## FCI (Tier-1) Exam. Model Practice Set - 2022

## Answers with Explanation

1. (b) It is a general rule/provision. Hence, Present Simple i.e., involves interviewing is the right usage.
2. (a) harassed is an Adj. and it must qualify a Noun. But, here it isn't qualifying anything. Hence, being will be placed before much to make it a correct statement. Hence, being much harassed is the right usage
3. (d) No error

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Here, a shade (N.) : a little; slightly
4. (c) Here, pets are allowed is the right usage.
5. (b) chef (Noun) : a professional cook in a restaurant
Here, what to prepare for the important dinner is the right usage.
6. (b) Prep.-for is the right usage.
7. (a) stress (Verb) : to emphasize a fact, an idea, etc.
Here, stressing is the right usage.
8. (b) usher (Noun) : a person who shows people where to sit in a church, public hall, etc. Here, where to sit is the right usage.
9. (d) enough
adequate (Adjective) : enough in quantity or good enough in quality.
10. (b) conveyance

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transmission (Noun) : transfer; process of sending; the process of taking somebody/ something from one place to another.
11. (b) curve
meander (Verb) : to curve a lot rather than being in a straight line.
12. (a) took to his heels : ran away

- As soon as the thief saw the police, he took to his heels.
The best option is ran away in fear.

13. (b) hard and fast : that cannot be changed in any circumstances

- One must abide by the hard and fast rules of this organisation.
The best option is strict.
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14. (d) rest on their laurels : to feel so satisfied with what you have already achieved that you do not try to do any more.
complacent : too satisfied with yourself or with a situation, so that you may not feel that any change is necessary

- Despite our success, this is not the time to rest on our laurels. धुण্ভির্स The best option is to be complacent.

15. (b) to keep up : to continue to be in contact with somebody

- He couldn't keep up with his friends who went into business.
The best option is to keep in touch.

16. (b) prodigality
frugality (Noun) : using as much money as is necessary; meagreness
gaiety (N.) : the state of being cheerful and full of fun
captivity (N.) : the state of being kept as a prisoner/in a confined space
17. (a) unkind
humane (Adj.) : showing kindness towards people and animals.
18. (b) happy
miserable (Adj.) : very unhappy or uncomfortable; depressing.
19. (b) recluse
recluse : a person who lives alone and likes to avoid other people
iconoclast : a person who criticizes popular beliefs/established customs and ideas
sage : a very wise person
priest : a person who performs religious ceremonies
20. (b) bibliophile

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bibliophile (N.) : a person who loves/collects books
bibliomaniac (N.) : excessive fondness for acquiring and possessing books
bibliographer (N.) : someone trained in compiling a list of books/articles
bilingualist (N.) : a person who speaks more than one language
(21-25)
21. (a) look (Verb)

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22. (a) key (Noun)
23. (d) bleak (Adj.) : gloomy; hopeless
24. (d) has (Aux. V.)
25. (a) issue (Noun)
26. (b) Seismometer (Seismograph) is a scientific instrument for measuring the intensity of earthquakes. Similarly, thermometer is used for measuring temperature.
27. (c) Actors take part in play. Similarly, musicians perform concert. Concert is a musical entertainment given in public by one or more musicians. Play is a work written to be performed by actors.

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28. (d) Red Blood Cells are also called Erythrocytes. Similarly, White Blood Cells are called Leucocytes.
29. (c) The spacecraft landed on moon was named Chandrayan by the Indian space Research Organisation. Similarly, the spacecraft which landed on Mars in 2014 was named Mangalyan.
30. (b) The causative organism of polio is virus. Similarly, the causative organism of anthrax is bacteria
31. (b) Husband of Suresh's mother means father of Suresh.
Mother of Suresh's father means grandmother of Suresh.
The son of grandmother means either father or uncle.
Therefore, Suresh is the son of that man.
32. (a) The wife of brother of woman in photograph is mother-in-law of Meera.
Meera is daughter-in-law of brother of that woman.
Therefore, the husband of Meera is nephew of that woman.
33. (c) Arun is the son of Preeti.

