MBA PIONEER 2024

Data Interpretation & Logical Reasoning

DILR Set Group - 4

**Directions (1-5) Read the following passage and answer the given questions.**

Graph (i) shows volume wise share of various companies in the car market in India, for March 2022.

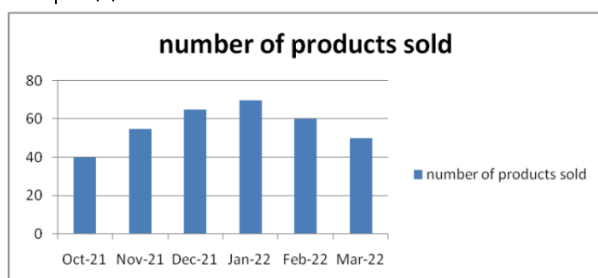Graph (ii) shows the total number of cars sold from October 2021 to March 2022 in thousands.

Graph (iii) shows ratios of market prices of cars of the companies which are written next to each other, ie;

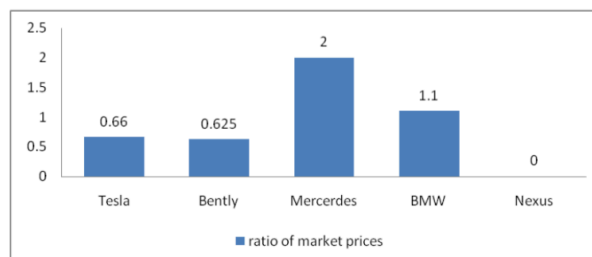$$\frac{Price\ of\ Bentley}{Price\ of\ Tesla} = 0.66$$

Graph (i)
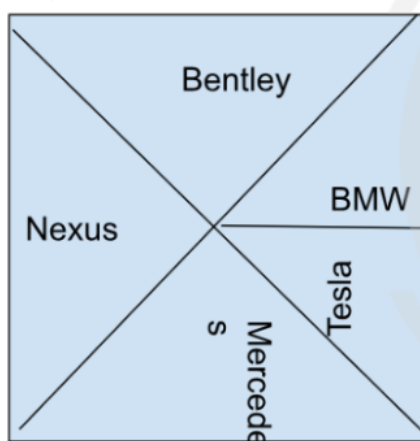
Graph (ii)

Graph (iii)

Q1 What is the share of Nexus in total sales (in Rs.) of cars in March 2022?

(A) 32%

(B) 48%

(C) 60%

(D) Can't be determined

Q2 If Tesla had 20% share in volume in November 2021, then what is the ratio of its sales (units) in November 2021 to that in march 2022?

(A) 11 : 10   (B) 8 : 5

(C) 44 : 25   (D) None of these

Q3 If a BMW costs Rs. 2.5 lakhs, then what were the sales of Bentley cars in March 2022?

(A) 125 cr   (B) 160 cr

(C) 300 cr   (D) 250 cr

Q4 How many cars cost more than the average price of cars in march 2022 among the given group of cars?

(A) 1

(B) 2

(C) 3

(D) Can't be determined

Q5 If the cost of Bentley is Rs. 108000 less than that of nexus, then the Total sale from selling mercedes is what % more/less than that by BMW in march 2022?

(A) 60% less

(B) Equal sale of both in March 2022

(C) 40% more

(D) 25% less

**Directions (6-10) Read the following passage and answer the given questions.**

Study the following Line graph, Bar graph, and Pie charts which show the Petrochemical refinery plant utilization compared to its full efficiency, Petrochemical product output in Million Gallons, and Export and Import of Petroleum products from year 2009–10 to 2016–17 respectively.

Petrochemical refinary plant utilization as a Percentage(%) of total plant capacity

Petrochemical product output in Million Gallons(MG)
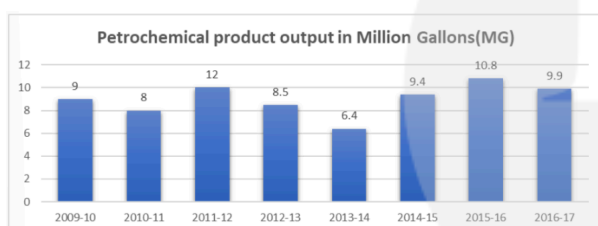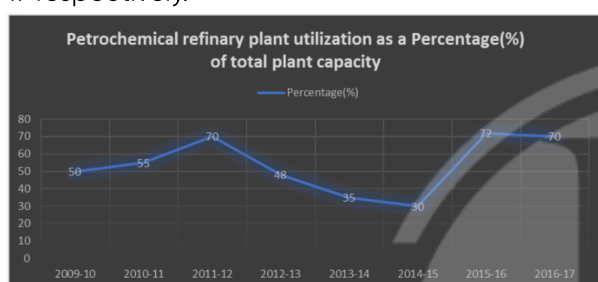
Export(in '000s Gallon)
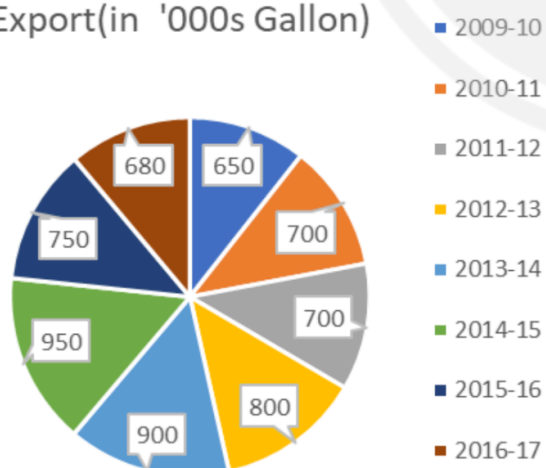
Import(in '000s Gallon)
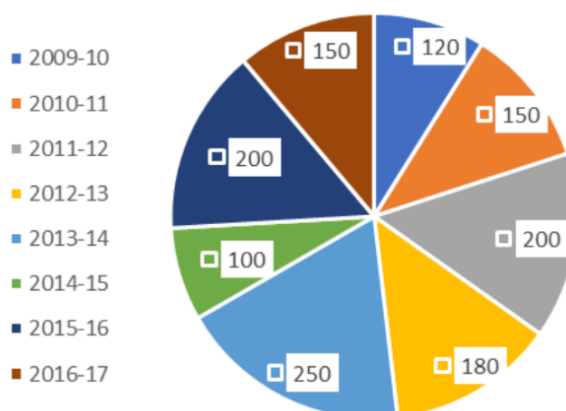
Q6 What is the total capacity of the Petrochemical plant in the year 2011–12?

