CATapult Courseware

Module 5

Practice Exercise Solutions

CATapult Courseware **Module 5**

Practice Exercise Solutions

Published by IMS Learning Resources Pvt. Ltd. in the Year 2020

Registered Office: 6th Floor, NCL Building, 'E' Block, Near Bandra Family Court,
Bandra Kurla Complex (BKC), Bandra (E), Mumbai - 400051
Tel.: +91 22 66170000
Toll Free: 1800-1234-467
CIN : U80220MH1999PTC121823
E-mail : support@imsindia.com Website: www.imsindia.com

CATapult Courseware **Module 5**

Practice Exercise Solutions

INDEX

DECISION MAKING

LOGICAL REASONING

DATA SUFFICIENCY

VERBAL ABILITY

VISUAL REASONING

Decision Making

DM-5.1 DECISION MAKING–1

PRACTICE EXERCISE - 1

1. From the options given above, the best combinations would be options (4) and (5). Option (1) is impractical as Susan shouldn't bypass her bosses and go to the MD directly. The MD, as well as her bosses, will frown upon this. Options (2) and (3) don't provide any immediate solution to Susan's problem, and can thus be eliminated. Hence, (4).

2. Option (1) is very extreme and not expected from qualified people. Option (3) can be eliminated on the grounds that on the basis of one exception made by the management, for a deserving candidate, 'all' other employees would not 'demand' a change in the company policies. The case clearly states that Sahil is the top performer in the sales department; if he gets promoted, it would be because of his ability to perform and not because he is unduly favoured by the boss. This eliminates option (4). Option (5) can be eliminated as Sahil has been the top performer, beating MBAs to get there. Option (2) is the best choice. Employees like Sahil might be motivated to do better as they would now feel that they could also get promoted if they performed well. Hence, (2).

3. We already know that Sahil is the top performer in the sales department, so he is probably doing more than his peers to get the outstanding results. Thus, giving him more responsibilities may not be enough to keep him motivated. Option (4) would also not work for the same reason. It would be easier for Sahil to maintain his motivation towards work if he learns something new, hence the option of assigning him a new role may convince him to stay with the company. Along with this, taking up a management course would improve his prospects with the company. Nomination for the 'Employee of the year award' would not work as it is just a nomination – he may or may not win. If he does not, it would further demotivate him. Hence, (1).

4. Vinod would not have the authority to do what is suggestedby option (2). His request may not even be entertained by such senior people. Options (3) and (4) both are unethical. Option (1) may work against Vinod's interest, by endangering his job, if Mr.Sahu is guilty. Even if Mr.Sahu isn't guilty, the fact that Vinod bypassed a lot of his seniors will be held against him. The safest, most workable option that is ethical is (5). Hence, (5).

5. If the employees of the company duly follow the process of disclosing a conflict of interest while selecting vendors, then there is no reason why a company should not do business with an employee's relative. Hence, option (1) can be eliminated. Frequently changing the accounts handled by the employees would make work less efficient, affecting the overall functioning of the company. Hence, option (2) is also not advisable. Trivial tasks like approving bills cannot be given to the Chairman of the company. Hence, option (3) can be eliminated. Option (4) is the best choice as it is practical to implement and minimizes the scope for any malpractices. Option (5) is impractical and can be eliminated. Hence, (4).

6. Although the case mentions that Suresh had been passing the inflated bills and also directed Vinod to do the same, it is not clear whether Suresh was acting of his own accord or under someone's pressure. Hence option (1) is eliminated. The involvement of Mr. Ramesh Sahu cannot be ascertained from the information available in the case. Suresh may have been lying. This eliminates options (3) and (4). Only M/s Tolaram cannot be charged of being guilty in this case as he was supported by Suresh who was clearing the inflated bills. Hence, (5).

7. Options (1) and (2) are means to an end for Meenal. The end is 'increasing revenues from the room service business', which makes option (5) the correct answer. Option (3) can be ruled out since the passage does not mention a decline in sales of the resort's restaurant, but an increase in sales of competitors' pizza. Option (4) is ruled out since the passage does not hint at a decline in profitability. Option (5) is the most critical from Meenal's perspective, since her primary concern is improving revenues from room service. Hence, (5).

8. Option (1) is ruled out, since pizza brands would logically market their own pizzas rather than target a specific South Indian restaurant. Option (2) is not correct since the passage states that Meenal succeeded in bringing the taste of the restaurant's pizza on par with its competitors. Option (3), even if true, would not affect sales since whoever would

want a pizza would order it irrespective of where it is mentioned in the menu. Option (5) is ruled out, since the pizza delivered from the resort's own restaurant is likely to be hotter that those delivered by its competitors, who are farther away. Option (4) seems the most likely reason, since the resort's traditional South Indian restaurant may not be able to prepare as many varieties of pizzas that dedicated pizza delivery companies can. Hence, (4).

9. Option (1), though the most practical and legal alternative, would not be ethical, since it would be implemented assuming that the guests would not read the fine print. If the guests read it, it would defeat the purpose. Option (2) would not achieve the objective of separating the image of 'Authentic Italian Pizza'from the resort's restaurant. Option (4) is not ethical, since even accepting Meenal's proposal as an interim measure would amount to cheating customers for that period. Option (5) would be perceived as a negative move by the consumers and it won't serve the purpose of what Meenal and Ravi are trying to achieve– a separate identity for the resort's pizza. Option (3) serves the purpose of establishing a separate 'Authentic Italian Pizza' brand and is the most ethical way of doing so. Hence, (3).

10. From the case we know that Meera considers downsizing to be a form of deception. Hence the argument presented to her should counter her beliefs. The only argument that does this is option (4). Option (1) uses the logic that if everyone does something unethical, then it ceases to remain unethical, which is wrong. The customer not noticing the change does not imply that a company is absolved of its responsibility to inform him. Hence, option (2) can also be eliminated. Option (5) can also be eliminated on the grounds that consumers may be okay with a difference of a few milligrams of grams, but not with a substantial difference of 4 grams. Option (3) advocates an unethical measure. Also, there is no certainty that if Meera goes along with downsizing she would be able to maintain the profit levels. Hence, (4).

11. From the case we know that Meera's main responsibility is to maintain profit levels, thus maintaining the price and incurring a short term loss is not ideal. Hence, option (1) is eliminated. Waiting for the competitors' reaction and then taking a decision, would entail taking no action for a certain time period, and till such time she would incur a loss, which would be detrimental to her position. Also, irrespective of what the competitors decide, Meera will still have to decide what ethical alternative she can take. Thus, option (4) is just a postponement of decision-making. Options (2), (3) and (5) are all plausible solutions to prevent a decline in profits. But, since the case already mentions that Meera feels that the price difference would get noticed, option (2) shouldn't be chosen. Also, options (2) and (5) entail more substantial expenses than option (3). The cheapest option is to make a few changes to the pack. In this way, Meera's concern about regular customers not checking the specifications of the pack, on subsequent purchases, will also be addressed. Hence, (3).

12. Since the case does not give any indication of the target consumers of Peelo Potato Chips, option (1), which specifically targets the kids and narrows the scope of the advertisement campaign, is not the best option. Options (2) and (4) are both one time activities and would not create a lasting impression in the minds of the consumers. Hence both these options can be eliminated. Option (5) presents the brand as a snack that can be had only at game time. Option (3) would have a far wider reach and as Meera is specifically concerned about losing out to Peelo's competitors, showing Peelo Potato Chips as being better than others would have the greatest impact. Hence, (3).

13. The case clearly states that no concrete evidence has been found against any of the employees. Thus taking a drastic step like moving them all from the display section would amount to showing suspicion and would affect the morale of the innocent employees. Hence option (2) is not advisable. There is no point in putting Tarun under a lie detection test again, as he cannot be dismissed solely on the basis of failing the lie detection test. Option (4) is illegal; simply on the basis of suspicion a residence search cannot be ordered. Option (1) is very impractical. An employee cannot afford to neglect his primary duties to keep an eye on someone. Option (5) is the best option as it would enable keeping an eye on everyone, without tying up any employee's time. It would also enable easy identification of the guilty party in case such incidents recur. Hence, (5).

14. Since Tarun has not done anything wrong, he shouldn't suffer by resigning his job. Option (2) sends out the message that he considers himself incapable of handling expensive material while not doing anything to make the management believe his innocence. Since the management is suspecting him there is little scope for him to be given more responsibilities till the matter clears up. Also, his asking for more responsibilities seems apologetic. This eliminates option (4). Option (5) is a very vague measure as this issue may not get sorted out. Doing so will also make him seem emotionally weak. The best thing to do would be to continue working as if nothing has happened. This would project him as being guilt-free and confident. Hence, (3).