Ram is the brother of Preeti and Neeta.
Reema is the daughter of Neeta.
Thus, Arun is cousin of Reema.
Pictorial Method

34. (b)

| $+\Rightarrow-$ | $-\Rightarrow x$ |
| :--- | :--- |
| $\div \Rightarrow+$ | $\times \Rightarrow \div$ |

## Given expression

$15-3+10 \times 5 \div 5=$ ?
After conversion
? $=15 \times 3-10 \div 5+5$
or, ? $=45-2+5$
or, ? $=50-2=48$
35. (b) $(16-4) \times 6 \div 2+8=30$

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$\Rightarrow(16 \div 4) \times 6-2+8=30$
$\Rightarrow 4 \times 6-2+8=30$
$\Rightarrow 24-2+8=30$
36. (d)

| $+\Rightarrow \div$ | $\times \Rightarrow+$ |
| :--- | :--- |
| $-\Rightarrow \times$ | $\div \Rightarrow-$ |

## Option (a)

$36 \times 6+3-2<20$
$\Rightarrow 36+6 \div 3 \times 2<20$
$\Rightarrow 36+2 \times 2 \nless 20$
Option (b)
$36 \times 6+3 \times 2>50$
$\Rightarrow 36+6 \div 3+2>50$
$\Rightarrow 36+2+2>50$
Option (c)
$36+6 \times 3+2=20$
$\Rightarrow 36 \div 6+3 \div 2=20$
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$\Rightarrow 6+\frac{3}{2} \neq 20$

## Option (d)

$36+6-3 \times 2=20$
$\Rightarrow 36 \div 6 \times 3+2=20$
$\Rightarrow 6 \times 3+2=20$
$\Rightarrow 18+2=20$
Both the Options (b) and (d) are correct.
37. (c)


Similarly,
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38. (d)


## Similarly,


39. (b)


Similarly,
फ्याजिएन

40. (b) There is letter ' $L$ ' in the word TERMINAL but there is no letter ' L ' in the Keyword.
41. (b) There is no ' $A$ ' letter in the given word. Therefore, the word CAUTION cannot be formed.
42. (d)


The child is in east direction from the starting point.
43. (a)


It is clear from the diagram that Raja is now facing towards south.
44. (b) Today is Saturday.

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Tomorrow will be Sunday.
Sunday $+4=$ Thursday.
45. (c) The given number series is based on the following pattern :
$3+7=10 ; 10+10=20$
$20+13=33 ; 33+16=49$
$49+19=68 ; 68+22=90$
46. (c) 313

47. (b) $\mathrm{E}=5$, i.e., Position Number in English alphabet.

P E N
$16+5+14=36$
Therefore,

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P A G E

-     -         -             - 

$16+1+7+5=29$
P E N
48. (d) Both the Premises are Particular Affirmative (I-type).
No Conclusion follows from the two Particular Premises.
Conclusions I and III form Complementary Pair. Therefore, either Conclusion I or III follows.
Considering the given Options we can select option (d) as the answer.
49. (b) First figure
$(6 \times 5)+(3 \times 3)=30+9=39$

## Second figure

$(7 \times 5)+(4 \times 4)=35+16=51$

## Third figure

$(5 \times 5)+(3 \times 4)=25+12=37$
50. (b) The upper numbers are multiples of the lower number.
51. (b) The smallest number of 5 digits $=10000$ Remainder on dividing 10000 by $123=37$
$\therefore$ Required number $=10000+(123-37)$
$=10086$
52. (c) Here, 357 is exactly divisible by 17.
$\therefore$ Required remainder $=$ Remainder obtained on dividing 39 by $17=5$
53. (b) $\frac{6}{\frac{7}{8}}=\frac{6 \times 8}{7}=\frac{48}{7}$
$\frac{\frac{6}{7}}{8}=\frac{6}{7 \times 8}=\frac{3}{28}$
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$\therefore$ Required difference $=\frac{48}{7}-\frac{3}{28}$
$=\frac{192-3}{28}=\frac{189}{28}=\frac{27}{4}=6 \frac{3}{4}$
54. (c) Let the number be 15 x and 15 y , where x and y are co -prime.
$\therefore 15 x \times 15 y=6300$
$\Rightarrow \mathrm{xy}=\frac{6300}{15 \times 15}=28$
So, two pairs are $(7,4)$ and $(14,2)$
55. (b) We will find the LCM of $16,24,30$ and 36

| 2 | 16 | 24 | 30 | 36 |
| ---: | ---: | ---: | ---: | ---: |
| 2 | 8 | 12 | 15 | 18 |
| 2 | 4 | 6 | 15 | 9 |
| 3 | 2 | 3 | 15 | 9 |
| 3 | 2 | 1 | 5 | 3 |