(A) 17.75 MG

(B) 17.14 MG

(C) None of these

(D) Cannot be determined

Q7 What is the growth/decline (in percentage) of total capacity of the Petrochemical plant in the year 2016–17 from the year 2009–10?

(A) 21.45

(B) 27.57

(C) None of these

(D) Cannot be determined

Q8 Total capacity of the Petrochemical plant is highest in which year?

(A) 2011-12   (B) 2014-15

(C) 2015-16   (D) 2016-17

Q9 How many times exports are increasing when imports are decreasing for any consecutive year?

(A) 4   (B) 1

(C) 3   (D) 2

Q10 What is the maximum Annual percentage growth rate (%) in Import of Petrochemical products from 2009–10 (Consider this as a base year)?
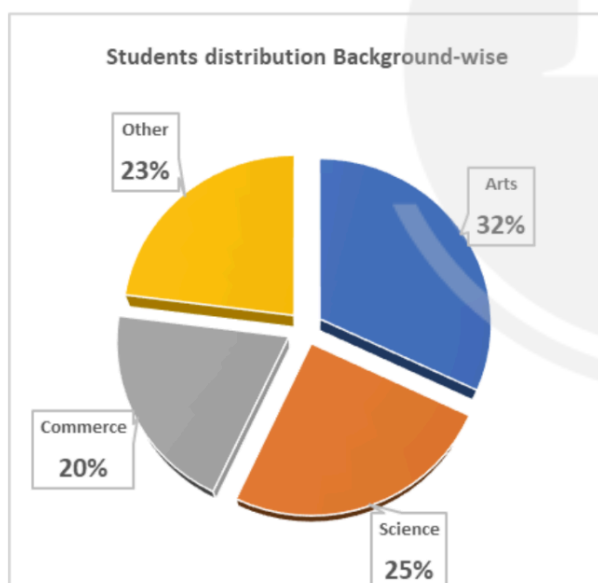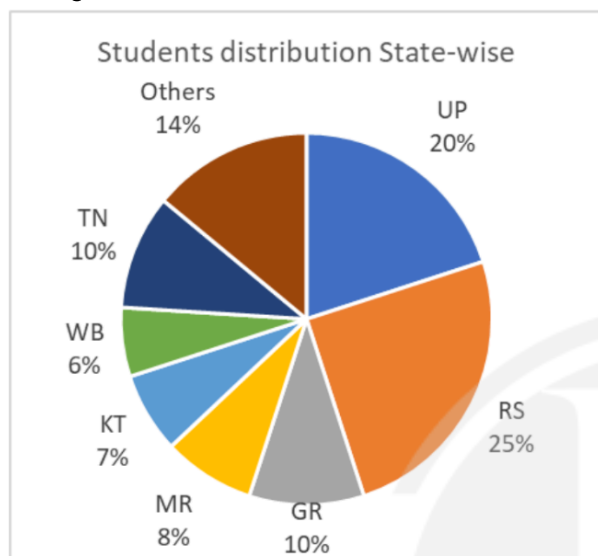
(A) 25%   (B) 25.25%

(C) 108.33%   (D) None of these

Directions (11-15) Read the following passage and answer the given questions.

The following pie charts are based on students pursuing a degree in ABC university from different states and their combined background.

Students distribution State-wise

Students distribution Background-wise

Total number of students pursuing a degree in ABC university is 4200.

Note: – Those students are considered from different states are also students considered from different backgrounds.

Q11 What percentage of students from UP and RS combined form the students from all the other states excluding Others in the pie chart?

(A) 91.11%   (B) 98.81%
(C) 109.75%   (D) None of these

Q12 How many students from the ABC university which has the maximum state representation are from commerce background, if state–wise distribution of the students from each background is same as distribution of students' background–wise?

(A) 840   (B) 210
(C) 220   (D) 1050

Q13 If students from both UP and RS are having background of neither Commerce nor Science then at most what percentage of total students from others background will be for other states?

(A) 23%
(B) 14%
(C) 10%
(D) Can't be determined

Q14 If students from both UP and RS are having backgrounds of neither Commerce nor Science then at most what number of states which have all its students from other backgrounds except UP and RS?

