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## Solutions

## Direction (1-5)



S1. Ans.(a)
S2. Ans.(c)
S3. Ans.(a)
S4. Ans.(b)
S5. Ans.(a)

S6. Ans. (a)
Sol.
This is question of Coding-Decoding based on new pattern. In these questions following logic's are applied to decode the code:-
$1^{\text {st }}$ letter of the code:- If total number of letters in the word are 5 then special character $-\%$ is used in stating of code.
If total number of letters in the word are less than 5 then special character $-\$$ is used in stating of code. But If total number of letters in the word are greater than 5 then special character -@ is used in stating of code.
$2^{\text {nd }}$ letter of the code:- Addition of place value of all the consonants present in the word.
$3^{\text {rd }}$ letter of the code:- Opposite of $1^{\text {st }}$ letter of the word.


## S7. Ans. (b)

Sol.
This is question of Coding-Decoding based on new pattern. In these questions following logic's are applied to decode the code:-
$1^{\text {st }}$ letter of the code:- If total number of letters in the word are 5 then special character $-\%$ is used in stating of code.

If total number of letters in the word are less than 5 then special character $-\$$ is used in stating of code. But If total number of letters in the word are greater than 5 then special character -@ is used in stating of code.
$2^{\text {nd }}$ letter of the code:- Addition of place value of all the consonants present in the word. $3^{\text {rd }}$ letter of the code:- Opposite of $1^{\text {st }}$ letter of the word.


S8. Ans. (c)

## Sol.

This is question of Coding-Decoding based on new pattern. In these questions following logic's are applied to decode the code:-
$1^{\text {st }}$ letter of the code:- If total number of letters in the word are 5 then special character $-\%$ is used in stating of code.
If total number of letters in the word are less than 5 then special character $-\$$ is used in stating of code. But If total number of letters in the word are greater than 5 then special character - @ is used in stating of code.
$2^{\text {nd }}$ letter of the code:- Addition of place value of all the consonants present in the word. $3^{\text {rd }}$ letter of the code:- Opposite of $1^{\text {st }}$ letter of the word.

If total number of letters in the word are 5 then special character - \% is used in stating of code.
If total number of letters in the word are less than 5 then special character $\mathbf{- \$}$ is used in stating of code.

Opposite of $1^{\text {st }}$ letter of the word.

But If total number of letters in the word are greater than 5 then special character-@ is use

## S9. Ans. (d)

## Sol.

This is question of Coding-Decoding based on new pattern. In these questions following logic's are applied to decode the code:-
$1^{\text {st }}$ letter of the code:- If total number of letters in the word are 5 then special character $-\%$ is used in stating of code.
If total number of letters in the word are less than 5 then special character $-\$$ is used in stating of code.

But If total number of letters in the word are greater than 5 then special character -@ is used in stating of code.
$2^{\text {nd }}$ letter of the code:- Addition of place value of all the consonants present in the word. $3^{\text {rd }}$ letter of the code:- Opposite of $1^{\text {st }}$ letter of the word.


## S10.Ans. (e)

Sol. This is question of Coding-Decoding based on new pattern. In these questions following logic's are applied to decode the code:-
$1^{\text {st }}$ letter of the code:- If total number of letters in the word are 5 then special character $-\%$ is used in stating of code.
If total number of letters in the word are less than 5 then special character $-\$$ is used in stating of code. But If total number of letters in the word are greater than 5 then special character -@ is used in stating of code.
$2^{\text {nd }}$ letter of the code:- Addition of place value of all the consonants present in the word. $3^{\text {rd }}$ letter of the code:- Opposite of $1^{\text {st }}$ letter of the word.


## Solution (11-15)

Amit(60) Chetan(30) Esha(27) Fiza(36) Geeta(18) Hina(15) Dinesh(16) Bipu(55)



S11. Ans(a)
S12. Ans(c)
S13. Ans(a)
S14. Ans(b)
S15. Ans(a)

S16. Ans.(d)
Sol.


S17. Ans.(d)
Sol.


