Q. 1

Study the pie-chart and answer the question that follows.
The following pie chart gives the information about the percentage of brand X car owners in five different states
out of 4 crore car owners in each of these states.

## Owners of car of brand $X$



If the respective ratio of the total number of brand X car owners and the total number of brand P car owners in State $E$ is $10: 4$, then the total number of brand $P$ car owners in State $E$ is what percentage less than the total number of brand X car owners in State A ?

Ans
X1. $63 \%$
, 2. $44 \%$
X 3. $65 \%$
X4. 59\%
Q. 2 Find the $4^{\text {th }}$ proportional to 9, 7 and 153.

Ans
$\times 1.102$
$\times 2.149$
$\times 3.122$

- 4.119
Q. 3 The radius and the height of a right circular cylinder are 14 cm and 21 cm , respectively. How much water (in $\mathrm{cm}^{3}$ ) will it hold?
(Take $\pi=\frac{22}{7}$.)
Ans
$\times 1.13174$

2. 12936

X 3.13026
X 4.12984
Q. 4 An order of manufacturing nuts can be completed by 3 males or 4 females in 46 days. How many days will 7 males and 6 females together take to manufacture the same number of nuts?
Ans
$\times 1.13$
2. 12
3. 15
4. 14
Q. 5 If $\frac{y}{x}=\frac{b+7}{b-7}$, then the value of $\frac{y^{2}+x^{2}}{y^{2}-x^{2}}$ is:

Ans
$\times 1 \cdot \frac{b^{2}+49}{7 b}$
$\times 2 . \frac{b^{2}-49}{14 b}$
X3. $\frac{b^{2}+49}{28 b}$
4. $\frac{b^{2}+49}{14 b}$
Q. 6 There are three papers in an examination. Marks obtained by four students have been tabulated below:

Who has scored the least marks and in which paper?

| Student | P1 | P2 | P3 |
| :--- | :--- | :--- | :--- |
| Mohit | 79 | 78 | 77 |
| Shivam | 73 | 87 | 80 |
| Vishal | 82 | 74 | 83 |
| Viraj | 77 | 89 | 86 |

Ans 1. Shivam, P1

X 2. Vishal, P2
X 3. Viraj, P1
X 4. Mohit, P3
Q. 7 Suppose $\triangle P Q R$ and $\triangle A B C$ are congruent triangles under $R H S$, with $\angle P Q R=\angle A B C=$ $90^{\circ}$. If $A B=15 \mathrm{~cm}$ and $B C=8 \mathrm{~cm}$, find $P R$.
Ans
$\times 1.15 \mathrm{~cm}$
X 2.19 cm

- 3.17 cm

X 4.8 cm
Q. 8 The least number, which when divided by 8, 10 and 12 leaves the remainder 2, 4 and 6, respectively, is:
Ans
$\times 1.57$
X2. 120

- 3.114
$\times 4.60$
Q. 9 In the month of April 2022, the temperature in the second week of a town was recorded in degree centigrade as $42,43,41,42,44,40$ and 42 . Calculate the average temperature of the week (in degree centigrade).
Ans
$\times 1.43^{\circ} \mathrm{C}$
$\times 2.41^{\circ} \mathrm{C}$
$\times 3.40^{\circ} \mathrm{C}$
- $4.42^{\circ} \mathrm{C}$
Q. 10 Find the LCM of 32,93 and 16.

Ans
$\times 1.2769$
X 2.1488

- 3.2976

X 4.2796
Q. 11 The radius and the height of a cone are 4.9 cm and 12 cm , respectively. The cone is cut from the middle perpendicularly into two equal parts.

What is the volume (in $\mathrm{cm}^{3}$ ) of one such part? (Take $\pi=\frac{22}{7}$.)
Ans
$\times 1.146 .44$
$\times 2.144 .18$
X 3.148 .76
*. 150.92
Q. 12 Out of his total income, Ravi spends $15 \%$ on house rent and $75 \%$ of the rest on household expenses. If he saves ₹ 9,690 , what is the total income of Ravi?

