+4=3 x$
$\mathrm{x}=4$
Put the value of $x$ in equation (i),
$5 \times 4=4 d$
$d=5$
$\therefore$ Total distance $=3 \mathrm{~d}=3 \times 5=15 \mathrm{~km}$
55. (4)


Given, $A P$ is perpendicular to $B C$, and $A Q$ is the bisector of angle PAC.
In $\triangle \mathrm{ABP}$,
$\angle \mathrm{APB}=90^{\circ}$
$\angle \mathrm{ABP}=60^{\circ}$
So, $\angle \mathrm{BAP}=180^{\circ}-\left(90^{\circ}+60^{\circ}\right)=30^{\circ}$
Now in $\triangle \mathrm{ABC}$,
$\angle \mathrm{ABC}=60^{\circ}, \angle \mathrm{ACB}=30^{\circ}$
So, $\angle \mathrm{BAC}=180^{\circ}-\left(60^{\circ}+30^{\circ}\right)=90^{\circ}$
And $\angle \mathrm{BAC}=\angle \mathrm{BAP}+\angle \mathrm{PAQ}+\angle \mathrm{QAC}$
Since, AQ is the bisector of angle PAC.
So, $\angle \mathrm{PAQ}=\angle \mathrm{QAC}$
$\angle \mathrm{BAC}=\angle \mathrm{BAP}+2 \angle \mathrm{PAQ}$
$90^{\circ}=30^{\circ}+2 \angle \mathrm{PAQ}$
$2 \angle \mathrm{PAQ}=60^{\circ}$
Hence, $\angle \mathrm{PAQ}=30^{\circ}$
56. (4) Ratio of volume of tank $A$ and $B=6: 5$

Water increase in tank $A=30 \%$
Let the volume of tank $A$ and $B=6 x$ and $5 x$
Increased volume of tank $A=$ Initial volume + Increase $=6 x+\left(6 x \times \frac{30}{100}\right)$
$=(6 \mathrm{x}+1.80 \mathrm{x})=7.80 \mathrm{x}$
So, the increased volume of tank $B$ to become same as tank $A=7.80 x-5 x=2.80 x$
So, the percentage of increased volume $=\left(\frac{2.80 x}{5 x} \times 100\right) \%=56 \%$
The increased volume of tank B is $56 \%$ to be equal with tank A.
57. (2) $\tan ^{2} \theta-3 \sec ^{2} \theta+3=0$
$-\left(\sec ^{2} \theta-\tan ^{2} \theta\right)-\sec ^{2} \theta-3=0$
$-1+3=2 \sec ^{2} \theta$
$2 \sec ^{2} \theta=2$
$\sec ^{2} \theta=1$
$\sec \theta \pm 1$
$\sec \theta=\sec 0^{\circ}$ or $\sec 180^{\circ}$
$\therefore \theta=0^{\circ} \quad\left(\right.$ since $\left.\theta \leq 90^{\circ}\right)$

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58. (3) $7 p^{2}+7 p=7 p(p+1)$, which is always divisible by 7 and 14 both. Because as we know that $p(p$ +1 ) is always even.

So, 7 and 14 will be the answer.
59. (1) Total number of students in a class $=180$

Number of students in class $A=180 \times \frac{60}{100}=108$
Number of students in class $B=180-108=72$
Let the average score of students from village $A=x$
The average score of students from village $B=x \times \frac{125}{100}=125 x$
ATQ,
$108 \times x+72 \times 1.25 x=180 \times 44$
$108 x+90 x=7920$
$198 x=7920$
$x=\frac{7920}{198}=40$
$\therefore \quad$ Average score of students from village $B=40 \times 1.25=50$
60.
$\frac{(\sec \theta+\tan \theta)(1-\sin \theta)}{\operatorname{cosec} \theta(1+\cos \theta)(\operatorname{cosec} \theta-\cot \theta)}$

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

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

$$
=\frac{\frac{(1-\sin \theta)}{\cos \theta}}{\frac{1}{\sin \theta}\left(\frac{1-\operatorname{cosec}^{2} \theta}{\sin \theta}\right)}=\frac{\frac{\cos ^{2} \theta}{\cos \theta}}{\frac{1}{\sin \theta} \cdot \frac{\sin ^{2} \theta}{\sin \theta}}=\cos \theta
$$

61. (2) $\sqrt{0.014 \times 0.14 \mathrm{x}}=0.014 \times 0.14 \sqrt{\mathrm{y}}$

Squaring both sides,
$0.014 \times 0.14 \mathrm{x}=(0.014)^{2} \times(0.14)^{2} \times \mathrm{y}$
$\therefore \quad \frac{\mathrm{x}}{\mathrm{y}}=0.014 \times 0.14=0.00196$