$\therefore \mathrm{LCM}=2 \times 2 \times 2 \times 3 \times 2 \times 5 \times 3=720$
The largest number of five digits $=99999$
On dividing 99999 by 720, the remainder $=639$
$\therefore$ The largest five-digit number divisible by $720=99999-639=99360$
$\therefore$ Required number $=99360+10=99370$
56. (c) First part $=\frac{4 \frac{1}{7}-2 \frac{1}{7}}{3 \frac{1}{2}+1 \frac{1}{7}}$

$$
\begin{aligned}
& =\frac{\frac{29}{7}-\frac{15}{7}}{\frac{7}{2}+\frac{8}{7}}=\frac{\frac{14}{7}}{\frac{49+16}{14}} \\
& =\frac{2}{\frac{65}{14}}=\frac{2 \times 14}{65}=\frac{28}{65}
\end{aligned}
$$

Second part $=\frac{1}{2+\frac{1}{2+\frac{1}{\frac{25-1}{5}}}}$
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$$
=\frac{1}{2+\frac{1}{2+\frac{5}{24}}}=\frac{1}{2+\frac{1}{\frac{48+5}{24}}}
$$

$=\frac{1}{2+\frac{24}{53}}=\frac{1}{\frac{106+24}{53}}=\frac{53}{130}$
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$\therefore$ Expression $=\frac{28}{65} \div \frac{53}{130}$
$=\frac{28}{65} \times \frac{130}{53}=\frac{56}{53}$
57. (c) Expression
$=25-5[2+3\{2-2(5-3)+5\}-10] \div 4$
$=25-5[2+3\{2-2 \times 2+5\}-10] \div 4$
$=25-5[2+9-10] \div 4$
$=25-5 \div 4=25-\frac{5}{4}$
$=\frac{100-5}{4}=\frac{95}{4}=23.75$
58. (c)

$$
\begin{aligned}
& \sqrt{\frac{(6.1)^{2}+(61.1)^{2}+(611.1)^{2}}{(0.61)^{2}+(6.11)^{2}+(61.11)^{2}}} \\
& =\sqrt{\frac{(10 \times 0.61)^{2}+(10 \times 6.11)^{2}+(10 \times 61.11)^{2}}{(0.61)^{2}+(6.11)^{2}+(61.11)^{2}}} \\
& =\sqrt{100}=10
\end{aligned}
$$

59. (c) Total expenditure of the year
$=₹(3 \times 2200+4 \times 2550+5 \times 3120)$
$=₹(6600+10200+15600)=₹ 32400$
$\therefore$ Total income of the year
$=₹(32400+1260)=₹ 33660$
$\therefore$ Average monthly income
$=₹ \frac{33660}{12}=₹ 2,805$
60. (c) $\mathrm{M}+\mathrm{T}+\mathrm{W}+\mathrm{TH}=4 \times 37=148^{\circ} \mathrm{C}$
$\mathrm{TH}+\mathrm{F}+\mathrm{S}+\mathrm{S}=4 \times 41=164^{\circ} \mathrm{C}$
$\mathrm{M}+\mathrm{T}+\ldots .+\mathrm{S}+\mathrm{S}=7 \times 39=273^{\circ} \mathrm{C}$
$\therefore$ The temperature of the fourth day
$=148+164-273=39^{\circ} \mathrm{C}$
61. (b) Mean proportional

$$
\begin{aligned}
& =\sqrt{(3+\sqrt{2})(12-\sqrt{32})} \\
& =\sqrt{(3+\sqrt{2}) 4(3-\sqrt{2})} \\
& =2 \sqrt{9-2}=2 \sqrt{7}
\end{aligned}
$$

62. (d) According to the question,

$$
\begin{aligned}
& \mathrm{A} \times \frac{2}{3}=\mathrm{B} \times \frac{75}{100}=\mathrm{C} \times \frac{6}{10} \\
& \Rightarrow \mathrm{~A} \times \frac{2}{3}=\mathrm{B} \times \frac{3}{4}=\mathrm{C} \times \frac{3}{5}
\end{aligned}
$$