Solution (18-20):


3m

S18. Ans.(c)
S19. Ans.(a)
S20. Ans.(a)

Solutions (21-25):

| $8 \dagger \mathbf{R}$ (Biology) |  |
| :---: | :---: |
| 7-P(Chemistry) |  |
|  | O(Sanskrit) |
|  | T(Science) |
|  | S(Math) |
|  | Q(Physics) |
|  | N(English) |
|  | -M(Hindi) |

S21. Ans. (a)
S22. Ans. (c)
S23. Ans. (b)
S24. Ans. (c)
S25. Ans. (d)

S26. Ans. (e)
Sol. T is daughter in law of P .


S27. Ans. (d)

S28. Ans. (b)
Sol.


S29. Ans. (d)

S30. Ans. (e)
Sol.

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S31. Ans.(a)
Sol.


S32. Ans.(e)
Sol.


S33. Ans.(e)
Sol.


## S34. Ans.(c)

Sol.


S35. Ans.(e)
Sol.


Solution(36-40):

```
Year Age Persons
1947 70year F
1952 65year G
1960 57year E
1968 49year A
1982 35year D
1990 27year C
1997 20year B
```

S36. Ans.(c)
S37. Ans.(a)
S38. Ans.(b)
S39. Ans.(a)
S40. Ans.(b)

## S41. Ans.(a)

Sol. Pattern is $\times 1, \times 1.5, \times 2.5, \times 4, \times 65, \ldots$
$\therefore ?=1170 \times(4+6.5)=1170 \times 10.5=12285$

## S42. Ans.(a)

## Sol.

Pattern is $+112,+125,+139,+154,+170$

$\therefore ?=820+154=974$

S43. Ans.(b)
Sol. Pattern is $+2^{3},+3,+4^{3},+5,+6^{3}$
$\therefore ?=81+6^{3}=297$

S44. Ans.(d)
Sol.

$?=177+92=269$

S45. Ans.(c)
Sol. Pattern is $(\times 2-1),(\times 3+1),(\times 4-1),(\times 5+1),(\times 6-1)$
$\therefore$ ? $=556 \times 6-1=3335$

## S46. Ans.(c)

Sol.
$\mathrm{A}=\mathrm{P}+\frac{\mathrm{P} \times \mathrm{R} \times \mathrm{T}}{100}$
$\mathrm{P}=19,200-4,800=$ Rs. 14400
Let each installment $=$ Rs. x monthly
$A=\left[x+\left(x+\frac{x \times R \times 1}{100}\right)+\left(x+\frac{x \times R \times 2}{100}\right)+\ldots+\left(x+\frac{x \times R \times 4}{100}\right)\right]$
$\Rightarrow\left(14400+\frac{14400 \times 12 \times 5}{100 \times 12}\right)=\left[x+\left(\frac{12 \mathrm{x}}{12 \times 100}+\mathrm{x}\right)+\left(\mathrm{x}+\frac{12 \mathrm{x} \times 2}{12 \times 100}\right)+\ldots+\left(\mathrm{x}+\frac{12 \mathrm{x} \times 4}{1200}\right)\right]$
$\Rightarrow 15120=5 x+\frac{x}{10}$
$\Rightarrow \mathrm{x}=\frac{151200}{51}$
= Rs. 2964.70

S47. Ans. (c)
Sol. Given,
$\mathrm{S}_{1}=$ Rs. 160, Loss $=20 \%$
$\mathrm{S}_{2}=$ ? and Gain $\%=25 \%$
$\therefore \mathrm{S}_{2}=160 \times \frac{100}{100-20} \times \frac{125}{100}=$ Rs. 250
Hence, Percentage Increase in Selling Price $=\frac{250-160}{160} \times 100=56.25 \%$
Desired Difference $=56.25 \%-20 \%=36.25 \%$

S48. Ans. (a)
Sol.
$\% \mathrm{~L}=\frac{\text { Sold for a rupee }- \text { Buy for a rupee }}{\text { Sold for a rupee }} \times 100=\frac{50-46}{50} \times 100=8 \%$
S49. Ans. (d)
Sol. Share of one grandchild $=\frac{1}{10} \times 1.25=0.125$ lakh
$\therefore$ Each son will get $=8 \times 0.125=$ Rs. 1 lakh
$\therefore$ Share of 3 sons $=$ Rs. 3 lakhs
Hence, share of two daughters $=2 \times 1.25=$ Rs. 2.5 Lakh
Total share of sons and daughters $=$ Rs. 5.5 lakhs
$\therefore$ Wife's share $=\frac{2}{5} \times 5.5=$ Rs. 2.2 lakhs
Now, share of three grandchildren $=3 \times 0.125=$ Rs. 0.375 lakh
$\therefore$ Required answer $=$ Rs. $(2.2+0.375)$ lakh $=$ Rs. 257500