(A) 1   (B) 4
(C) 2   (D) 3

Q15 If at least 10% students of every state are from Commerce background, then at most how many percent of students of other states are from Commerce background?
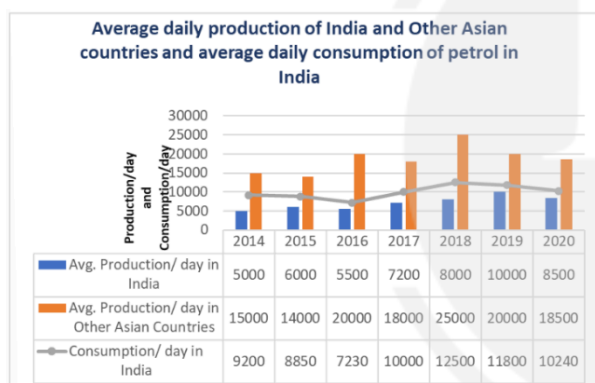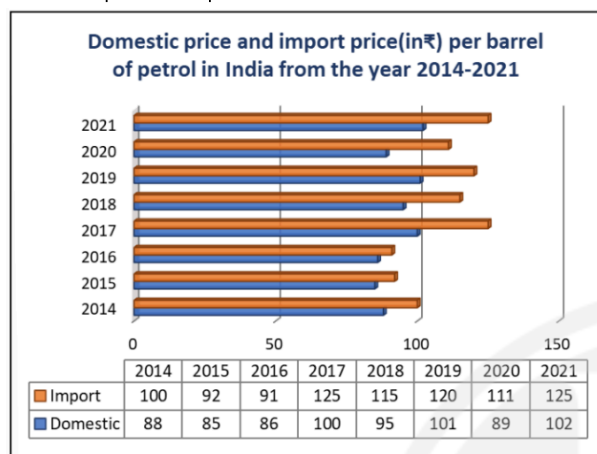
(A) 81.43%
(B) 70%
(C) 142.86%
(D) Can't be determined

Directions (16-20) Read the following passage and answer the given questions.

The following charts provide the information from 2014 to 2021. The first bar graph shows the prices of petrol per barrel, both for imports and domestic consumptions. The second bar graph with line chart shows average daily production of petrol in India and other Asian countries where line chart indicates average daily consumption of petrol in India.

Domestic price and import price(in₹) per barrel of petrol in India from the year 2014-2021

	2014	2015	2016	2017	2018	2019	2020	2021
Import	100	92	91	125	115	120	111	125
Domestic	88	85	86	100	95	101	89	102

Average daily production of India and Other Asian countries and average daily consumption of petrol in India

	2014	2015	2016	2017	2018	2019	2020
Avg. Production/ day in India	5000	6000	5500	7200	8000	10000	8500
Avg. Production/ day in Other Asian Countries	15000	14000	20000	18000	25000	20000	18500
Consumption/ day in India	9200	8850	7230	10000	12500	11800	10240

Note: −All the quantities of petrol in terms of production and consumption are measured in barrels.

Q16 In 2016, what is the total cost incurred by India in the entire year for imported petrol, if India imported petrol to meet its requirement?
(A) 11,32,60,450 (B) 12,11,08,065
(C) 5,76,19,380 (D) 14,33,33,110

Q17 In 2015, what is the difference between the total cost of domestic production of petrol in India and the total cost of petrol imported by India in order to meet demands in this year?

(A) ₹5,52,000/day (B) ₹2,62,200/day
(C) ₹8,14,200/day (D) ₹2,47,800 /day

Q18 Which of the following statement/s is/are true?
(i) The percentage change in the price of imported petrol in 2017 as compared to 2016 is approximately 50%.
(ii) In 2017, the absolute difference between the percentage change in the price of domestic petrol and the percentage change in the price of imported petrol as compared to 2016 is approximately 21%.
(iii) The percentage change in the consumption of petrol by India from 2014 to 2019 is approximately 28%.
(A) (i) only
(B) (ii) only
(C) (i) and (ii) only
(D) (ii) and (iii) only

Q19 What is the approximate difference between the percentage change in the price of imported petrol and the price of domestic petrol in 2021 as compared to 2020?
(A) 2.55% (B) 9.95%
(C) 1.99% (D) 1.25%

Q20 What is the average annual growth rate of average daily production of other Asian countries from 2014 to 2020?
(A) 23.33% (B) 15.25%
(C) 3.79% (D) 3.89%

Directions (21–25) Read the following passage and answer the given questions.
Five teams belonging to five different countries took part in a hockey tournament. Each team played against every other team once. Exactly two of the matches resulted in draws. No team had more than one draw. The number of goals scored by each team in a match is at least 1 and at most 4.

A team scores 3 points for a win, 1 point for a draw, and no(0/Zero) point for a loss.

After the tournament, the results were tabulated on a computer, but as there was a technical problem some of the data from the table was missing and the table shown was as follows :

	Goals for	Goals against	Total points
India	11		
Germany	8	11	4
Netherland	11	11	3
Pakistan	10	10	
Australia	11	6	10

Further, it was also known that, Netherland won against Germany and the goal difference for the match was 3. In the match between Pakistan and Australia, the total number of goals scored was 4 and the goal difference was zero. Two teams scored 4 goals against Netherland. Germany scored 3 goals against India.

Q21 What was the goal difference in the match between Germany and India?
(A) 0
(B) 1
(C) 2
(D) Can't be determined

Q22 What was the total number of points scored by Pakistan in the match against Australia and India?
(A) 3
(B) 4
(C) 6
(D) Can't be determined

Q23 What was the total number of goals scored by India in the match against Australia and Pakistan?
(A) 8   (B) 10
(C) 6   (D) None of these

Q24

In the match between India and Australia, the total goal scored in the match and goal difference by both India and Australia respectively were?
(A) 7, 1   (B) 1, 7
(C) 6, 2   (D) 2, 6

Q25 The total number of goals and the total number of points scored against Pakistan by Australia and Germany together respectively were?
(A) 5, 3
(B) 3, 1
(C) 5, 4
(D) Can't be determined

Directions (26-30) Read the following passage and answer the given questions.