15. There is no evidence to suggest that external theft has been ruled out without a thorough investigation or that allocating new employees to the display section is causing problems. Thus, practices B and E need not be implemented. The case doesn't suggest that Mitesh or his team has been doing a poor job otherwise. They shouldn't be replaced due to one instance. Thus, practice A shouldn't be carried out. The case brought to light the fact that a thorough examination of Tarun's documents had not been done at the time of employment. Practice C would take care of this problem and also reveal if any new hire has made any prior offences. If inventory is taken at the time of opening and closing, it would help in quickly discovering that an item is missing and from whose display section it is missing. Since the lie detector test is clearly serving no definite purpose, there is no point in continuing with it and bearing an additional expense. Hence, (5).

16. Kavita is likely to retire soon and thus, will not be able to form a long-term association with City College. Bijendra will be unable to give extra time to the weak students. Appointing Viraj will lead to a conflict of interest as many students of the college attend his coaching classes too. He may push others to join his classes or he may favour those who have. Also, because of his coaching classes, he may not be able to take out adequate time to help weak students. Between Rupesh and Seema, Seema is a better choice as she is more qualified and experienced. Note: the case does not place any restrictions on the salary that can be given to the selected candidate. Hence, (1).

17. From the case, we only know that the trustees prefer Bijendra. There is no information given about any other selection criteria that the trustees may have. Thus, we cannot infer which candidate will most likely be rejected by the trustees. Hence, (5).

18. This statement is definitely false. The senior professors want someone who can devote extra time to the weak students. So, Bijendra would be their least preferred candidate. Hence, (3).

19. The case does not give information about how much time the candidates are willing to devote to the weak students. This is the only criterion laid down by the professors. The information alone is not sufficient to decide whether or not he would be the next most preferred choice of the senior professors. Hence, (5).

20. Bijendra is not the first choice of the senior professors, the Principal or the selection committee. However, in case the preferred candidates reject City College's offer, the college may be forced to hire Bijendra. Thus, since the 'hiring' is contingent on factors besides preferences of the selectors too, we cannot say that he will definitely not be hired. Hence, (2).

21. This statement is definitely false. The least preferred candidate of the senior professors would be Bijendra and of the selection committee would be Kavita. Hence, (3).

22. Since Neelima is more qualified and younger than Viraj (and hence likely to remain with the college for longer), this statement is definitely true. Hence, (1).

PRACTICE EXERCISE - 2

1. Option (1) is unlikely, since the regional head is generally empowered to look into branch level issues. Option (2) is incorrect, since it would not be relevant for Avinash whether Mr. Nadkarni is a long serving employee or not. Option (4) is not correct, since Avinash feels that what Nadkarni did was wrong as he had no authority to do so, not because his intentions were wrong. Option (5) is too general and not necessarily true. Option (3) is the detail that Avinash overlooked while presenting his argument about who is authorized, by the company, to open new accounts. The case clearly mentions that Mr. Nadkarni only' handled' a customer query, and not that he 'opened a new account'. Hence, (3).

2. The entire incident is too petty to be escalated, especially as Avinash doesn't mention doing anything on his part to resolve the issue. Further, there has been no violation of company policy and Avinash seems to be the only person who has taken this to his heart. A Regional Head should not waste his valuable time trying to sort out petty problems between employees. Option (3) is the best option. Options (1) and (2) imply that Nadkarni did something wrong, which cannot be definitely inferred from Avinash's letter. There is no reason for the Regional Head to pacify his subordinate. Option (5) is too extreme a step. The company policy and roles have already been circulated among employees. Hence, (3).

3. Point D can be immediately negated as she hired two part-time employees to assist her with the distribution of the product and to collect repeat orders. Considering that she had managed to sell fifty thousand units in the first year, without any help, two additional resources should have been enough to help sell an additional twenty-five thousand units. Point E can also be eliminated as the case clearly states that she expanded to other localities only after she got good reviews from her initial customers. Point B can be eliminated as the case mentions her plan to streamline production and sales. Point A can be a valid reason for the dip in profitability. Without a yearly contract in place, she would have to buy the raw materials at rates prevailing at the time of purchase (which could be higher)and she would lose the bargaining power she would have had had she negotiated for the yearly quantity at one time. Point C can be a plausible reason for the stagnant sales. All customers may not have been willing to buy such a large quantity (5 litres) of liquid dishwashing soap, especially considering that Scrub-clean wasn't an established brand. She should have offered trial packs to encourage the trial of her product. Hence, (1).

4. From the question we know that Anamika wants to acquire new markets and diversify Scrub-clean's buyer base. Although a new variant might help in increasing sales, there is no reason to believe that this would lead to acquiring new markets or diversifying her buyer base. Only 'looking into' expansion will not address any of her goals. She would have to take concrete measures to start exporting Scrub-clean. This would take a lot of time. Option (3) addresses both the goals and can be achieved in a shorter time frame. Hence this is the best option. Options (4) and (5) are advertising strategies, the results of which may or may not be favourable. Hence, (3).

5. We know that the A.P. Ltd only had two employees. This can hardly be called an aggressive sales team. Also, we do not have information about their sales tactics. For this reason, option (4) can be eliminated. Selling in the immediate or nearby localities does not translate to having a large distribution network. This eliminates option (1). The case does not mention anything about the pricing of Scrub-clean or its competitors. This eliminates (2). Between options (3) and (5), option (3) is a better choice as this feedback has been explicitly given to Anamika and is the reason behind her expansion plans. Hence, (3).

6. Option (2) is unlikely since the players would not want to risk being dropped from the team altogether, even if they have been overlooked for captaincy. Option (3) is unlikely, since not all players have been mentioned as being unhappy with Abhishek's selection as the captain. Option (4) would not be an unfortunate repercussion to the appointment of Abhishek, and so is ruled out. Option (5) is very unlikely as a single difference in opinion wouldn't cause bitter conflict, especially considering that the team is made up of professionals. Option (1) is the most likely unfortunate repercussion, since a drop in morale would lead to a drop in performance levels, and poor performance of the unhappy players would affect the team's performance as a whole. Hence, (1).

7. Option (1) is not feasible as there is already unrest due to Abhishek's appointment as the ODI captain. Appointing him as the Test captain would only add to the problems. Options (2) and (5) are not solutions to the problem at hand. The problem has to do with Akshay's captaincy, not with his performance as the opening bowler or in the ODI and T10 formats. Options (2) and (5) could be counter-productive, since taking away responsibilities from Akshay could lead to adrop in his morale. Option (4) is not a solution, since the problem is with the captain, not with the coach of the team. Option (3) is the best approach, since the Board would repose its faith in Akshay (by persisting with him), and also provide him help in the form of a mentor. Also, three months doesn't seem to be

a long enough period to judge his ability to lead the side in Test cricket. So, he should be given another chance. Hence, (3).

8. Out of A and E, one step is redundant. E should be preferred as the review committee has already investigated the problems faced by the Indian cricket teams. So, options (1), (2) and (4) get eliminated. Step E is not practical, since one can't and shouldn't force players, who want to retire or need to retire, to continue playing. Even if they agree to play due to the pressure, it may be detrimental for the team as they may underperform. Hence, option (5) gets eliminated. Steps B and C would improve player fitness and enable preparation of international standard pitches respectively. Hence, (3).

9. The reason stated for poor performance of the players is 'burn-out' and 'low fitness levels'. Only options (1) and (4) relate to this. Of these, (1) is more appropriate as it will result in reduced burn-out. Option (4) takes care of only one aspect of fitness i.e. diet. Option (3) is not a solution, since we cannot assume that more endorsements lead to poor performance. Option (5) is not correct, since lack of talent is not the problem facing the team. Option (2) addresses the team's problem, not the problem of poor individual performances. Hence, (1).

10. Anil wants a fuel-efficient car. Also, his price range is Rs. 5-7 lakhs. The case also implies that he would want to save money on a daily basis. His first preference would be between Value Hatch and Eco sport, both of which have the highest mileage. Even though Value Hatch is the cheaper of the two, he would prefer Eco Sport, since it would lead to more savings in the long run (as CNG is cheaper than petrol). Hence, options (1), (2) and (4) are eliminated. Between Off-Roader and Luxe Hatch, Anil would prefer the latter as it is cheaper. Note: there is no reason to believe that diesel is cheaper than petrol. Hence, (3).

11. Option (1) would not be enough to convince Anjali, since the higher version of Eco sport would still have less leg room, and no driving aids. Option (2) seems to be the best. Anil should be happy with it as the car's mileage is good and it runs on a cheaper fuel. Anjali would find it better than all other options as it is a medium-sized car with greater leg room and the higher-end version has luxury features and driving aids. Option (3) is not bringing anything new to the table. Anjali has already chosen Luxe Hatch over Highway Rider. The argument of savings will not work on Anjali as this is not one of the criteria she is considering. Option (4) would not appeal to Anjali as the car is small and doesn't have many luxury features or driving aids. Option (5) may work for Anjali, but it wouldn't work for Anil as his problems with the car (low mileage and expensive fuel) still remain. Hence, (2).