## S50. Ans.(c)

Sol. Area of ground $=\frac{1000}{0.25}=4000 \mathrm{~m}^{2}$
Breadth $=50 \mathrm{~m}$
Length $=\frac{4000}{50}=80 \mathrm{~m}$
New length $=80+20=100 \mathrm{~m}$
New area $=100 \times 50=5000 \mathrm{~m}^{2}$
So, expenditure $=5000 \times 0.25=$ Rs 1250

## S51. Ans.(a)

Sol.
$\frac{\frac{325}{250}}{\frac{550}{375}}=\frac{325 \times 375}{250 \times 550}=39: 44$
S52. Ans.(c)
Sol. 2016 : No. of consumers $=\frac{220}{100}[225]=495$ thousand
Electricity consumption $=550$ Lacs
$\therefore$ Electricity consumption per consumer $=\frac{550 \times 100000}{495 \times 1000}$
$=111$ units per consumer


2015 : Electricity consumption per consumer $=\frac{550 \times 100000}{375000}$
$\approx 147$ units per consumer
Hence, the Impact is reduction of 36 units per consumer

## S53. Ans.(b)

Sol. Total consumer all over the year $=225+250+300+350+375=1500$ thousand
Desired value $=\frac{325 \times 100000}{1500000}=21.5$ times approx

## S54. Ans.(d)

Sol. Total units in 2011 and $2013=650$ Lacs
Total units in 2012 and $2014=900$ Lacs
Desired value $=\frac{250}{900} \times 100 \approx 28 \%$ approx

## S55. Ans.(c)

Sol. It is clear from the graph that unit consumption is highest in 2014 while consumers-electricity units difference is maximum as well. Hence, Ratio of unit consumption to the number of consumers is maximum in 2014.

## S56. Ans.(a)

Sol.
$\approx \frac{576}{80} \times \frac{400}{40} \times \frac{900}{40}=1620$
S57. Ans.(c)
Sol. $\approx 68 \times 14-14 \times 13=770$

## S58. Ans.(d)

Sol. $\approx 5467-3245+1123-2310=1035$

## S59. Ans.(c)

Sol. $\approx 40 \times 6-250+700=690$

S60. Ans.(b)
Sol.
$=\frac{52001 \times 29}{61 \times 41}=600$

## S61. Ans.(b)

Sol. Let, average no. of mistakes per page for remaining pages be $x$, then, $1007 \times 2=434+(1007-612) \times x$
or, $2014=434+395 x$
or, $x=\frac{1580}{395}=4$

S62. Ans.(b)
Sol.
Required ratio $=\frac{\frac{25}{100} \times 2+\frac{75}{100} \times 3}{\frac{75}{100} \times 2+\frac{25}{100} \times 3}$
$=\frac{\frac{2}{4}+\frac{9}{4}}{\frac{6}{4}+\frac{3}{4}}$
$=\frac{11}{9}$

## S63. Ans.(b)

Sol. Let, A have ' $x$ ' no. of guavas
And B have ' $y$ ' no. of guavas
ATQ,
$x-\frac{x}{4}=y+2+\frac{x}{4}$
or, $\frac{x}{2}=y+2 \ldots \ldots$.
and,
$y+\frac{7}{10} y=x-\frac{7 y}{10}+4$
or, $12 y=5 x+20$
solving (i) and (ii),
$\mathrm{x}=44, \mathrm{y}=20$
Total guavas $=44+20=64$

## S64. Ans.(c)

Sol. Cost price for retailer $=30.09 \times \frac{4}{5}=24.072$
Cost price for manufacturer $=24.072 \times \frac{100}{120} \times \frac{100}{118}$
$=24.072 \times \frac{5}{6} \times \frac{50}{59}$
$=17$

S65. Ans.(b)
Sol. Total selling price $=7200 \times 10=72000$
Total no. of pens manufactured $=7200 \times \frac{10}{9}=8000$
Total cost price of pens $=72000 \times \frac{100}{125}=57600$
Cost of each pen $=\frac{57600}{8000}=7.2$
S66. Ans.(e)
Sol. $1981-1562.5+1728=$ ? -26.49
? $=2172.98$