Four players A, B, C, and D started playing a card game in rounds. They played a total of 10 rounds of games. In each round there will be exactly one winner and each of the three losers will pay some amount to the winner. But the amount paid by each of the losers to the winner is decided based on the results of all the previous rounds. For example, in the nth round, if X is the winner and Y is the loser, then the amount paid by Y to X is

a – ₹3, if X won less number of rounds than Y in the first (n−1) round

b – ₹2, if X won an equal number of rounds as Y in the first (n − 1) round

c – ₹1, if X won more number of rounds than Y in the first (n − 1) round

Each of the four players A, B, C, and D started with a number of ₹20 and the following table gives the partial information about the amounts (in ₹) with them after the respective rounds.

Round Person	1	2	3	4	5	6	7	8	9	10
A										
B		25		20						
C			20	18			19			

D	18			22	20				

Further, it is also known that, B won round–7 and round–9. C won round–8 and D won round–10.

Q26 Who won round–2?
(A) D   (B) C
(C) B   (D) A

Q27 Who has the maximum amount at the end of all rounds?
(A) B   (B) A
(C) D   (D) C

Q28 Who won round–6?
(A) C   (B) B
(C) A   (D) D

Q29 If after any round of the game, a person is awarded as the Impact player only when he/she occupies more than 30% of the total amount (in ₹). Then who owns the maximum number of Impact player awards?
(A) A and D   (B) D and C
(C) C and A   (D) B and A

Q30 What is the maximum amount of difference(in ₹) between any two persons at any time in the game but within the same round?
(A) 11   (B) 16
(C) 13   (D) 12

Answer Key

Q1	(A)		Q16	(C)
Q2	(C)		Q17	(D)
Q3	(D)		Q18	(D)
Q4	(C)		Q19	(C)
Q5	(B)		Q20	(D)
Q6	(B)		Q21	(A)
Q7	(A)		Q22	(B)
Q8	(B)		Q23	(D)
Q9	(D)		Q24	(C)
Q10	(D)		Q25	(C)
Q11	(C)		Q26	(C)
Q12	(B)		Q27	(C)
Q13	(C)		Q28	(A)
Q14	(A)		Q29	(D)
Q15	(A)		Q30	(B)

Hints & Solutions

Q1. **Text Solution:**

Topic: Multiple Charts

From graph (iii)

$\dfrac{Price\ of\ Bentley}{Price\ of\ Tesla} = \dfrac{2}{3}$

$\dfrac{Price\ of\ Mercedes}{Price\ of\ Bentley} = \dfrac{5}{8}$

$\dfrac{Price\ of\ BMW}{Price\ of\ Mercedes} = 2$

$\dfrac{Price\ of\ Nexus}{Price\ of\ BMW} = 1.1$

If the price of a Bentley car is 8x, the price of Tesla, Mercedes, BMW, and Nexus are 12x, 5x, 10x, and 11x respectively.

from graph (i),

% share of BMW and Tesla are 12.5% each while those of Bentley, Nexus and Mercedes are 25% each.

Sale of Nexus in (value) in 2022

$= 11x \times \dfrac{25}{100} \times 50000$

Total sales (in value) = $(8x + 11x + 5x) \times \dfrac{25}{100} \times 50000 + (12x + 10x) \times \dfrac{12.5}{100} \times 50000$.

$= (24x + 11x) \times \dfrac{25}{100} \times 50000$

$= 35x \times \dfrac{25}{100} \times 50000$.

% share of sales of Nexus $= \dfrac{11}{35} \times 100$

= 32% (approx).

Hence, option a) is the correct answer.

Q2. **Text Solution:**

Topic: Multiple Charts

Sale of Tesla in November 2021 $= \dfrac{20}{100} \times 55000$

= 11000

Sale of Tesla in March 2022 $= \dfrac{12.5}{100} \times 50000$

= 6250

therefore, the ratio will be,

$= \dfrac{Sales\ of\ Tesla\ in\ November\ 2021}{Sales\ of\ Tesla\ in\ March\ 2022}$

= 11000 : 6250

= 44 : 25

Hence 44 : 25, option c) is correct.

Q3. **Text Solution:**

Topic: Multiple Charts

If the price of a Bentley car is 8x, the price of Tesla, Mercedes, BMW, and Nexus are 12x, 5x, 10x, and 11x respectively.

if a BMW costs 2.5 lakhs, then Bentley will cost $= \dfrac{2.5}{10} \times 8$ = 2 lakhs.

Sale of Bentley in March 2022

$= \dfrac{25}{100} \times 50000 \times 2 = 25000$ lakhs.

which is 250 cr.

Hence option d) is correct.

Q4. **Text Solution:**

Topic: Multiple Charts

The ratio of price of all the given companies is

Tesla : Bentley : Mercedes : BMW : Nexus

3 : 2

8 : 5

1 : 2

10 : 11

= (3 × 8 × 1 × 10) : (2 × 8 × 1 × 10) : (2 × 5 × 1 × 10) : (2 × 5 × 2 × 10) : (2 × 5 × 2 × 11)

= 240 : 160 : 100 : 200 : 220

= 12 : 8 : 5 : 10 : 11

Volumes of market share of tesla, bentley, mercedes, BMW and Nexus in march 2022 are in the ratio 1 : 2 : 2 : 1 : 2

Let x be the ratio of the Price of each car.