12. As Rohan wants a big car and Anil's parents want a lot of leg room (and that the family travel together), their preferences are likely to be most similar. Hence, (4).

13. Value Hatch and Eco Sport are small cars and will not offer a lot of room for his parents to stretch their legs. Also, the whole family will not be able to travel together in them. Anil's third preference: Highway Rider allows the whole family to travel together and provides ample leg room. Hence, (3).

DM-5.2 | DECISION MAKING–2

PRACTICE EXERCISE

Answers to questions 1 to 5:

The table below gives all the possible routes from X to Y and also the time taken along these routes, in minutes (excluding the stopover time):

Route No.	Route	Time(in minutes)
1	X-E-H-A-Y	6 + 3 + 4 + 10 = 23
2	X-E-H-D-G-C-Y	6 + 3 + 4 + 3 + 2 + 8 = 26
3	X-E-H-B-D-G-C-Y	6 + 3 + 3 + 1 + 3 + 2 + 8 = 26
4	X-E-H-B-G-C-Y	6 + 3 + 3 + 4 + 2 + 8 = 26
5	X-F-G-C-Y	8 + 6 + 2 + 8 = 24

1. The teams travelling along routes 1, 2, 3, 4 and 5 would have taken 29, 36, 38, 36 and 30 minutes respectively. Thus, the required difference is 38 – 29 = 9 minutes. Hence, (3).

2. Since the stopover time at C, E, G and H is 2 minutes each for the teams travelling along the routes 2, 3 and 4 to reach Y at the same time, the stopover time at B and D should be zero each. Then the teams travelling along these routes will reach at Y in 34 minutes. Also, the ACC should decide the stopover time at A and F to be 7 minutes and 6 minutes respectively so that all the teams reach Y in 34 minutes. Hence, (1).

3. From the answer to the previous question, we get option (4) as the correct one. Hence, (4).

4. From the data given, we know that exactly three teams reach Y at the same time.
Since, in all the options, the stopover time at B and D is 1 minute each, we get that the teams travelling along the routes 2 and 4 will reach Y at the same time and the third route must be one out of route 1 and route 5.
For exactly three teams to reach Y at the same time, routes 1 and 5 should not take the same amount of the time. Teams travelling along routes 1 and 5 will take same time to reachY, if E-H-A + 1 = F-G-C.
Only in option (4) is E-H-A + 1 = F-G-C, which implies that exactly four teams reach Y at the same time. This is a contradiction. Hence, (4).

5. Reducing the travel time along B-G to 3 minutes reduces the total time along route 4 to 25 minutes. Now, taking the stopover time at A, B, C, D, E, F, G and H as 7, 2, 0, 1, 1, 5, 1 and 1 respectively, the teams travelling along routes 1, 2, 3, 4 and 5 will reach Y in 32, 30, 32, 30 and 30 minutes respectively.
Hence, (3).
Alternatively,
Using the relation between B and D, as in question 34, and due to reduced travel time along route 4, it will take the same time to reach Y, travelling along routes 2 and 4. This is possible with the stopover timing given in the question. Also, in this case, the total travel time along routes 2 and 4 is 30 minutes. Thus, we can say that the correct option is among options [3] and [4]. Check for routes 1 and 5 to come to an answer.

Answers to questions 6 to 9:

6. The 52-week Low for Arcenal as given in the table is 875. Since the Quarter is a period within the 52-week period, the Quarterly low cannot be lower than the 52 week low. Hence, the answer has to be equal to or greater than 875. Only option (4) satisfies the condition 875. Hence, (4).

7. Sharecropper's article clearly states the four parameters that must be met for a company to be long-term investment. Instead of checking each of the companies mentioned in the answer options for all four parameters it is better to check each parameter one by one.
I. Company P/E > 1.3 × Sectoral P/E
II. Company EPS > 1.3 × Sectoral EPS
III. Sectoral 52 week High-Low Fluctuation should be between 20% to 30%
IV. The difference between the Company 52 week High-Low Fluctuation $\left(\frac{H-L}{H}\right)$ and the Sectoral 52 week High-Low Fluctuation should be +5 percentage points.
All four companies meet the first parameter, but only Dipro meets the second parameter.
Hence, all the other companies cannot be long-term investments.

Company	Sector	P/E	EPS
HPLC	Oil & Gas	23.8	32.4
Tortoise	Oil & Gas	25.5	33.75
Dipro	IT	26	51.2
Nityam	IT	28	38.4

Sector	1.3 × P/E	1.3 × EPS
Oil & Gas	22.1	35.1
IT	26	41.6

Since one of the answer options is none of these it cannot be assumed that Dipro is a long-term

investment. It has to be checked whether Dipro meets the last two parameters.

The $\left(\frac{H-L}{H}\right)$ percentage of IT is 25.5 and that of Dipro is 27.27. Hence, (3).

8. PBN Berlinas, Sector: Bankex
P/E Ratio: 19.5, EPS: 30
52-Week High: 600, 52-Week Low: 420
Quarterly difference between High and Low was always greater than 50
Bankex: P/E = 15, EPS =24
The company cannot be a long-term investment since its EPS is not greater than or equal to 1.3 times the EPS of the Bankex sector (EPS: 24, 1.3 × 24 = 31.2).
The price of PBN Berlinas is 585 (P/E × EPS) is greater than the average of its 52 week High and Low (510) and hence it cannot be a short-term investment.
We need to check whether it can be medium term -term investment.
The P/E and EPS of PBN Berlinas are greater than 1.2 times the P/E and EPS of the Bankex Sector respectively. For a stock to be a medium term investment the Sectoral Quarterly fluctuation should be between 10% and 15%. The Bankex sector has a Quarterly fluctuation of 12.35%, which satisfies this condition.
The next condition is that the Company Quarterly fluctuation should not be beyond + 5% of the Sectoral Quarterly fluctuation, i.e. in this case it should be between 7.35 to 17.35%.
The Quarterly High cannot be greater than the 52-week High, which is 600. If this is the Quarterly High and the High-Low difference is 50 then the fluctuation is 50/600 = 8.33%. For any Quarterly High lower than 600 and High low difference between 50 and 80 the fluctuation will definitely be greater than 8.33% hence the lower limit of 7.35% is met.
The Quarterly Low cannot be lower than the 52-week Low which is 420. If this is the Quarterly Low and the High-Low difference is 80, then the fluctuation is 80/500, 16. For all values of Quarterly [High–Low] the fluctuation will be within 8.33 and 16. Hence, PBN Berlinas can be a medium-term investment. Hence, (3).

9. According to Sharecropper any price that yields a profit of at least 30% over the buying price is a good price to sell.
We do not know at what price the Sharecropper has bought these shares. But, we do know that the Sharecropper has bought the shares during the last one year. So, the maximum price at which he might have bought the shares is the 52-week High.
So, if 330 is equal to or greater than 30% of the 52-Week High then the shares can definitely be sold. 330 is more than the 30% of the 52-Week High only in the case of Dalliance. Hence, (1).

Answers to questions 10 to 14:

10. As the first and last movies, they watched were English we get the following possibilities for the sequence of the movies watched:
Possibility 1:
12 noon (E), 2 p.m. (H), 5 p.m. (H), 8 p.m. (E), 10 p.m. (E)
Possibility 2:
12 noon (E), 2 p.m. (H), 5 p.m. (E), 7 p.m. (H), 10 p.m. (E)
Possibility 3:
12 noon (E), 2 p.m. (E), 4 p.m. (H), 7 p.m. (H), 10 p.m. (E)
To maximise the review ratings(stars), the movies that should be watched in each of the above possibilities are as follows:
Possibility 1:
12 noon (E), 2 p.m.(H), 5 p.m.(H), 8 p.m.(E), 10 p.m.(E)
12 noon (E) Ratatouille (4 stars)
2 p.m. (H) Kabhi Khushi Kabhi Gam (3 stars)
5 p.m. (H) Sawariya (3.5 stars)
8 p.m. (E) Matrix 4 (4.5 stars)
10 p.m. (E) Shutter (Thailand) (4.5 stars) Total number of stars = 19.5
Possibility 2:
12 noon (E), 2 p.m.(H), 5 p.m.(E), 7 p.m.(H), 10 p.m.(E)
12 noon (E) Underdog / French Kiss (3 stars)
2 p.m. (H) Kabhi Khushi Kabhi Gam (3 stars)
5 p.m. (E) Ratatouille (4 stars)
7 p.m. (H) Om Shanti Om (4.5 stars)
10 p.m. (E) Shutter (Thailand) (4.5 stars)
Total number of stars = 19
Possibility 3:
12 noon(E), 2 p.m.(E), 4 p.m.(H), 7 p.m.(H), 10 p.m.(E)
12 noon (E) Ratatouille (4 stars)
2 p.m. (E) High School Musical 2 (2.5 stars)
4 p.m. (H) Golmaal (4 stars)
7 p.m. (H) Om Shanti Om (4.5 stars)
10 p.m. (E) Shutter (Thailand) (4.5 stars)
Total number of stars = 19.5
Thus, we see that both possibilities 1 and 3 are equally good. Also, Ratatouille and Shutter are the only two movies that are common to both possibilities and hence will definitely be in their final list. Both the movies are not in the options. Hence, (5).