S67. Ans.(c)
Sol.
$4 \sqrt{3}+4 \sqrt{5}+4 \sqrt{11}+18-11=?+7+4 \sqrt{11}$
$?=4(\sqrt{3}+\sqrt{5})$
S68. Ans.(b)
Sol. $50+9996-529=9517$

S69. Ans.(c)
Sol.
$23+\frac{28}{100} \times 280-\frac{89}{100} \times 56$
$23+78.4-49.84=51.56$
S70. Ans.(c)
Sol.
$\frac{842}{25} \times \frac{1280}{37}+\frac{1848}{52} \times \frac{2089}{57}$
$1165.14+1302.45=2467.59$
Solution (71-75)-

|  | Total questions | Maximum |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| marks |  | Rttempt | Right <br> question | Wrong <br> question | Marks |
| obtained |  |  |  |  |  |

S71. Ans.(c)
Sol. Total number of question $=170$, no of questions left $=170-119=51$
S72. Ans.(c)
Sol. Marks in GA $=9.75$

S73. Ans.(a)
Sol. $17-5=12$

S74. Ans.(c)
Sol. total marks obtained $=109$

S75. Ans.(e)
Sol. Total number of incorrect questions $=122-85=37$

## S76. Ans.(c)

## Sol.

I. $42 \mathrm{p}=168$
II. $\sqrt{q+888}-\sqrt{144}=\sqrt{324}$
$\mathrm{p}=4$

$$
\begin{aligned}
& \Rightarrow \sqrt{q+888}=18+12=30 \\
& \Rightarrow q=900-888 \\
& \Rightarrow p=12
\end{aligned}
$$

$\mathrm{p}<\mathrm{q}$
S77. Ans.(a)
Sol.
I. $144 \mathrm{p}^{2}=25$
II. $36 q=21-6$
$\mathrm{p}= \pm \frac{5}{12}$

$$
\mathrm{q}=\frac{15}{36}=\frac{5}{12}
$$

$\mathrm{p} \leq \mathrm{q}$
S78. Ans.(c)
Sol.

$$
\begin{aligned}
& \text { I. } \frac{2 \sqrt{\mathrm{p}}}{70}+\frac{3 \sqrt{\mathrm{p}}}{70}=\frac{7}{49 \sqrt{\mathrm{p}}} \text { II. } \frac{10}{\sqrt{\mathrm{q}}}+\frac{2}{\sqrt{\mathrm{q}}}=4 \sqrt{\mathrm{q}} \\
& \Rightarrow \frac{5 \sqrt{\mathrm{p}}}{70}=\frac{1}{7 \sqrt{p}} \quad \Rightarrow q=3 \\
& \Rightarrow \mathrm{p}=2 \\
& \mathrm{p}<\mathrm{q}
\end{aligned}
$$

S79. Ans.(c)
Sol.
I. $3 p^{2}-27 p+60=0$
II. $4 q^{2}-52 q+168=0$
$\Rightarrow 3 p^{2}-15 p-12 p+60=0$
$\Rightarrow 3 \mathrm{p}(\mathrm{p}-5)-12(\mathrm{p}-5)=0$
$\Rightarrow \mathrm{p}=4,5$

$$
\begin{aligned}
& \Rightarrow 4 q^{2}-52 q+168=0 \\
& \Rightarrow 4 q^{2}-24 q-28 q+168=0 \\
& \Rightarrow 4 q(q-6)-28(q-6)=0 \\
& \Rightarrow q=6,7
\end{aligned}
$$

$\mathrm{p}<\mathrm{q}$

## S80. Ans.(d)

## Sol.

I. $7 p^{2}-21 p-33 p+99=0$
II. $4 q^{2}-10 q-6 q+15=0$
$\Rightarrow 7 \mathrm{p}(\mathrm{p}-3)-33(\mathrm{p}-3)=0$
$\Rightarrow \mathrm{p}=3, \frac{33}{7}$
$\Rightarrow 2 q(2 q-5)-3(2 q-5)=0$
$\Rightarrow \mathrm{q}=\frac{3}{2}, \frac{5}{2}$
$P>Q$


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