Now, $\mathrm{A} \times \frac{2}{3}=\mathrm{B} \times \frac{3}{4}$
$\Rightarrow \frac{\mathrm{A}}{\mathrm{B}}=\frac{3}{4} \times \frac{3}{2}=\frac{9}{8} \Rightarrow \mathrm{~A}: \mathrm{B}=9: 8$
and $\mathrm{B} \times \frac{3}{4}=\mathrm{C} \times \frac{3}{5}$
$\Rightarrow \frac{\mathrm{B}}{\mathrm{C}}=\frac{3}{5} \times \frac{4}{3}=\frac{4}{5}=\frac{8}{10}$
$=\mathrm{B}: \mathrm{C}=8: 10$
$\therefore \mathrm{A}: \mathrm{B}: \mathrm{C}=9: 8: 10$
63. (a) $(\mathrm{A}+\mathrm{B}) \times \frac{40}{100}=(\mathrm{A}-\mathrm{B}) \times \frac{60}{100}$
$\Rightarrow 2(\mathrm{~A}+\mathrm{B})=3(\mathrm{~A}-\mathrm{B})$
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$\Rightarrow 2 \mathrm{~A}+2 \mathrm{~B}=3 \mathrm{~A}-3 \mathrm{~B}$
$\Rightarrow \mathrm{A}=5 \mathrm{~B}$
$\therefore \frac{2 \mathrm{~A}-3 \mathrm{~B}}{\mathrm{~A}+\mathrm{B}}=\frac{10 \mathrm{~B}-3 \mathrm{~B}}{5 \mathrm{~B}+\mathrm{B}}=\frac{7 \mathrm{~B}}{6 \mathrm{~B}}=\frac{7}{6}$
64. (a) $\frac{120 \times 25}{100}+\frac{380 \times 40}{100}=637 \times$ ?
$\Rightarrow 30+152=637 \times$ ?
$\Rightarrow 182=637 \times$ ?
$\Rightarrow ?=\frac{182}{637}=\frac{2}{7}$
65. (b) $\mathrm{x}+\frac{1}{4} \sqrt{\mathrm{x}}+\mathrm{a}^{2}$

$$
=(\sqrt{\mathrm{x}})^{2}+2 \cdot \sqrt{\mathrm{x}} \cdot \frac{1}{8}+(\mathrm{a})^{2}
$$

Clearly $\mathrm{a}=\frac{1}{8}$.
Then, expression $=\left(\sqrt{\mathrm{x}}+\frac{1}{8}\right)^{2}$
66. (b) Given $\mathrm{x}=\frac{\sqrt{3}}{2}$

Given expression
$=\frac{\sqrt{1+x}}{1+\sqrt{1+x}}+\frac{\sqrt{1-x}}{1-\sqrt{1-x}}$
$=\frac{\sqrt{1+x}}{1+\sqrt{1+x}} \times \frac{1-\sqrt{1+x}}{1-\sqrt{1+x}}+\frac{\sqrt{1+x}}{1-\sqrt{1-x}} \times \frac{1+\sqrt{1-x}}{1+\sqrt{1-x}}$
$=\frac{\sqrt{1+x}-1-x}{1-1-x}+\frac{\sqrt{1-x}+1-x}{1-1+x}$
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$$
\begin{aligned}
& =\frac{\sqrt{1-x}+1-x}{x}-\frac{\sqrt{1+x}-1-x}{x} \\
& =\frac{\sqrt{1-x}+1-x-\sqrt{1+x}+1+x}{x} \\
& =\frac{2+\sqrt{1-x}-\sqrt{1+x}}{x} \\
& =\frac{2+\sqrt{1-\frac{\sqrt{3}}{2}}-\sqrt{1+\frac{\sqrt{3}}{2}}}{\frac{\sqrt{3}}{2}} \\
& =\frac{2+\sqrt{\frac{2-\sqrt{3}}{2}}-\sqrt{\frac{2+\sqrt{3}}{2}}}{\frac{\sqrt{3}}{2}} \\
& =\frac{2+\frac{\sqrt{4-2 \sqrt{3}}}{2}-\frac{\sqrt{4+2 \sqrt{3}}}{2}}{\frac{\sqrt{3}}{2}} \\
& {[\because \sqrt{4-2 \sqrt{3}}=\sqrt{3+1-2 \sqrt{3}}} \\
& \left.=\sqrt{(\sqrt{3}-1)^{2}}=\sqrt{3}-1\right] \text { and } \\
& {[\sqrt{4+2 \sqrt{3}}=\sqrt{3+1+2 \sqrt{3}}} \\
& \left.=\sqrt{(\sqrt{3}+1)^{2}}=\sqrt{3}+1\right] \\
& =\frac{4+\sqrt{3}-1-\sqrt{3}-1}{\sqrt{3}}=\frac{2}{\sqrt{3}}
\end{aligned}
$$