Average price in march 2022

$= \dfrac{(12x \times 1 + 8x \times 2 + 5x \times 2 + 10x \times 1 + 11x \times 2)}{(1+2+2+1+2)}$

$= \dfrac{70x}{8}$

= 8.75x

Therefore, the price of Tesla, BMW and Nexus are greater than the average price of all the cars in March 2022.

Q5. **Text Solution:**

Topic: Multiple Charts

If the price of a Bentley car is 8x, the price of Tesla, Mercedes, BMW, and Nexus are 12x, 5x, 10x, and 11 x respectively.

Therefore, the market price of Bentley is 8x and Nexus is 11x.

according to the question:

11x – 8x

3x = 1,08,000

x = 36000.

Now market price of Mercedes = 5x = 1,80,000
Market price of BMW = 10x = 3,60,000
Total number of Mercedes sold in March 2022
= 50000 × 25% = 12500
Total number of BMW sold in March 2022
= 50000 × 12.5% = 6250.
Sales from Mercedes = 12500 × 1,80,000
= 2250000000
Sales from BMW = 6250 × 3,60,000
= 2250000000
Both have the same sale.
Hence, option b) is the correct answer.

Q6. **Text Solution:**
Topic: Multiple Charts
Total Capacity = $\frac{Output}{Utilization\ in\ \%} \times 100$
In the year 2011–12 total Capacity = $\frac{12}{70} \times 100$ = 17.14MG

Q7. **Text Solution:**
Topic: Multiple Charts
In the year 2009–10 total capacity = $\frac{9}{50} \times 100$ = 18 MG
In the year 2016–17 total capacity = $\frac{9.9}{70} \times 100$ = 14.14 MG
Total capacity declined from the year 2009–10 to 2016–17
So, the decline of total plant capacity (in %) is = $\frac{18-14.14}{18} \times 100$
= 21.45%

Q8. **Text Solution:**
Topic: Multiple Charts
In the year 2011–12 total capacity = $\frac{12}{70} \times 100$ = 17.14 MG
In the year 2014–15 total capacity = $\frac{9.4}{30} \times 100$ = 31.33 MG
In the year 2015–16 total capacity = $\frac{10.8}{72} \times 100$ = 15 MG
In the year 2016–17 total capacity = $\frac{9.9}{70} \times 100$ = 14.14 MG

Q9. **Text Solution:**
Topic: Multiple Charts

From two pie charts Export is increasing when Import is decreasing can be seen for the year 2011–12 compared to 2012 – 2013 and 2013–14 compared to 2014 – 15.

Q10. **Text Solution:**
Topic: Multiple Charts
Note:– Growth = Big value–Small value
Percentage growth = $\frac{Growth}{Small\ Value} \times 100$
Here 2009–10 is the base year, so the no. of years to take for 2010–11 is 1, and 2013–14 is 4.
Annual percentage growth = $\frac{1}{No.\ of\ years\ to\ take} \times \frac{Growth}{Small\ Value} \times 100$
So, for the year 2010–11 Annual percentage growth =$\frac{1}{1} \times \frac{150-120}{120} \times 100$ = 25%
So, for the year 2011–12 Annual percentage growth =$\frac{1}{2} \times \frac{200-120}{120} \times 100$ = 33.33%
So, for the year 2012–13 Annual percentage growth =$\frac{1}{3} \times \frac{180-120}{120} \times 100$ = 16.67%
So, for the year 2013–14 Annual percentage growth =$\frac{1}{4} \times \frac{250-120}{120} \times 100$ = 27.08%
For any of the subsequent years, the Annual percentage growth rate will not be increased by than maximum (33.33) % value of the above as **no. of year to take** will increase by 1 for next year. Hence it is advisable not to calculate.

Q11. **Text Solution:**
Topic: Pie Charts
Students from UP and RS = (20 + 25)% = 45%
Students from all the other states excluding Others = (55 – 14)% = 41%
So, Students from UP and RS as a percentage of students from all the other states excluding Others= $\frac{45}{41} \times 100$
= 109.75%

Q12. **Text Solution:**
Topic: Pie Charts
The state with the maximum number of students is RS (25%)
Number of students from RS =$\frac{25}{100} \times 4200$ = 1050
Students from RS from a commerce background

= 20% of 1050

$$= \frac{20}{100} \times 1050$$

= 210

Q13. Text Solution:

Topic: Pie Charts

The total percentage of students from UP and RS is

= 20 + 25 = 45%

Total percentage of students from Commerce and Science background is = 20 + 25 = 45%

Total percentage of students from Others and Arts = 23 + 32 = 55% −−−>(i)

percentage of students in other states is 14%

For, at most students from other states from other backgrounds, first you have to fulfil the students from (i) to students from state UP and RS, which is 45%.

So, 55 − 45 = 10% will be at most of the total students from other backgrounds for other states.

Q14. Text Solution:

Topic: Pie Charts

The total percentage of students from UP and RS is

= 20 + 25 = 45%

The total percentage of students from Commerce and Science background is = 20 + 25 = 45%.

Arts and others = 100 − 45 = 55%

But here a catch that all students from UP and RS will be from Arts and others so the remaining percentage for other colleges = 55 − 45 = 10%

Now in this 10%, WB can be a part, KT can be a part and MR can be a part but only 1 at a time.

So only 1 college has all its students from others.