Ans
X 1. ₹45,800
X 2. ₹45,700

- 3. ₹ 45,600

X 4. ₹45,850
Q. 13 Two numbers are in the ratio $3: 4$ and their LCM is 36 . The sum of the numbers is:

Ans
$\times 1.32$

- 2.21
$\times 3.46$
$\times 4.40$
Q. 14 Two trains are running towards each other on parallel tracks with the same speed. The length of each train is 110 metre. If they cross each other in 11 sec , then the speed of each train is:

Ans
X $1.30 \mathrm{~m} / \mathrm{sec}$
2. $20 \mathrm{~m} / \mathrm{sec}$
3. $10 \mathrm{~m} / \mathrm{sec}$
$4.15 \mathrm{~m} / \mathrm{sec}$
Q. 15 Two lines PS and QR intersect at U , thus forming two triangles, $\triangle \mathrm{PUQ}$ and
$\triangle S U R$. If $\angle P Q U=50^{\circ}, P Q=R S$, and $P Q \| R S$, find $\angle S R U$.
Ans
$\times 1.60^{\circ}$
$\times 2.120^{\circ}$
$\times 3.130^{\circ}$

- $4.50^{\circ}$
Q. 16 In a circular race of $2400 \mathrm{~m}, \mathrm{X}$ and Y start from the same point and at the same time at speeds of $54 \mathrm{~km} / \mathrm{h}$ and $126 \mathrm{~km} / \mathrm{h}$. In how much time will they meet again for the first time on the track when they are running in the opposite direction?
Ans
$X 1.62$ seconds
X 2.53 seconds
- 3.48 seconds

X 4.42 seconds
Q. 17 The marked price of a pan was ₹ 121 . This price was $10 \%$ above the cost price. It was sold at a discount of $20 \%$ on the marked price. Find the approximate profit or loss percentage.
Ans $\times 1$. Profit $12 \%$
2. Loss 6\%
3. Loss $12 \%$
4. Profit 6\%
Q. 18 Two trains, 130 and 150 metres long, are running in the same direction at speeds of 84 $\mathrm{km} / \mathrm{h}$ and $66 \mathrm{~km} / \mathrm{h}$ respectively. In how much time will the first train cross the second?
Ans
$\times 1.45 \mathrm{sec}$
$\times 2.65 \mathrm{sec}$

- 3.56 sec
$\times 4.54 \mathrm{sec}$
Q. 19 Aditya and Vinay can complete a piece of work in 20 and 24 days, respectively. They began the work together, but Aditya left after some days and Vinay completed the remaining work in 15 days. After how many days did Aditya leave?

Ans
$\times 1.3 \frac{1}{11}$
X2. $1 \frac{1}{11}$
จ3. $4 \frac{1}{11}$
X4. $2 \frac{1}{11}$
Q. 20 A sum of ₹ 26,200 is divided among $P, Q$ and $R$ such that $P$ receives $20 \%$ less than $Q$ and $Q$ receives $10 \%$ less than $R$. The ratio between P's share and $Q$ 's share is:

Ans
$\times 1.18: 25$
X2. 5:4
X 3. $25: 18$
4. $4: 5$
Q. 21 The mean proportional of two numbers ' $X$ ' and ' $Y$ ' is 26. What is the value of ' $X$ ' if ' $Y$ ' is four times ' X '?
Ans
$\times 1.14$
$\times 2.12$

- 3.13
$\times 4.52$
Q. $22 \mathrm{x}^{2}+54 \mathrm{x}+648=$ ?

Ans $\quad X 1 \cdot(x-36)(x+18)$
X 2. $(x-36)(x-18)$
2. $(x+36)(x+18)$

X4. $(x+36)(x-18)$
Q. 23 What would be the total amount (in Rs.) on principal amount Rs. 1 lakh for 1 year at a compound interest rate of $\mathbf{1 2 \%}$ per annum compounding is done half-yearly?
Ans
X 1. 1,12,000
2. 1,12,360

X 3.1,06,000
X 4. 1,06,180
Q. 24 The average weight of 25 students was 62 kg . Later it was revealed that an entry of 42 kg was recorded in place of 52 kg . Also, it was revealed that a weight of 55 kg was recorded twice by mistake. What is the corrected mean?

Ans
1.60.2
$\times 2.61 .2$
$\times 3.62$
X 4.62 .4
Q. 25 A silver merchant professes to sell his goods at cost price but uses a 600 gm weight instead of the 1 kg weight. What is his gain percentage?
(Give your answer to two decimal points, without any rounding off.)
Ans
X 1.56.66\%
2. $66.66 \%$

X 3.60.66\%
X4.63.33\%