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67. (a) $\cos x+\cos y=2$
$\because \cos x \leq 1$
$\Rightarrow \cos \mathrm{x}=1 ; \operatorname{cosy}=1$
$\Rightarrow \mathrm{x}=\mathrm{y}=0^{\circ}\left[\because \operatorname{Cos} 0^{\circ}=1\right]$
$\therefore \sin \mathrm{x}+\sin \mathrm{y}=0$
68. (c) $5 \tan \theta=4 \Rightarrow \tan \theta=\frac{4}{5}$
$\therefore \frac{5 \sin \theta-3 \cos \theta}{5 \sin \theta+2 \cos \theta}$
काजिए

Dividing numerator and denominator by $\cos \theta$,

$$
\begin{aligned}
& =\frac{5 \cdot \frac{\sin \theta}{\cos \theta}-\frac{3 \cos \theta}{\cos \theta}}{5 \frac{\sin \theta}{\cos \theta}+\frac{2 \cos \theta}{\cos \theta}} \\
& =\frac{5 \tan \theta-3}{5 \tan \theta+2}=\frac{5 \times \frac{4}{5}-3}{5 \times \frac{4}{5}+2} \\
& =\frac{4-3}{4+2}=\frac{1}{6}
\end{aligned}
$$

69. (b)

$\angle \mathrm{CAB}=2 \angle \mathrm{ABC}$
$\angle \mathrm{ACB}+\angle \mathrm{ACD}=180^{\circ}$
$\Rightarrow \angle \mathrm{ACB}+120^{\circ}=180^{\circ}$
$\Rightarrow \angle \mathrm{ACB}=180^{\circ}-120^{\circ}=60^{\circ}$
$\therefore \angle \mathrm{A}+\angle \mathrm{B}=180^{\circ}-60^{\circ}=120^{\circ}$
$\Rightarrow 2 \angle \mathrm{~B}+\angle \mathrm{B}=120^{\circ}$
$\Rightarrow 3 \angle \mathrm{~B}=120^{\circ}$
$\Rightarrow \angle \mathrm{B}=\frac{120^{\circ}}{3}=40^{\circ}$
70. (b)

$\mathrm{AD} \perp \mathrm{BC}$
$\mathrm{BD}=\mathrm{DC}=12 \mathrm{~cm}$.
$\mathrm{OC}=\mathrm{OA}=$ Circum-radius
$=\mathrm{rcm}$.
$\mathrm{AD}=\sqrt{\mathrm{AB}^{2}-\mathrm{BD}^{2}}$
$=\sqrt{(12 \sqrt{5})^{2}-(12)^{2}}$
$=\sqrt{144 \times 5-144}$
$=\sqrt{144(5-1)}=\sqrt{144 \times 4}$
$=24 \mathrm{~cm}$.
In $\triangle \mathrm{OCD}$,
$\mathrm{OD}=(24-\mathrm{r}) \mathrm{cm}$.
$\therefore \mathrm{OC}^{2}=\mathrm{OD}^{2}+\mathrm{CD}^{2}$
$\Rightarrow \mathrm{r}^{2}=(24-\mathrm{r})^{2}+12^{2}$
$\Rightarrow \mathrm{r}^{2}=576-48 \mathrm{r}+\mathrm{r}^{2}+144$
$\Rightarrow 48 \mathrm{r}=720$
$\Rightarrow \mathrm{r}=\frac{720}{48}=15 \mathrm{~cm}$.
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$\therefore$ Length $=(23+\mathrm{x}) \mathrm{m}$
$\Rightarrow 2(\mathrm{x}+23+\mathrm{x})=206$
$\Rightarrow 4 \mathrm{x}=206-46$
$\Rightarrow \mathrm{x}=\frac{160}{4}=40 \mathrm{~m}$
$\therefore$ Length $=40+23=63 \mathrm{~m}$
$\therefore$ Required area $=63 \times 40=2520 \mathrm{~m}^{2}$
71. (d)