## Campus

62. (2)


It in given FE divides $\triangle \mathrm{ABC}$ into two equal parts.
Area of $\triangle \mathrm{ABC}=2 \times \triangle \mathrm{AFE}$
$\frac{1}{2} \times \mathrm{BC} \times \mathrm{AD}=\frac{1}{2} \times \mathrm{FE} \times \mathrm{AG} \times 2$
$\mathrm{BC} \times \mathrm{AD}=2 \times \mathrm{FE} \times \mathrm{AG}$
$\frac{\mathrm{BC}}{\mathrm{FE}}=\frac{2 \mathrm{AG}}{\mathrm{AD}}$
Also,
Area of $\triangle \mathrm{AFE}=$ Area of trapezium BEFC
$\frac{1}{2} \times \mathrm{FE} \times \mathrm{AG}=\frac{1}{2} \times(\mathrm{BC}+\mathrm{EF}) \times \mathrm{DG}$
$\frac{1}{2} \times \mathrm{FE} \times \mathrm{AG}=\frac{1}{2} \times \mathrm{BC} \times \mathrm{DG}+\frac{1}{2 \times \mathrm{EF} \times \mathrm{DG}}$
$1=\frac{\mathrm{BC} \times \mathrm{DG}}{\mathrm{AG} \times \mathrm{FE}}+\frac{\mathrm{DG}}{\mathrm{AG}}$
$1=\frac{2 \mathrm{DG}}{\mathrm{AD}}+\frac{\mathrm{DG}}{\mathrm{AG}}$
$1-\frac{\mathrm{DG}}{\mathrm{AG}}=\frac{2 \mathrm{DG}}{\mathrm{AD}}$
$\frac{\mathrm{AD}}{2 \mathrm{DG}}=\frac{1}{1-\frac{\mathrm{DG}}{\mathrm{AG}}}$
$\frac{A G+G D}{2 D G}=\frac{1}{1-\frac{D G}{A G}}$
$\frac{\mathrm{AG}}{\mathrm{DG}}+1=\frac{2}{1-\frac{\mathrm{DG}}{\mathrm{AG}}}$
Let $\frac{G D}{A G}=1$
$\frac{1}{\mathrm{x}}+1=\frac{2}{1-\mathrm{x}}$
$\frac{1+\mathrm{x}}{\mathrm{x}}=\frac{2}{1-\mathrm{x}}$
$x^{2}+2 x-1=0$
$x=(\sqrt{2}-1): 1$
$\therefore \quad$ GD $: A G=(\sqrt{2}-1): 1$
63. (2) Let the exterior angle $=x$

Interior angle $=3 x$
$3 \mathrm{x}+\mathrm{x}=180^{\circ}$
$x=\frac{180}{4}=45^{\circ}$
$\therefore \quad$ Number of sides $=\frac{360^{\circ}}{45^{\circ}}=8$
64. (4)


In two hours, working alternatively starting with A tank filled $=3+2=5$
In 4 hours, tank filled $=2 \times 5=10$
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 $\frac{2}{3}$ hours

Total time taken $=4+\frac{2}{3}=4 \frac{2}{3}$ hours
65. (1) Total height of Team $A=20(5 \times 12+11)=1420$ inches

And total height of Team $B=18(6 \times 12+2)=1332$ inches
$\therefore \quad$ Overall average height $=\frac{1420+1332}{38}=72.42$ inches
66. (3) First term, $G_{1}=1$

Common ratio $=\frac{x}{1+x}$
Sum $=S_{\infty}=\frac{G_{1}}{1-r}$
$S_{\infty}=\frac{1}{1-\frac{x}{1+x}}$
$S_{\infty}=1+x$

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67. (3) Total $\mathrm{CP}=16 \times 4200=₹ 67200$

Total SP $=67200+900=₹ 68100$
SP of 11 goats $=4800 \times 11=₹ 52800$
SP of remaining 3 goats $=68100-52800=₹ 15300$
SP of 1 goat $=\frac{15300}{3}=₹ 5100$
68. (4) Sum of smallest and largest number $=20 \times 80-18 \times 78=196$

Difference of smallest and largest number $=132$
$\therefore$ Largest number $=\frac{196+132}{2}=164$
69.
(3) 50P $25 \mathrm{P} \quad 10 \mathrm{P}$
$2 x \quad 3 x \quad 5 x$
Now, $\frac{1}{2} \times 2 x+\frac{1}{4} \times 3 x+\frac{1}{10} \times 5 x=126$
$\frac{3 x}{4}+\frac{1}{2} x=126$
$\frac{4 x+3 x+2 x}{4}=126$
$\frac{9 x}{4}=126$

$$
x=\frac{126}{9} \times 4=56
$$

Number of 25 paise and 50 paise coins $=2 x+3 x=5 x=5 \times 56=280$
Method II: (Quicker Approach)