Q15. Text Solution:

Topic: Pie Charts

Assume the total student is 100%

When at least 10% of the students from each state are considered from Commerce background that will be 10% of the total student.

Hence, for other states, 10% of 14% = 1.4% of the total students are initially fixed for Commerce background.

Students in Commerce background = 20%, In which 10% are taken out for all the states to satisfy earlier conditions. Then the rest 20% − 10%

= 10% students you can utilize for the assigned task.

To maximize the number of students in other states the rest (10%) of students from Commerce background have to consider.

So, it is 1.4% + 10% = 11.4% of the total students in other states who are from a Commerce background.

So required percentage of students from other states are from a Commerce background is

$$= \frac{11.4\%}{14\%} \times 100 = 81.43\%$$

Q16. Text Solution:

Topic: Bar Charts

The total consumption of petrol in India in 2016 is 7230 barrels per day while the total domestic production of petrol is 5500 barrels per day.

This means that India has to import 7230 − 5500

= 1730 barrels of petrol per day.

In 2016, the cost of imported petrol was ₹91 per barrel.

So, the total cost of imported petrol per day is 1730 × 91 = ₹157430

So, the total cost of imported petrol for the entire year (Leap year = 366 days) = 157430 × 366

= ₹5,76,19,380.

Q17. Text Solution:

Topic: Bar Charts

In 2015, the domestic production of petrol in India was 6000 barrels per day while the consumption was 8850 barrels per day.

This means that India had imported 8850 − 6000

= 2850 barrels per day.

The price of domestic petrol in 2015 was ₹85 per barrel

The price of imported petrol in 2015 was ₹92 per barrel

So, the total cost of domestic petrol was 6000 × ₹85 = ₹5,10,000 per day while the cost of imported petrol was 2850 × ₹92 = ₹2,62,200 per day.

Thus the required difference is

₹5,10,000 − ₹2,62,200 = ₹2,47,800 per day.

Q18. Text Solution:

Topic: Bar Charts

Note: − Percentage change is, the change in value of current year compared to previous year in terms of Previous year,

i.e $\frac{Current\ year - previous\ year}{previous\ year} \times 100$

The percentage change in the price of imported petrol in 2017 is

$= \frac{125-91}{91} \times 100$

= 37.36%

So, statement (i) is false.

Similarly,

The percentage change in the price of domestic petrol in 2017 is

$= \frac{100-86}{86} \times 100$

= 16.28%

while the percentage change in the price of imported petrol is 37.36%.

The difference is 37.36% − 16.28% = 21.08%.

So, statement (ii) is true.

The consumption of petrol by India has changed by India from 2014 to 2019 is

$= \frac{11800-9200}{9200} \times 100$

= 28.26%

So, statement (iii) is true

Q19. Text Solution:

Topic: Bar Charts

For the year 2021, The price of imported petrol has changed by

$= \frac{125-111}{111} \times 100$

= 12.61%

Similarly, the change in the price of domestic petrol is by

$= \frac{102-89}{89} \times 100$

= 14.60%

The difference between these values is

= 14.60% − 12.61% = 1.99%

Q20. Text Solution:

Topic: Bar Charts

Note:− Growth = Big value−Small value

Percentage growth = $\frac{Growth}{Small\ Value} \times 100$

Here 2014 is the base year, so the no. of years to take for 2020 is 6.

Annual Percentage growth

$= \frac{1}{No.\ of\ years\ to\ take} \times \frac{Growth}{Small\ Value} \times 100$

So, Annual percentage growth from 2014 to 2020

$= \frac{1}{6} \times \frac{18500-15000}{15000} \times 100$

= 3.89%

Q21. Text Solution:

Topic: Games & Tournaments

As a team scores 3 points for a win, Australia must have had 3 wins and 1 draw. As there are only 2 draws, Germany had one win and one draw and Netherlands had one win and 3 losses. As it is given that in the match between Australia and Pakistan, the goal difference is zero, it is a draw with 2 − 2 goals scored. Netherlands scored only 3 points, so it does not have any draws. Thus, the other match which is a draw is between Germany and India with 3−3 goals scored (given).

In the match between Netherland and Germany, the goal difference is 3, and the goals scored by Netherland and Germany are 4 & 1 respectively. As two teams scored 4 goals against Netherland and a total of 11 goals were scored against Netherland, the goals scored against Netherland must be 4, 4, 1, 2.

Netherland also lost the match in which two goals were scored against it, so it must have scored only 1 goal in that match and 3 in the

other matches where 4 goals were scored against it.

Match for which Netherland scored only 1 goal: 3 or 4 goals cannot be against Australia as Australia has a total of 4 goals scored against it by Germany, India, and Netherland and each should have scored at least 1 goal.

Thus, for Netherland

Netherland against other Country	Goals for	Goals against	Result
Australia	1	2	Lost from Australia
Germany	4	1	Won from Germany
Pakistan	3	4	Lost from Pakistan
India	3	4	Lost from India

Thus, goals against Australia are 3 in number by Germany & India.

For India, goals against it by Australia & Pakistan together are 7 and by India are 4. Hence India lost both of these matches.

4 goals cannot be scored against India by Pakistan as Pakistan has scored a total of 4 goals against Germany & India.

Thus, Pakistan scored 3 goals against India.

If goals scored for matches between Pakistan and India are 3 – 1, then goals scored between Pakistan and Germany are 1 – 4 (for/against) which is not possible as Germany has

scored a total of 4 goals against Australia and Pakistan.