11. Based on the given conditions, Toby will watch all the 3 romantic movies, viz. French Kiss (12 noon – 2 p.m.), Saawariya (5 p.m. – 8 p.m.) and Om Shanti Om (9 p.m.).
As Tanaaz needs to have lunch at 2 p.m., the only slot available to Toby is 3 p.m – 5 p.m. The only movie that he can manage to watch in this 2 hour slot is the English movie 'Kung-Fu Hustle'.
Hence, (2).

12. Based on the given conditions, Puneet can see a maximum of 4 movies in the Children's genre in the 12 noon to 9 p.m. slot (as the Hindi movie he watches has to be in the 9 p.m. slot). This means that we have the following possibilities:
Possibility 1: Underdog, High School Musical 2, Ratatouille, High School Musical 2
Possibility 2: Ratatouille, High School Musical 2, Ratatouille, High School Musical 2
Hence, (3).

13. Grenada needs to have all the different genres in her list.
The only Romantic movie is at 12 noon. Also, all the Horror movies are at 10 p.m.
Evaluating the options, we have the following possibilities for the remaining genres:
1. Action (Kung-fu Hustle) at 3 p.m. followed by Comedy (Scary Movie 5) at 6 p.m. followed by Children (Underdog) at 8 p.m. Hence, options (1), (3) and (4) are ruled out.
2. Comedy (Scary Movie 5) at 2 p.m. followed by Children (Ratatouille) at 5 p.m followed by Action (Matrix 4 – The New Beginning) at 7 p.m.. Hence, option (2) is ruled out.

Hence, (5).
(Note: These are not the only two possibilities. They have been listed in order to eliminate answer options)

14. Based on the given conditions, we have the following sequence:
Screen 4: Underdog(12 noon), Scary movie 5 (2 p.m.), Dhoom 2 (4 p.m.)
Screen 5: Matrix 4 – The New beginning (8 p.m.), Saw 3 (10 p.m.)
Hence, (2).

Answers to questions 15 to 17:

15. Total number of seats of the Left Front = 81
CPI = 29
CPI (M) + CPI (M-L) = 52
Given that the CPI has the maximum number of seats in the Left Front, the possible number of seats for CPI (M) and CPI (M-L) are 28 and 24 OR 24 and 28 OR 27 and 25 OR 25 and 27 OR 26 and 26 respectively.
Given that the BSP has the maximum number of seats in the UPA (Regional), the possible number of seats for DMK, RJD and TRS are 20, 20 and 19, not necessarily in that order.
Since it is stated that no two parties have the same number of seats except one pair that pair has to be out of DMK, RJD and TRS.
Therefore, CPI (M-L) and CPI (M) cannot have 26 seats each. Hence, (4).

16. Total number of seats of UPA (Regional) = 80
BSP = 21, therefore, DMK + RJD + TRS = 59
From the answer to the previous question, the possible number of seats for DMK, RJD and TRS are 20, 20 and 19, not necessarily in that order.
Total number of seats of NDA (Regional) = 73
BJD = 22, therefore, SS + SP + TDP = 51
Given that the BJD has the maximum number of seats in the NDA (Regional) and no two parties, other than 2 out of DMK, RJD and TRS, can have the same number of seats the next highest number of seats in the NDA (Regional) cannot be:
1. 21, since BSP has 21 seats
2. 20, since 2 of DMK RJD and TRS have 20 seats
3. 19, since 1 out of DMK RJD and TRS has 19 seats.

So the only possible break-up of the 51 seats between SS, SP and TDP is 18, 17 and 16, not necessarily in that order.
Based on the pie chart, the table and the explanation above, the possible number of seats each party can have is as follows:

INC	140
NCP	15
BJP	101
JD-U	30
CPI	29
CPI(M), CPI-M(L)	24,28 or 25, 27 (in some order)
BSP	21
RJD, TRS, DMK	19, 20, 20 (in some order)
BJD	22
SS, SP, TDP	16, 17, 18 (in some order)
Ind.	20

Option (1) is not definitely true. If the RJD has 20 seats then TRS can have either 20 or 19 seats.
Option (2) is definitely true. If the DMK has 19 seats then both the TRS and RJD have 20 seats each.
Option (3) is not definitely true. If the SS has 18 seats then SP can have either 17 or 16 seats.
Hence, (2).

17. Currently the UPA government has 316 seats in the Parliament.

UPA	155
UPA (Regional)	80
Left Front	81
Total	316

If the Left Front withdraws its support, then it will need 36 seats to get a simple majority (271 seats). The sum of any 2 out of SS, SP and TDP is not greater than 35. Hence options 1, 2 and 3 are incorrect. The least number of seats the TDP can have is 16. Therefore the support of the TDP and the 20 Independents can keep the UPA in power. Hence, (4).

Logical Reasoning

LR-5.1 | LOGICAL REASONING–1

PRACTICE EXERCISE-1

1. Let A, B, C,..., Z be represented by the numbers 1, 2, 3,..., 26 respectively.

	(16)	(5)	(14)	⇒	(7)	(5)	(5)
Then	P	E	N	⇒	G	E	E
and	(13)	(15)	(14)	(11)	(5)	(25)	
	M	O	N	K	E	Y	
	↓	↓	↓	↓	↓	↓	
	(4)	(6)	(5)	(2)	(5)	(7)	
	D	F	E	B	E	G	
Hence,	(13)	(1)	(7)	(7)	(25)		
	M	A	G	G	Y		
	↓	↓	↓	↓	↓		
	(4)	(1)	(7)	(7)	(7)		
	D	A	G	G	G		

as single digit numbers do not change while for double-digit numbers, the digits are added. Hence, (4).

2. The first two letters of the word are replaced by their preceeding letter in the English alphabet by their succeeding letters, the next by the preceeding ones and so on.
Thus, B E T T E R ⇒ A D U U D Q. Hence, (2).

3. If the letters are numbered (A ≡ 1 B ≡ 2,...,Z ≡ 26) we see that the corresponding numbers of g, e and m are increased by 10 and then decoded to their respective letters.

g	e	m	q	o	w	
(7)	(5)	(13)	(17)	(15)	(23)	

Thus

b	i	k	e		l	s	u	o	
(2)	(9)	(11)	(5)	⇒	(12)	(19)	(21)	(15)	

Hence, (3).

4. Each letter is shifted by one place

M	Y	S	T	E	R	Y
+	+	+	+	+	+	+
1	1	1	1	1	1	1
N	Z	T	U	FS	Z	

B	I	O	G	R	A	P	H	Y
+	+	+	+	+	+	+	+	+
1	1	1	1	1	1	1	1	1
C	J	P	H	S	B	Q	I	Z

Hence, (3).

5. First digit ≡ 5 – 2 = 3. Hence, (1).

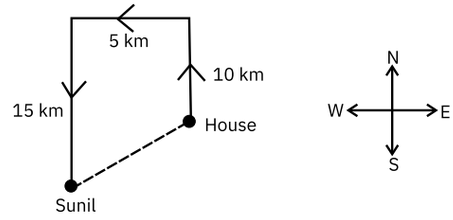
6. First digit ≡ 7 – 2 = 5
Second digit ≡ |5 – 2| = 3 or 5 + 2 = 7
3 < 7
∴ Second digit ≡ 3
∴ The required codes is 5378. Hence, (5).

7. I. In the code of 863543,
First digit 10 – 1 = 9
Second digit ≡ |3 – 5| = 2 or 3 + 5 = 8
2 < 8
∴ Second digit ≡ 2
∴ The Codes is 9234
II. In the code of 973534,
First digit ≡ 9 (non-even, non-prime)
Second digit ≡ |3 – 5| = 2 or 3 + 5 = 8
2 < 8
∴ Second digit ≡ 2
∴ The Code is 9234
III. In the code of 763443,
First digit 11 – 2 = 9
Second digit |3 – 4| = 1 or 3 + 4 = 7
1 < 7
∴ Second digit ≡ 1
∴ The codes is 9134
∴ I and II can have 9234 as their codes.
Hence, (3).