Ratio of number 2 : 3 : 5
Ratio of value $\quad 50 \times 2: 25 \times 3: 10 \times 5$
100 : 75 : 50
$4: 3: 2$
Value of $50-\mathrm{p}$ coins $=\frac{126}{4+3+2} \times 4=56$
Value of $25-$ p coins $=\frac{126}{4+3+2} \times 3=42$
$\therefore$ Required number of coins $=56 \times 2+42 \times 4=112+168=280$
70. (4) Sanjeet's monthly salary $=\frac{295200}{12}=₹ 24600$

Expenditure on food $=24600 \times \frac{30}{100}=₹ 7380$
Expenditure on conveyance and clothes $=(24600-7380) \times \frac{40}{100}$
$=17220 \times \frac{40}{100}=1722 \times 4=₹ 6888$
Sanjeet's savings in eight months $=(24600-14268) \times \frac{1}{2} \times 8=₹ 41328$

## Method II:

Expenditure on food $=30 \%$
Expenditure on conveyance $\&$ clothes $=40 \%$ of $70 \%=28 \%$
Saving $=50 \%[100-(30+28)] \%=50 \%$ of $42 \%=21 \%$
Saving in 8 months $=21 \%$ of $295200 \times \frac{8}{12}=7 \times 2952 \times 2=₹ 41328$
71. (4) Required difference $=\frac{320000 \times(24+20)}{2 \times 100}-\frac{320000 \times(28+7+7)}{3 \times 100}$
$=70400-44800=25600$ tonnes
72. (3) Required amount $=40 \%$ of $28 \%$ of $320000 \times 900=0.4 \times 0.28 \times 320000 \times 900$
$=\$ 32256000=\$ 32256$ thousand
73. (2) The export of rice to Kuwait in January $=320000 \times \frac{7}{100} \times \frac{80}{100}=4000 \times 7=17920$ tonnes

The export price of rice to Kuwait in January $=880 \times \frac{110}{100}=\$ 968$ per tonne
Required value $=17920 \times 968=\$ 17346560=\$ 1734.6560$ thousand
74. (4) Required ratio $=\frac{7 \times 700}{28 \times 725}=7: 29$
75. (1) Required difference
$=320000[24 \times 700-(14 \times 800+7 \times 700)]=320000[16800-(11200+4900)]$
$=320000[16800-16100]$
$=320000 \times 700=\$ 224000000=\$ 224000$ thousand

## MEANINGS IN ALPHABETICAL ORDER

| Alluring | powerfully and mysteriously attractive or | मना' हर |
| :---: | :---: | :---: |
|  | fascinating; seductive |  |
| Concealment | the action of hiding something or preventing | आ ड. |
|  | it from being known |  |
| Denial | the action of declaring something to be untrue | इ नका र |
| Dilapidated | (of a building or object) in a state of disrepair | उ बड. खा बड. |
|  | or ruin as a result of age or neglect |  |
| Evidence | the available body of facts or information | स सू त |
|  | indicating whether a belief or proposition |  |
|  | is true or valid |  |
| Glamorous | having glamour | आ कणt ${ }^{\circ}$ क |
| Infirmary | a place in a large institution for the care of | दु र्ब लता |
|  | those who are ill |  |
| Insatiability | the act of asking for or trying to obtain | लı' ${ }^{\text {T }}$ |
|  | something from someone |  |
| Insidiousness | betrayal of trust; deceptive action or nature | विस्वा तहा T त |
| Intellect | the faculty of reasoning and understanding | बु द् धि |
|  | objectively, especially with regard to abstract |  |
|  | or academic matters |  |
| Lethargy | a lack of energy and enthusiasm | सु स ती |
| Persist | continue firmly or obstinately in an opinion or | का यम रहना |
|  | a course of action in spite of difficulty, opposition |  |
| Refutation | the action of proving a statement or theory to be | निरा करप |
|  | wrong or false |  |
| Repulsive | arousing intense distaste or disgust | प्र तिका रक |
| Turbulent | characterized by conflict, disorder, or confusion; | उ प्द्र वी |
|  | not controlled or calm |  |

## SSC MOCK TEST - 381 (ANSWER KEY)

1. (2)
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97. (A)
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99. (D)
100. (D)