Thus, goals scored (for/against):

India – Pakistan are 2–3

The following table shows the result and goal status of each match as follows: –

Match between	Goals scored	Match result
Australia vs. Germany	3–1	Won by Australia
Australia vs.	2–2	Draw
Pakistan		
Australia vs. India	4–2	Won by Australia
Australia vs. Netherland	2–1	Won by Australia
Germany vs. Pakistan	3–1	Won by Germany
Germany vs. India	3–3	Draw
Germany vs. Netherland	1–4	Won by Netherland
Pakistan vs. India	3–2	Won by Pakistan
Pakistan vs. Netherland	4–3	Won by Pakistan
India vs. Netherland	4–3	Won by India

Here is the statistics for each team as in the below table: –

Country	Won	Drawn	Lost	Goals for	Goals against	Total points
Australia	3	1	0	11	6	10
Germany	1	1	2	8	11	4
Pakistan	2	1	1	10	10	7
India	1	1	2	11	13	4
Netherland	1	0	3	11	11	3

Goal difference in the match between Germany & India is 3 – 3 = 0.

Q22. Text Solution:

Topic: Games & Tournaments

The following table shows the result and goal status of each match as follows: –

Match between	Goals scored	Match result
Australia vs. Germany	3–1	Won by Australia
Australia vs. Pakistan	2–2	Draw

Australia vs. India	4−2	Won by Australia
Australia vs. Netherland	2−1	Won by Australia
Germany vs. Pakistan	3−1	Won by Germany
Germany vs. India	3−3	Draw
Germany vs. Netherland	1−4	Won by Netherland
Pakistan vs. India	3−2	Won by Pakistan
Pakistan vs. Netherland	4−3	Won by Pakistan
India vs. Netherland	4−3	Won by India

Here is the statistics for each team as in the below table: −

Country	Won	Drawn	Lost	Goals for	Goals against	Total points
Australia	3	1	0	11	6	10
Germany	1	1	2	8	11	4
Pakistan	2	1	1	10	10	7
India	1	1	2	11	13	4
Netherland	1	0	3	11	11	3

Pakistan had a draw and win against Australia & India respectively. Thus, 1 + 3 = 4 points.

Q23. **Text Solution:**

Topic: Games & Tournaments

The following table shows the result and goal status of each match as follows: −

Match between	Goals scored	Match result
Australia vs. Germany	3−1	Won by Australia
Australia vs. Pakistan	2−2	Draw

Australia vs. India	4−2	Won by Australia
Australia vs. Netherland	2−1	Won by Australia
Germany vs. Pakistan	3−1	Won by Germany
Germany vs. India	3−3	Draw
Germany vs. Netherland	1−4	Won by Netherland
Pakistan vs. India	3−2	Won by Pakistan
Pakistan vs. Netherland	4−3	Won by Pakistan
India vs. Netherland	4−3	Won by India

Here is the statistics for each team as in the below table: −

Country	Won	Drawn	Lost	Goals for	Goals against	Total points
Australia	3	1	0	11	6	10
Germany	1	1	2	8	11	4
Pakistan	2	1	1	10	10	7
India	1	1	2	11	13	4
Netherland	1	0	3	11	11	3

Goals scored by India against Australia & Pakistan are 2 + 2 = 4.

Q24. **Text Solution:**

Topic: Games & Tournaments

The following table shows the result and goal status of each match as follows: −

Match between	Goals scored	Match result
Australia vs. Germany	3−1	Won by Australia
Australia vs. Pakistan	2−2	Draw

Australia vs. India	4−2	Won by Australia
Australia vs. Netherland	2−1	Won by Australia
Germany vs. Pakistan	3−1	Won by Germany
Germany vs. India	3−3	Draw
Germany vs. Netherland	1−4	Won by Netherland
Pakistan vs. India	3−2	Won by Pakistan
Pakistan vs. Netherland	4−3	Won by Pakistan
India vs. Netherland	4−3	Won by India

Here is the statistics for each team as in the below table: −

Country	Won	Drawn	Lost	Goals for	Goals against	Total points
Australia	3	1	0	11	6	10
Germany	1	1	2	8	11	4
Pakistan	2	1	1	10	10	7
India	1	1	2	11	13	4
Netherland	1	0	3	11	11	3

In the match between India and Australia, the total goal scored in the match is 4 + 2 = 6 and the goal difference is 4 − 2 = 2. Thus, 6, 2.

Q25. **Text Solution:**

Topic: Games & Tournaments

The following table shows the result and goal status of each match as follows: −

Match between	Goals scored	Match result
Australia vs. Germany	3−1	Won by Australia
Australia vs. Pakistan	2−2	Draw

Australia vs. India	4−2	Won by Australia
Australia vs. Netherland	2−1	Won by Australia
Germany vs. Pakistan	3−1	Won by Germany
Germany vs. India	3−3	Draw
Germany vs. Netherland	1−4	Won by Netherland
Pakistan vs. India	3−2	Won by Pakistan
Pakistan vs. Netherland	4−3	Won by Pakistan
India vs. Netherland	4−3	Won by India

Here is the statistics for each team as in the below table: −

Country	Won	Drawn	Lost	Goals for	Goals against	Total points
Australia	3	1	0	11	6	10
Germany	1	1	2	8	11	4
Pakistan	2	1	1	10	10	7
India	1	1	2	11	13	4
Netherland	1	0	3	11	11	3

The number of goals against Pakistan by Australia & Germany 2 + 3 = 5,

The number of points against Pakistan by Australia & Germany 1 + 3 = 4.

So, 5,4.