8. In the code of 654892,
First digit ≡ 8 – 1 = 7
Second digit ≡ |4 – 8| = 4 or 4 + 8 = 12 ≡ 3
3 < 4
∴ Second digit ≡ 3
∴ Possible codes are 7329
Required difference = 4. Hence, (3).

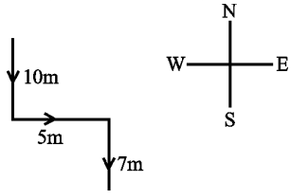
9. In the code of 743210,
First digit ≡ 11 – 2 = 9
In the code of 843210,
First digit = 10 – 1 = 9
Since the rest of the digits of the codes will be the same, required difference = 0. Hence, (4).

10. We can draw Sunil's path as follows.



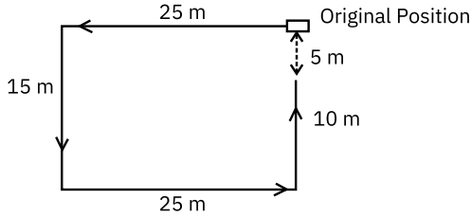
Thus, Sunil's house is to the North-East. Hence, (1).

11. The path travelled by Sheela is as follows:



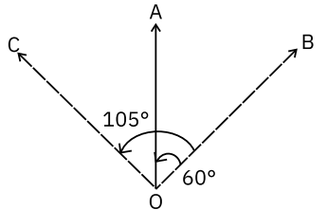
Clearly, Sheela is facing the South. Hence, (2).

12.



He is 5 metres away from his original position. Hence, (3).

13.



Clearly, the man faces in the direction OA. On moving 60° clockwise, he faces in the direction OB. On further moving 105o anticlockwise, he faces in the direction OC. Hence, the person is finally in Northwest direction. Hence, (2).

14. The new series is:
! K ? > 0 Z D 6 / S 8 B # 5 9 @ M 1 U L
The fifth element from the right is @ and the seventh element to the left of it is /. Hence, (4).

15. The new series is:
B 5 @ 1 L K > Z 6 S 8 # 9 M U ! ? 0 D /
1, 6, 9 and 0 precede L, S, M and D respectively, i.e., 4. Hence, (2).

16. The new series is:
B M U L K Z D S 8 5 9 1 0 6 # @ ! ? > /
The fourth element from the right is !. The element 12 places to the left of ! is K and the element 2 places to its right is D. Hence, (3).

17. B 8 5 # @ 9 1 M L U K ! > ? Z 0 6 D S / None of the symbols are preceded and succeeded by numbers. Hence, (1).

18. (Number × 2) + 1, 2, 3, 4, 5, etc. is next number.
(7 × 2) + 1 = 15, (15 × 2) + 2 = 32,
(32 × 2) + 3 = 67, (67 × 2) + 4 = 138, etc. Hence, (2).

19. The sum of two terms is next term.
The missing number = 22 + 35 = 57. Hence, (4).

20. In the given analogy, A and E are the first and the fifth letter in the English alphabet series respectively. Similarly Z and V are first and fifth letter in the reverse order of the alphabet. U and T are the sixth and seventh letters in the reverse order of the alphabet. Answer is FG i.e., sixth and seventh letters from the beginning of the alphabet. Hence, (3).

21. In the given analogy, 12 is twice that of 6 and position number of F is twice as that of the position number of C. So, the required term is 6J as 6 is twice as that of 3 and position number of J is twice as that of the position number of E. Hence, (3).

22. In all the option sets the second letter of each set is at position number which is the square of the position number of the first letter except AC. Hence, (4).

23. The numbers in all the option sets are divisible by 7 except 244. Hence, (1).

24. $(2 \Delta 8)\ O\ (6 \Delta 4) = \left(\frac{2+8}{2}\right) O \left(\frac{6+4}{2}\right)$
$= 5\ O\ 5 = \frac{5-5}{2} = 0$. Hence, [3].

25. $12 \square 6 = \frac{12-6}{12-6} = \frac{18}{6} = 3$. Hence, (4).

26. $(10 \square 6) \Delta (28 \square 20)$
$= \left(\frac{10+6}{10-6}\right) \Delta \left(\frac{28+20}{28-20}\right) = \left(\frac{16}{4}\right) \Delta \left(\frac{48}{8}\right)$
$= 4 \Delta 6 = \frac{4+6}{2} = 5$. Hence, (1).

27. 1] $(2 \Delta 3)\ O\ (2 \Delta 3) = \left(\frac{2+3}{2}\right) O \left(\frac{2+3}{2}\right) = 0$
2] $(7 \square 3) \Delta 4 \left(\frac{7+3}{7-3}\right) \Delta 4 = \frac{10}{5} \Delta 4 = 2 \Delta 4 = \frac{2+4}{2} = 3$
3] $(7 * 4) \Delta (7 \square 4) = \left(\frac{7-3}{7+3}\right) \Delta \left(\frac{7+4}{7-4}\right) = \frac{3}{11} \Delta \frac{11}{3}$
$= \frac{\frac{3}{11} + \frac{11}{3}}{2} = \frac{9+121}{33 \times 2} = \frac{130}{66}$
4] $\frac{9 \square 3}{9 * 3} = \frac{\frac{9+3}{9-3}}{\frac{9-3}{9+3}} = \frac{\frac{12}{6}}{\frac{6}{12}} = \frac{2}{\frac{1}{2}} = 4$
Hence, (4).

28. i. $A \Delta B = \frac{A+B}{2}$; $-(AOB) = -\left(\frac{A-B}{2}\right) = \frac{B-A}{2}$

$\therefore A \Delta B \neq -(AOB)$. Hence, not true

ii. $A \square B = \frac{A+B}{A-B} = \frac{\frac{A+B}{2}}{\frac{A-B}{2}} = \frac{A \Delta B}{A \, O \, B}$.

Hence true.

iii. $A * B = \frac{A-B}{A+B} = \frac{\frac{A-B}{2}}{\frac{A+B}{2}} = \frac{A \, O \, B}{A \Delta B}$.

Hence true. Hence, [2].

PRACTICE EXERCISE-2

Answers to questions 1 and 2:

From ROSE and GOAT $\therefore$ O N
From ROSE and RAIL $\Rightarrow R \rightarrow V$
From ROSE and BITE $\Rightarrow E \rightarrow F \therefore S \rightarrow G$
From GOAT and BITE $\Rightarrow T \rightarrow P$
From GOAT and RAIL $\Rightarrow A \rightarrow L \therefore G \rightarrow Q$
From RAIL and BITE $\Rightarrow I \rightarrow D$
$\therefore A \rightarrow C$ and $B \rightarrow R$

1. The word GREAT will have "QVFLP"
The five letters can be arranged in any possible order, since the order is not important. Hence, (2).

2. 'F' is code for 'E', 'G' for 'S', 'P' for 'T' and 'L' for A.
Thus the meaning words will have letters E, S, T and A i.e., SEAT or EAST. From options EAST is correct answer. Hence, (4).

Answers to questions 3 and 4:

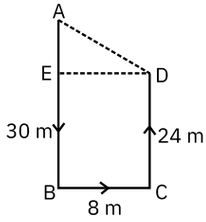
3. Clearly the letters are coded as:
$P \rightarrow 4$. $A \rightarrow 13$, $N \rightarrow 14$, $M \rightarrow 15$, $U \rightarrow 5$, $J \rightarrow 6$, $B \rightarrow 7$, $E \rightarrow 8$, $K \rightarrow 9$, $I \rightarrow 10$, $S \rightarrow 11$, $T \rightarrow 12$
Hence PAKISTAN will be coded as 4-13-9-10-11-12-13-14. Hence, (3).

4. "Ram likes Shyam" coded as "If or but".
"Shyam likes Gopal" coded as "but or hut".
$\therefore$ Code for "Ram" is "IF" while code for Shyam and likes will be OR or BUT.
Only option (3) satisfies this. Hence, (3).

Answers to questions 5 to 8:

Letter 'A' is repeated in the word 'MADRAS' and the code 'G'. Hence, 'A' is coded as 'G'.
Similarly, letter 'M' is repeated in the word 'MUMBAI' and the code 'S'. Hence, 'M' is coded as 'S'. Letter 'U' is common in the words 'JODHPUR' and 'MUMBAI' so is the code 'A'. Hence, 'U' is coded as 'A'. Letter 'R' is common in the words 'JAIPUR' and 'MADRAS', so is the code 'X'. Hence, 'R' is coded as 'X'. From the words 'JODHPUR' and 'MADRAS' we can see that 'D' is coded as 'J'. Again, from words 'JODHPUR' and 'DELHI', we get the code for H as N. Between words 'DELHI' and 'MUMBAI', the code for letter 'I' can be found as 'O'. In the word 'MUMBAI', the code for all letters except 'B' are known.
Hence, the code for 'B' is 'H'.
Now, all the questions can be answered.
5-(3) 6-(3) 7-(1) 8-(4)

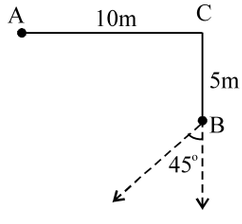
9.