Given : $\mathrm{AB}=5$
$\mathrm{DB}=3$
$\therefore \mathrm{AD}=5-3=2$
In the figure we can see that both $\triangle \mathrm{ADC}$ and $\triangle \mathrm{ABC}$ have the same height, $h$.
Area of a triangle
$=\frac{1}{2} \times$ base $\times$ height
When height is constant,
We know, Area of triangle $\alpha$ base,
$\therefore \frac{\text { Area of } \triangle \mathrm{ADC}}{\text { Area of } \triangle \mathrm{ABC}}=\frac{\mathrm{AD}}{\mathrm{AB}}=\frac{2}{5}$
73. (a) $x+\frac{1}{x}=\sqrt{3}$

Cubing both sides,
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$\mathrm{x}^{3}+\frac{1}{\mathrm{x}^{3}}+3\left(\mathrm{x}+\frac{1}{\mathrm{x}}\right)=(\sqrt{3})^{3}$
$\Rightarrow \mathrm{x}^{3}+\frac{1}{\mathrm{x}^{3}}+3 \sqrt{3}=3 \sqrt{3}$
$\Rightarrow \mathrm{x}^{3}+\frac{1}{\mathrm{x}^{3}}=0$
Now, $x^{18}+x^{12}+x^{6}+1$
$=\mathrm{x}^{12}\left(\mathrm{x}^{6}+1\right)+1\left(\mathrm{x}^{6}+1\right)$
$=\left(\mathrm{x}^{12}+1\right)\left(\mathrm{x}^{6}+1\right)$
$=\left(x^{12}+1\right) \cdot x^{3}\left(x^{3}+\frac{1}{x^{3}}\right)=0$

74. (a) $\left(x+\frac{1}{x}\right)^{2}=3$
$\Rightarrow \mathrm{x}+\frac{1}{\mathrm{x}}=\sqrt{3}$
On cubing both sides,
$\mathrm{x}^{3}+\frac{1}{\mathrm{x}^{3}}+3\left(\mathrm{x}+\frac{1}{\mathrm{x}}\right)=3 \sqrt{3}$
$\Rightarrow x^{3}+\frac{1}{x^{3}}=3 \sqrt{3}-3 \sqrt{3}=0$
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$\Rightarrow \mathrm{x}^{6}+1=0$
$\therefore \mathrm{x}^{206}+\mathrm{x}^{200}+\mathrm{x}^{90}+\mathrm{x}^{84}+\mathrm{x}^{18}+\mathrm{x}^{12}+\mathrm{x}^{6}+1$
$=x^{200}\left(x^{6}+1\right)+x^{84}\left(x^{6}+1\right)+x^{12}\left(x^{6}+1\right)+\left(x^{6}+1\right)$
$=0$
75. (b) $\frac{\mathrm{x}}{\mathrm{x}^{2}-2 \mathrm{x}+1}=\frac{1}{3}$
$\Rightarrow \frac{x^{2}-2 x+1}{x}=3$
$\Rightarrow \mathrm{x}-2+\frac{1}{\mathrm{x}}=3$
$\Rightarrow \mathrm{x}+\frac{1}{\mathrm{x}}=5$
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On cubing both sides
$x^{3}+\frac{1}{x^{3}}+3\left(x+\frac{1}{x}\right)=125$
$\Rightarrow \mathrm{x}^{3}+\frac{1}{\mathrm{x}^{3}}=125-3 \times 5=110$
76. (d) The Chalukya dynasty was an Indian royal dynasty that ruled large parts of southern and central India between the 6th and the 12th centuries. The earliest dynasty, known as the "Badami Chalukyas", ruled from Vatapi (modern Badami) from the middle of the 6th century. The Badami Chalukyas began to assert their independence at the decline of the Kadamba kingdom of Banavasi and rapidly rose to prominence during the reign of Pulakesin II. After the death of Pulakesin II, the Eastern Chalukyas became an independent kingdom in the eastern Deccan. They ruled from Vengi
until about the 11 th century. In the western Deccan, the rise of the Rashtrakutas in the middle of the 8 th century eclipsed the Chalukyas of Badami before being revived by their descendants, the Western Chalukyas, in the late 10th century.