Q26. **Text Solution:**

Topic: Games & Tournaments

From the given condition you can find that when in consecutive rounds any gain in amount for an individual means there is a Win. Similarly, any reduction for an individual means that is a loss.

Considering B had won round 1, he would have ended up with 26 (will get 2 from each person) after round 1. But who else is the winner of round 2, B has to give ₹3 and would have ended up with ₹23 after round 2. But from the table, B has ₹25. So, B did not win round 1, but he won round 2.

C ended with ₹20 after round 3 i.e., he has no net gain or loss. The only possibility is that he won ₹6 in the first round and lost ₹3 each in round 2 and round 3.

So, C won the first round. He lost ₹3 in round 3, which means, in that round, the winner got his maiden win. So, the winner of round 3 is either A or D. But D has ₹22 which is possible only when D lost 3rd and 4th round and won the 5th round. We will discuss the same below as well.

Here C paid only ₹2 in round 4, which implies that it is won by the person who already had won one round, that is either A or B.

Considering A as the winner in Round 4 the amount for A, B, C, and D is 29, 20, 18, and 13 respectively. and considering B as the winner in Round 4 the amount for A, B, C, and D is 22, 27, 18, and 13 respectively. Hence A won round 4.

D has ₹22 after round 5.

So, he would not have won round 3 and Round 4. Hence A won round 3

After Round 4 the following table is the amount carried by four persons as follows,

Round	Amount after the end of the round (in ₹)									
Person	1	2	3	4	5	6	7	8	9	10
A	18	16	24	29						
B	18	25	22	20						
C	26	23	20	18			19			
D	18	16	14	13	22	20				

 D won round 5.

Therefore, all of A, B, and C lost ₹3 in round 5 and must have ended up with ₹26, ₹17, and ₹15 respectively after round 5.

Now, C's amount increased from ₹15 to ₹19 from round 5 to round 7. He must have won round 6 or round 7. As round 7 is won by B, C won round 6

and must have ended with ₹22 after round 6, which means he(C) gave ₹3 to B after round 7, From, this we can say that B won only two rounds (i.e., 2, 7) up to that point in time.

After Round 7 the following table is the amount carried by four persons as follows,

Round	Amount after the end of the round (in ₹)									
Person	1	2	3	4	5	6	7	8	9	10
A	18	16	24	29	26	23	20			
B	18	25	22	20	17	15	23			
C	26	23	20	18	15	22	19			
D	18	16	14	13	22	20	18			

C won round 8, B won round 9 and D won round 10.

This can be represented as follows.

Round	Amount after the end of the round (in ₹)									
Person	1	2	3	4	5	6	7	8	9	10
A	18	16	24	29	26	23	20	18	16	13
B	18	25	22	20	17	15	23	21	27	24
C	26	23	20	18	15	22	19	24	21	18
D	18	16	14	13	22	20	18	17	16	25

B won round 2.

Q27. **Text Solution:**

Topic: Games & Tournaments

Round	Amount after the end of the round (in ₹)									
Person	1	2	3	4	5	6	7	8	9	10
A	18	16	24	29	26	23	20	18	16	13
B	18	25	22	20	17	15	23	21	27	24
C	26	23	20	18	15	22	19	24	21	18
D	18	16	14	13	22	20	18	17	16	25

D gained the maximum amount.

Q28. **Text Solution:**

Topic: Games & Tournaments

Round	Amount after the end of the round (in ₹)									
Person	1	2	3	4	5	6	7	8	9	10
A	18	16	24	29	26	23	20	18	16	13
B	18	25	22	20	17	15	23	21	27	24
C	26	23	20	18	15	22	19	24	21	18
D	18	16	14	13	22	20	18	17	16	25

C won round 6.

Q29. **Text Solution:**

Topic: Games & Tournaments

Round	Amount after the end of the round (in ₹)									
Person	1	2	3	4	5	6	7	8	9	10
A	18	16	24	29	26	23	20	18	16	13
B	18	25	22	20	17	15	23	21	27	24
C	26	23	20	18	15	22	19	24	21	18
D	18	16	14	13	22	20	18	17	16	25

The total amount by all the persons is ₹80.

30% of the total amount is 30% of 80 = ₹24.

From the given condition, a person will be considered an Impact player when he occupies more than 30% which is more than ₹24.

You can get A as an Impact player after rounds 4 and 5.

You can get B as an Impact player after rounds 2 and 9.

You can get C as an Impact player after round 1.

You can get D as an Impact player after round 10.

So, both B and A get the Impact player award maximum (twice) number of times.

Q30. **Text Solution:**

Topic: Games & Tournaments

Round	Amount after the end of the round (in ₹)									
Person	1	2	3	4	5	6	7	8	9	10
A	18	16	24	29	26	23	20	18	16	13
B	18	25	22	20	17	15	23	21	27	24
C	26	23	20	18	15	22	19	24	21	18
D	18	16	14	13	22	20	18	17	16	25

The amount difference will be the maximum between any two persons when you take the maximum amount a person has with the Minimum amount a person has at any round of the Game.

i.e., after round 1: – C is having a maximum of ₹26 and A/B/D is having a minimum of ₹18. So, the difference is 26 – 18 = ₹8.

Similarly, after round 2: – B has a maximum of ₹25 and A/D has a minimum of ₹16. So, the difference is 25 – 16 = ₹9.

Similarly, after round 4: – A is having a maximum of ₹29 and D is having a minimum of ₹13. So, the difference is 29 – 13 = ₹16 which is the maximum difference between any two people in any point of the game.