Ravi goes 30 m from A to B. Then he goes 8 m from B to C and finally 24 m from C to D. To find the distance
$AD = \sqrt{AE^2 + DE^2}$
AE = AB – BE = AB – CD = 30 – 24 = 6 m and
DE = BC = 8 m
Hence, $AD = \sqrt{6^2 + 8^2} = 10$ m. Hence, (2).

10. The angle between South-West and West is 45°.
Hence, (1).

Answers to questions 11 and 12:



11. At the end, he will be facing South-west. Hence, (1).

12. $\angle ACB = 90°$
$\therefore AB^2 = AC^2 + BC^2 = 10^2 + 5^2 = 125$
$\therefore AB = \sqrt{125} = 5\sqrt{5}$ meters. Hence, (3).

Answers to questions 13 to 16:

13. There are 5 cases where a vowel is preceded by a vowel and followed by a consonant viz. CIO, ROO, TUA, TIE and TOA. Hence, (3).

14. If the vowels are removed, the resulting sequence is:
NFCRMNTSMCTNRTCTNNT
The 10^{th} letter from the right is 'C', the 5^{th} letter to its left is 'M' and the 8^{th} letter to its right is 'R'. Hence, (2).

15. A, C, I, N, O, R, T, M and U each appear more than once. Hence, (3).

16. In the given sequence, there is no pair NT satisfying the given criteria. Hence, (4).

Answers to questions 17 and 18:

17. The series is +4, +8, +12, +16, +20.
The missing number = 26 + 16 = 42. Hence, (1).

18. In the given series, the difference of the position numbers of the pairs follow the sequence of 3, 4, 3, 4.. and the difference of the position numbers of second letters of the pairs follow the sequence of 4, 3, 4, 3. $\therefore$ The required term is RU. Hence, (3).

19. The 1^{st} and 3^{rd} letters of the first group are each moved four steps backward to obtain the corresponding letters of the second group. The 2^{nd} and 4^{th} letters of the first group are each moved four steps forward to obtain the corresponding letters of the second group. Hence, (2).

20. $7^2 - 9 = 40$; $9^2 - 7 = 74$; $40^2 - 74 = 1526$;
$74^2 - 40 = 5436$. Hence, (1).

21. The product of the digits of numbers in all the option sets is 24 except 132. Hence, (3).

22. All the numbers are a multiple of 131 except 272. Hence, (2).

23. $x^2 + b^2 > z^2 + a^2$; $b = a$
$\Rightarrow x^2$ is greater than z^2. But the values of x and z could be negative.
$\therefore$ Option (1) cannot be the answer.
$\therefore b^2 = a^2$. Hence, [2].

24. $ab < \frac{z}{y} = c \Rightarrow ab < c$. Hence, [2].

25. $AB > (Z + R)\frac{Y}{N} \leq M$
$\frac{NAB}{Y} - R > Z$. Hence, (4).

26. $\frac{PQ}{R} \leq Z^2 = 1$ $\therefore Z = \pm 1$.
$\therefore PQ \leq \pm R$. Hence, [3].

27. $\frac{M + N}{K} \leq L < Z^2 = M \Rightarrow L < M$. Hence, [2].

LR-5.2 | LOGICAL REASONING–2

PRACTICE EXERCISE-1

1. There are four lines passing through a point and
$2 \equiv 1, 3 \equiv x, 4 \equiv 16, 5 \equiv 125$
i.e., $2^0 = 1, 4^2 = 16, 5^3 = 125$
$\therefore x = 3^1 = 3$. Hence, (4).

2. There are 13 triangles in the given figure. Hence, (3).

Answers to questions 3 to 5:

Height of pile A from the ground = 15 books × 7 cm + 95 cm = 200 cm
Height of pile B from the ground = 12 books × 8 cm + 100 cm = 196 cm
Height of pile C from the ground = 9 books × 12 cm + 90 cm = 198 cm
Height of pile D from the ground = 8 books × 11 cm + 110 cm = 198 cm

3. Excluding the top book, the height of piles A, B, C, D are 193 cm, 188 cm, 186 cm, 187 cm respectively. Hence, no two piles are at the same height from the ground. Hence, (4).

4. From the calculation above, piles C, D are at the same height from the ground. Hence, (2).

5. The answer is (2). Hence, (2).

6. 9^2x 4x 25^2x
3^2x 4^2x 5^2x 25x
3x 16^2x 5x
Hence, (3).

Answers to questions 7 to 10:

7. $O \rightarrow N \rightarrow L \rightarrow \_\_ \rightarrow K \rightarrow M$.
M is the youngest member. Hence, (4).

8. $L \rightarrow O \rightarrow N \rightarrow \_\_ \rightarrow K \rightarrow M$. Hence, (4).

9. The arrangement is the same as the last question, but K can be male/female member. Hence, (4).

10. Refer to the diagram from the answer of question Q.12. He belongs to the 3rd last generation. Hence, (3).

11. Raghunandan satisfies all conditions and should be selected. Hence, (1).

12. Shailesh is less than 25 years and therefore should be referred to the chancellor. Hence, (3).

13. Rachna is a rank holder, but her securing first class has not been mentioned. Hence, (5).

14. Vishal has scored 2040 in the GRE, 10 less than required. Therefore, reject the candidate. Hence, (2).

15. Satish Bhat has got a second class in his career and therefore he should be rejected. Answer is (2).

Answers to questions 16 to 19:

Here the two digits of the numbers are added and the number with the highest sum is placed first. For e.g., 59 = 5 + 9 = 14, 66 = 6 + 6 = 12, therefore, 59 gets placed before 66. In case of equal sums, the one with smaller tens digit is placed first.

16. 55 = 5 + 5 = 10; 78 = 7 + 8 = 15
Since 15 is higher than 14 i.e., (5 + 9) for 59; it would be placed first and 55 would be placed before 09 i.e., fourth position. Hence, (2).

17.
48	74	86	98	09	29	Input
98	48	74	86	09	29	Step I
98	86	48	74	09	29	Step II
98	86	48	29	74	09	Step III

$\therefore$ Number 09 is placed last. Hence, (2).

18. 4th position is occupied by 29. Hence, (3).

19.
48	74	86	98	09	9	Input
98	48	74	86	09	29	Step I
98	86	48	74	09	29	Step II
98	86	48	29	74	09	Step III

$\therefore$ There are 3 steps. Hence, (2).

PRACTICE EXERCISE-2

1. Row 1: 7 6 4
From i, 7 × 6 = 42
From iii, 42 – 4 = 38. Thus, a = 38
Row 2: 3 11 a
From iv, 11/3 = 3
From i, we have 38 × 3 = 114
Hence, output of the second row is 114. Hence, (3).

2. First row: 8 5 4
From ii, we have 8 + 5 = 13
From i, we have 13 × 4 = 52
Second row: 3 9 12
From iv we have 9/3 = 3
From i, we have 3 × 12 = 36
Thus, the sum of the outputs of the two rows = 52 + 36 = 88. Hence, (2).

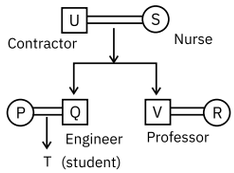
3. First row: 12 1 7
From iii, 12 – 1 = 11
From iv 11/7 = 1
Thus, the output of the first row is 1
Second row: 14 15 13
From iii. 15 – 14 = 1
From iv, 13/1 = 13
Thus, the output of the second row is 13
The product of the outputs of the two rows = 13 × 1 = 13.
Hence, (4).

4. Second row: 18 16 7
From iii, 18 – 16 = 2
From ii, 2 + 7 = 9
Thus, n = 9
First row: 24 9 11
From iii, 24 – 9 = 15
From iv, 15/ 11 = 1
Thus, the output of the second row = 1. Hence, (1).

5. First row: 13 12 32 21
From i, 13 × 12 = 156
From iii, 156 – 32 = 124
From iii, 124 – 21 – 103
Hence, the output of the first row is 103.
Second row: 8 18 32 21
From iii, 18 – 8 = 10
From iii, 27 – 10 = 17
From iv, 31/17 = 1
Hence, the output of the second row = 1
Thus, the positive difference of the two rows = 103 – 1 = 102. Hence, (5).