77. (d) The Kingdom of Gandhara lasted from the early 1 st millennium BC to the 11 th century AD. It attained its height from the 1 st century to the 5th century under the Buddhist Kushan Kings. Peshawar Valley and Taxila are littered with ruins of stupas and monasteries of this period. Many monuments were created to commemorate the Jataka tales. The Gandhara civilization peaked during the reign of the great Kushan king Kanishka (128-151). The cities of Taxila (Takshasila) at Sirsukh and Peshawar were built. Peshawar became the capital of a great empire stretching from Gandhara to Central Asia. Kanishka was a great patron of the Buddhist faith; Buddhism spread to Central Asia and the Far East across Bactria and Sogdia, where his empire met the Han Empire of China. Buddhist art spread from Gandhara to other parts of Asia.

फुपापिएय
78. (a) India is governed in terms of the Constitution of India which was adopted by the Constituent Assembly on 26th November 1949 and came into force on 26th January 1950.
79. (a) An isohel is line drawn on a map connecting points that receive equal amounts of sunlight. It is derived from helios, meaning 'Sun.'
80. (d) The Uttar Pradesh government has decided to develop Kannauj as a perfume tourism destination.
81. (d) Damodar Valley Corporation is a thermal and hydro power generating public organization of India. It emerged as a culmination of attempts made over a whole century to control the wild and erratic Damodar River. By April 1947, full agreement was practically reached between the three Governments of Central, Bengal and Bihar on the implementation of the scheme and in March 1948, the Damodar Valley Corporation Act (Act No. XIV of 1948) was passed by the Central Legislature, requiring the three governments - the Central Government and the State Governments of West Bengal and Bihar (now Jharkhand) to participate jointly for the purpose of building the Damodar Valley Corporation. The Corporation came into existence on 7 July, 1948 as the first multipurpose river valley project and the first

Public Sector Corporation of independent India.
82. (d) Lumbini is a Buddhist pilgrimage site in the Rupandehi district of Nepal. It is the place where Queen Mayadevi gave birth to Siddhartha Gautama, who as the Buddha Gautama founded the Buddhist tradition. The Buddha lived between roughly 563 and 483 BC . ऊुणाज्जिর্ম
83. (b) A unitary system of government, or unitary state, is a sovereign state governed as a single entity. The central government is supreme and any administrative divisions (sub-national units) exercise only powers that their central government chooses to delegate. Lower-level governments, if they exist at all, do nothing but implement the policies of the national government.
84. (c) Deserts take up about one third ( $33 \%$ ) of the Earth's land surface. Hot deserts usually have a large diurnal and seasonal temperature range, with high daytime temperatures, and low nighttime temperatures (due to extremely low humidity). In hot deserts the temperature in the daytime can reach $45^{\circ} \mathrm{C} / 113^{\circ} \mathrm{F}$ or higher in the summer, and dip to $0^{\circ} \mathrm{C} / 32^{\circ} \mathrm{F}$ or lower at nighttime in the winter. धुणाजिएरि
85. (d) The Ajanta Caves in Aurangabad district of Maharashtra are about 30 rock-cut Buddhist cave monuments which date from the 2 nd century BCE to about 480 or 650 A.D. The caves include paintings and sculptures are masterpieces of Buddhist religious art, with figures of the Buddha and depictions of the Jataka tales. Most of the paintings belong to the Vakataka-Gupta period.
86. (a) A book titled "India's Economy From Nehru To Modi: A Brief History" authored by Pulapre Balakrishnan.
87. (b) In summer, when the barometer falls suddenly, a thunderstorm can be expected, and if it does not rise again upon its cessation, the weather will probably continue unsettled for several days. In summer, when a thunderstorm happens, there is little or no depression of the barometer. धुणाज्जिएय
88. (c) The Supreme Court, the highest in the country, may issue writs under Article 32 of the Constitution for enforcement of Fundamental Rights and under Articles 139 for enforcement of rights other than Fundamental Rights, while High Courts, the superior courts of the States, may issue writs under Articles 226. The

Constitution broadly provides for five kinds of "prerogative" writs: habeas corpus, certiorari, mandamus, quo warranto and prohibition.
89. (c) The NITI Aayog has declared the holy city of Haridwar in Uttarakhand as the best aspirational district.