6. 4 4 × 2 8 2
16 × 2 32 × 2 64 × 2
128 × 2 512 × 2 1024
128 × 2 = 256. Hence, (1).

Answers to questions 7 to 11:



The family tree is as follows.

7. V is R's husband. Hence, (1).

8. R is T's aunt. Hence, (3).

9. P can be a doctor or a house wife. Hence, (4).

10. PQ, VR and US are the three married couples. Hence, (3).

11. P, R and S are definitely female members. T can be male or female. Hence, (3).

12. Mr. X fulfils condition (i), and need not fulfil any other condition. He will certainly be considered. Hence, (1).

13. Mr. Y fulfils condition (i), and need not fulfil any other condition. He will certainly be considered. Hence, (1).

14. Mr. W only fulfils condition (i), and cannot claim anything in mitigation. He will certainly not be considered. Hence, (2).

15. Mr. M, being from poor family, may be considered, as all conditions could be relaxed for him. Hence, (3).

16. Mr. A fulfils conditions (i) and (ii), and will automatically be considered. Hence, (1).

17. The arrangement in the machine is done by placing the number whose sum of square of digits is least at the beginning. Then, the number having sum of squares of its digit as 2nd least behind the first number and so on.
Input = 525, 334, 260, 454, 531, 645, 897
Sum of squares of input is 54, 34, 40, 57, 35, 77, 194
Step 1: 34, 54, 40, 57, 35, 77, 194
Step 2: 34, 35, 54, 40, 57, 77, 194
Step 3: 34, 35, 40, 54, 57, 77, 194
So in step-3. We get the required arrangement i.e., 334, 531, 260, 525, 454, 645, 897. Hence, (1).

18. Input: 544, 634, 546, 712, 275, 367, 432
Step - 1: 432, 544, 634, 546, 712, 275, 367
Step - 2: 432, 712, 544, 634, 546, 275, 367
Hence, (2).

19. From step third we cannot find the Input. Hence, we cannot find the first step. Hence, (4).

20. Input 423, 334, 245, 666, 743, 535, 475.
Square of each number is 29, 34, 45, 108, 74, 59,90.
$\therefore$ The final step will 29, 34, 45, 59, 74, 90, 108.
$\therefore$ The number associated with these sum equals 423, 334, 245, 535, 743, 475, 666.
None of the option A, B, C matches the answer.
Hence, (4).

21. The logic behind the arrangement of the words is the last letter of each word are compared and the one with a its last alphabet coming at last in the english alphabet series is placed at the start of the sequence.
$\therefore$ The last step of the input is.
Input: 'The only Book with real IIFT questions'. will be 'Only IIFT questions real book with the'. Hence, (4).

22. If Step 2 of an Input is "you get always should strive to something".
Then later steps will be
Step-3 you get always to should strive something.
Step-4 you get always to something should strive.
Step-4 which is our required statement. Hence, (3).

23. Input:- 'Their aim is a society at peace'.
Step 1:- 'Society their aim is a at peace'.
Step 2:- Society at their aim is a peace.
Step 3:- Society at is their aim a peace.
Step 4:- Society at is their aim peace a.
Total of 4 steps are required to find the final step. Hence, (1).

Data Sufficiency

DS-5.1 | DATA SUFFICIENCY

PRACTICE EXERCISE-1

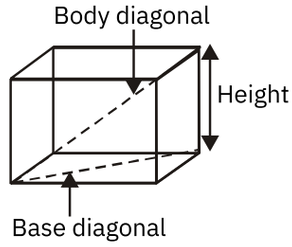
1. I : We get the ratio of investments of A and B. However the period of investments are not given. Also the number of partners is not mentioned.
   II : We get the ratio of investment periods, but we do not have the ratio of investments and the number of partners.
   Even considering both the statements together, we only have the ratios of investments and investment periods but we do not know the number of partners. Hence, (4).

2. I : p is even and q is odd.
   p^q is even. But we have no data about r^s which may be a fraction.
   Thus, I alone is not sufficient to answer the question.
   II : r is odd and s is even.
   $\therefore$ r^s is odd. But we have no information about p^q which may be a fraction. Thus, II alone is not sufficient to answer the question.
   Combining I and II, p^q is even and r^s is odd.
   $\therefore$ $p^q \times r^s$ is even. Thus, both statements together are sufficient to answer the question. Hence, (3).

3. $a : b = \frac{3}{7} : 2$ i.e., $a : b = 3 : 14$
   $b : c = 7 : \frac{11}{2}$ i.e., $b : c = 14 : 11$.
   $\therefore$ $a : b : c = 3 : 14 : 11$.
   Let a, b, c be 3k, 14k and 11k respectively.
   $\therefore$ $a + c = 3k + 11k = 14k = b$
   I : We do not get any additional information to solve the question.
   II : $a + 3b - 2c = \frac{3}{14}b + 3b - 2\ \frac{11}{14}b = 23$
   Using this equation we can find the value of b and hence of a and c.
   Thus, II alone is sufficient to answer the question.
   Hence, (1).

4. I : $x = y - z$
   $y + z = 20$ and y is a factor of z.
   So, the different pairs for (y, z) could be:
   (1,19), (2,18), (4,16), (5,15) and (10,10).
   Then, x may take multiple values depending upon various values of y and z.
   So, I alone is not sufficient to answer the question.
   II : $|x| = |y + z| = 30 \Rightarrow x = \pm 30$.
   Thus II alone is not sufficient to answer the question as no unique value ofx can be found.
   I and II cannot be combined as they contradict each other. Hence, (4).

5.



Neither statement, alone, is sufficient to answer the question. But if we combine them we can calculatethe height. Hence, (3).

6. I : One of the roots is complex means both roots are complex and also conjugates of each other. But we cannot calculate the roots.

II : Sum of roots is 4 means we can have several possibilities of root pairs.

Even if we combine the statements, we will only be to calculate the real part but not the imaginary part. Hence again we do not know the exact roots. Hence, (4).

7. Either statement, individually, gives several possibilities for the numbers. But both statements, together, will give a specific pair as the product of HCF and LCM gives the product of the numbers.

Now by knowing the product of the numbers and the sum of numbers we can solve and get a specific set. Hence, (3).

8. I : $100000 \times \frac{(100-a)^2}{100^2} = 81000 \Rightarrow a = 10$

II : $100000 \times \frac{(100-a)^3}{100^3} = 72900 \Rightarrow a = 10$

Hence, (2).

9. If the marked price of the watch at the first (in terms of time) shop is Rs.a and at the second shop is Rs.b, then

$0.9b = 1.1\ a$ .....(1)

I : $b - a = 20$ .....(2)

Using (1) and (2) simultaneously will give values of a and b and hence the amount paid for the watch can be calculated 0.9b or 1.1a.

II : $\frac{a}{b} = \frac{2}{3}$ or $\frac{b}{a} = \frac{2}{3}$ .....(3)

(1) and (3) cannot be true simultaneously. Hence, (1).

10. I : Using this information we can calculate the rate of the hay and hence the question can be answered.

II : Using this information too, we can calculate the rate of hay and hence the question can be answered. Hence, (2).

11. To calculate average speed we should know the total distance travelled and the total time taken.

Now the total distance travelled is 200 km.

I : This gives the total time taken and hence average speed can be worked out.

II : There are four spells of 50 km each and in the first, the speed is 50 km/hour; in the following spells the speeds are 100, 200 and 400 km/hour respectively. Now again we can calculate total time taken and hence work out the average speed.

Hence, (2).

12. Let the speed and length of train be v & ℓ then:

I : ℓ / v = 5 s. ..... (1)

ℓ cannot be calculated.

II : $\frac{\ell + 1000}{v}$ = 55 s. .....(2)

Still ℓ cannot be calculated.

Using statements I and II i.e. (1) and (2) together, we have two unknowns and two equations and hence we can solve them to find ℓ. Hence, (3).

13. Let the age of the younger son be x, that of the older son be x + 2 and let Raju's age be 4x.

I : It is not known if Sonu is elder or younger than Monu.

II : It is not known if Monu is elder or younger than Sonu.

Combining both the statements we can see that

Sonu is the younger son.

Then x = 10 and 4x = 40. Hence, (3).

14. I : The diagonal, y = x, and the arms, x = 0 and y = 0, all have the same common point; hence we cannot calculate the length of any arm or diagonal. Thus we cannot calculate the area.

II : In this case the diagonal, y = 1 – x, has different common points with the arms, x = 0 and y = 0, and so by knowing these points we can calculate the length of the diagonal. Hence here we can calculate the required area. Hence, (1).

15. I : The statement is of no use as no unique ratio can be found out (as the heights can be just about anything).

II : This statement too, gives several ratios.

On combining the two statements we get a definite ratio of 3 : 1 (or 1 : 3, whichever required). Hence, (3).