छुगा प्जिय-
90. (a) Pulicat Lake: the second largest brackish water lake or lagoon in India which straddles the border of Andhra Pradesh and Tamil Nadu states on the Coromandal Coast in South India; Chilka Lake: a brackish water lagoon, spread over the Puri, Khurda and Ganjam districts of Odisha; Wular Lake: India's largest fresh water lake and one of the largest in Asia, located in Bandipora district in Jammu and Kashmir; and Sambhar Lake: India's largest inland salt lake, south west of Jaipur and north east of Ajmer along National Highway 8 in Rajasthan.
91. (d) Iron is a chemical element with the symbol Fe and atomic number 26. It is a metal in the first transition series. It is the most common element (by mass) forming the planet Earth as a whole, forming much of Earth's outer and inner core. It is the fourth most common element in the Earth's crust. Wrought iron is the purest form of iron. It contains less than $0.25 \%$ carbon.
92. (d) In accounting, gross profit or sales profit is the difference between revenue and the cost of making a product or providing a service, before deducting overhead, payroll, taxation, and interest payments. Gross profit $=$ Net sales (total receipts) - Cost of goods sold (total expenditure).

धुण्जिए
93. (c) Dutch racing Red Bull's driver Max Verstappen has won the Belgian Formula 1 Grand Prix 2022.
94. (d) Nichrome is a non-magnetic alloy of nickel, chromium, and often iron, usually used as a resistance wire. Patented in 1905, it is the oldest documented form of resistance heating alloy. A common alloy is $80 \%$ nickel and $20 \%$ chromium, by mass, but there are many others to accommodate various applications. It is silvery-grey in colour, is corrosion-resistant, and has a high melting point of about 1400 degree C ( 2552 degree F). Due to its relatively high electrical resistivity and resistance to oxidation at high temperatures, it is widely used in electric heating elements, such as in hair dryers, electric ovens, soldering iron, toasters, and even electronic cigarettes. Typically,

Nichrome is wound in coils to a certain electrical resistance, and current is passed through to produce heat. ऊुण্ভিৰ্ম
95. (c) Fort William at Calcutta was besieged on June 15, 1756 by Nawab of Bengal Siraj-ud-daula and he captured it.
English prisoners at Calcutta were lodged in a prison room of the fort. The room was very small and so only 23 out of 146 prisoners survived the next day.
96. (b) Pandit Bhimsen Joshi was an Indian vocalist in the Hindustani classical tradition. A member of the Kirana Gharana (school), he is renowned for the khayal form of singing, as well as for his popular renditions of devotional music (bhajans and abhangs). He was the most recent recipient of the Bharat Ratna, India's highest civilian honour, awarded in 2008. Bhimsen Joshi was known for his powerful voice, amazing breath control, fine musical sensibility and unwavering grasp of the fundamentals, representing a subtle fusion of intelligence and passion that imparted life and excitement to his music. धुगছिएर
97. (d) Charles Darwin had proposed "theory of

Evolution". The theory of evolution came into view by the reawakening of ancient materialistic philosophies and became widespread in the 19th century. This philosophy supposes that matter is absolute and infinite. This materialistic philosophy does not hold anything to be real except the matter, so it tries to explain the universe and nature through purely material factors.
98. (b) 23-year-old Divita Rai from Karnataka has won the prestigious title of Miss Diva Universe 2022.
99. (a) The Niyamgiri is a hill range situated in the districts of Kalahandi and Rayagada in Odisha. These hills are home to Dongria Kondh indigenous people. In recent times these hills are in media discussions due to the conflict of inhabitant tribals and Bauxite Mining Project by Vedanta Aluminium Company.
100.(d) Article 248 of the Constitution deals with residuary powers. Parliament has exclusive power to make any law with respect to any matter not enumerated in the Concurrent List or State List. Such power shall include the power of making any law imposing a tax not mentioned in either of those Lists. फ़ाগ্ভির্স