16. I : If we take $x - \frac{1}{x} = p$ then the equation becomes $5(p^2 + 2) + 4p + 3 = 0$, which will give two values of p, and which leads to multiple values of x.
II : This equation seems to be quadratic with two values of x but it can be seen that it is of the form $2(2x - 3)^2 = 0$ which gives only one value of x. Hence, (1).

17. I : Remaining area $= \pi\left(r^2 - \frac{r^2}{4}\right) = 7.45$.
Thus r can be worked out.
II : The concerned ratio $= \frac{4\pi r^2}{\pi r^2} = 4 : 1$ always.
Thus no additional information is given about the radius. Hence, (1).

18. Let the cost of one chair and one table be Rs.a and Rs.b respectively.
I : $4a + 3b = 1200$ .... (1)
II : $20a + 15b = 6000$
$\Rightarrow 4a + 3b = 1200$ .... (2)
Individually, (1) or (2) cannot give definite values of a and b. Also both statements together lead to dependent equations and therefore cannot be solved for unique solution. Hence, (4).

19. I : (x + 20) percent of y is (x + 20).
Hence y = 100.
But we dont have the value of x.
So statement I is insufficient to answer the question.
II : $\frac{x}{3} = \frac{y}{4}$.
This is one equation with two unknowns. Hence statement II is insufficient to answer the question.
Now, using both the statements we have y = 100 and hence, $\frac{x}{3} = \frac{100}{4}$, i.e., x = 75.
Hence, (3).

20. $x^2 - 14x + (50 + c)$
$= x^2 - 14x + 49 + (1 + c)$
$= (x - 7)^2 + (1 + c)$
I : c = 1, 2, 3, ...
In any case, as $c \geq 1$,
$(x - 7)^2 + (1 + c) \geq 2$ [as $(x - 7)^2 \geq 0$].
Hence the given expression is always positive.
II : If c is any integer, nothing can be said about the expression.
Hence, (1).

PRACTICE EXERCISE-2

1. Questions cannot be answered using statements I and II alone as symbols cannot be interpreted.

   Combining statements I and II, we have:

   8 # 6 = 6; 12 # 9 = 12

   $\therefore$ 6 # 12 can be either 6 or 12. Hence, (5).

2. Without knowing the number given to S and only using statement I, it is not possible to say whether S can make the given statement.

   Similarly, only statement II does not tell us who took the first turn.

   Using statement II and the fact that x and y are even and positive, S knows that the only possibilities for the number given to P are 16 and 24. Now, if P's number had been 16, with the restriction that x and y are even, positive and distinct, there is only one possibility i.e., 10 for the number given to S. In that case, P would not have made the statement given in the 1st statement. The number 24 can, on the other hand, be formed in two different ways, 2 × 12 and 4 × 6. With both I and II, therefore, S knows that the number given to P is 24. Hence, (4).

3. From statement I:

   The names that start with surnames and:

   with C are 10%

   with B are 25 – 15 = 10%

   i.e., 5% of the names that start with the surnames do not start with B or C, but we also do not know how many of them start with A.

   Hence, we cannot answer the question.

   From statement II:

   The names that start with surnames and:

   with B are 10%

   with C are 25 – 10 = 15%

   i.e., not a single name starts with the surname and the letter A. Thus, we can answer the question.

   Hence, (2).

4. From Statement I:

Dec	Jan	Feb	March	April	May
200	126/ 156	231	156/126	286	96

OR

Dec	Jan	Feb	March	April	May
200	286	126/ 156	231	156/126	96

Thus, statement I alone is not sufficient to answer the question.

From Statement II:

Nov	Dec	Jan	Feb	March	April
286/96	200	126	231	156	96/286

OR

Dec	Jan	Feb	March	April	May
200	126	231	156	286/96	96/286

We can have one more possibility between the months October-March.

Thus, statement II alone is also not sufficient to answer the question.

Combining the two statements, we get,

Dec	Jan	Feb	March	April	May
200	126	231	156	286	96

Thus, the question can be answered using both the statements together. Hence, (4).

5. From the data given, Babba is the shortest and is standing at the end.

From statement I:

Abba and Babba have 2 different letters in their names, Dabba and Ebba have 3 different letters in their names. Hence, only Chabba can be at the first position and is the tallest.

Thus, statement I alone can answer the question.

From statement II:

Chabba has 4 different letters in his name, hence he is taller than Ebba and standing before Ebba. But, this information is not sufficient to answer the question.

Hence, (1).

6. $78 = 1^2 + 2^2 + 3^2 + 8^2 = 2^2 + 3^2 + 4^2 + 7^2$

$= 1^2 + 4^2 + 5^2 + 6^2$

From statement I:

(a, b, c, d) and (x, y, z, w) can take values (1, 2, 3, 8) and/or (2, 3, 4, 7). Then the required sum can be = 14 + 14 or 14 + 16 or 16 + 16.

Thus, statement I is insufficient to answer the question.

From statement II:

$(a + b + c + d) - (x + y + z + w) = 2$

(a, b, c, d) = (2, 3, 4, 7) or (1, 4, 5, 6)

and (x, y, z, w) = (1, 2, 3, 8)

Thus, the required sum = 16 + 14 = 30. Hence, (2).

7. From statement I:

Number of yellow triangular beads = 1.2 × 0.1 × 0.3 × (total beads)

But from this we cannot find the number of triangular beads.

Thus, statement I alone is insufficient to answer the question.

Statement II alone is also insufficient to answer the question.

Combining both the statements I and II:

Number of triangular beads = 0.7 × 4000 = 2800

and the number of yellow triangular beads

= 1.2 × 0.1 × 0.3 × 4000 = 144

i.e., the question can be answered using both the statements. Hence, (4).

8. From the data given, 5 minutes after the race started, 5 runners are behind A and 3 runners are ahead of B.

From statement I: 10 minutes after the race started, _ B A _

But, nothing is known about A, i.e., we do not know whether A beat or A lagged behind in the last 5 minutes.

Hence, statement I alone is not sufficient to answer the question.

From statement II: 15 minutes after the race started, $\overline{3}$ $\frac{B}{2}$ $\overline{1}$ and 5 runners...A

But, we do not know the exact position of A. Hence, statement II alone is also not sufficient to answer the question.

Combining the two statements, also do not help us to answer the question. Hence, (5).

9. From statement I:

Let AB = CD = x, then BC = AD = 2x.

Also, CG = x and EC = 2x.

Since, $\Delta EFD \sim \Delta EGC$, $\frac{ED}{EC} = \frac{EF}{EG} = \frac{FD}{CG} = \frac{1}{2}$

$\Rightarrow$ ED = x and FD = $\frac{x}{2}$

Now, in right-angled ΔEDF,

hypotenuse EF = $\sqrt{x^2 + \frac{x^2}{4}} = \frac{\sqrt{5}}{2}x$

AF = AD – FD = $2x - \frac{x}{2} = \frac{3x}{2}$

Thus statement I alone is sufficient to find the ratio AF : FE.

From statement II:

Let A(□ ABGF) = 5a, then A(□ GCDF) = 4a.

Also, (□ ABCD) = 9a and A(ΔEGC) = $\frac{9a}{2}$.

Then, A(ΔEFD) = $\frac{9a}{2} - 4a = \frac{a}{2}$.

i.e., A(ΔEFD) : A(ΔEGC) = $\frac{1}{9}$

$\Rightarrow \frac{ED}{EC} = \frac{EF}{EG} = \frac{FD}{GC} = \frac{1}{3}$

Let AB = CD = x, then

ED = $\frac{x}{2}$, FD = $\frac{x}{3}$, EC = $\frac{3x}{2}$, EF = $\frac{\sqrt{13}\,x}{2}$ and AF = $\frac{3x}{2} - \frac{x}{3} = \frac{7x}{6}$

Thus, statement II alone is also sufficient to answer the question. Hence, (3).

10. From statement I:

We have the following arrangement:

1. Vanita – Suresh
2.
3. Vijay – Sunila
4.
5. Vrinda – Shailesh

Statement I is not sufficient to answer the question.

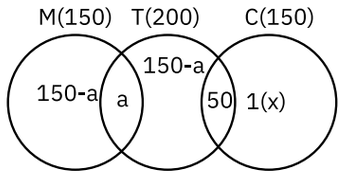
From statement II:

We get that Bijoy and Girija sit in front of Moloy and Keyur. This does not answer the question.

Combining statements I and II: We can gather that Bijoy and Girija sit on the second bench and Moloy and Keyur sit on the fourth bench. Thus, Moloy and Keyur sit behind Sunila. Thus both the statements are required to answer the question. Hence, (4).

11. From statement I:

We get the following,



$n(M \cup T \cup C)$

$= 150 - a + a + 150 - a + 50 + 100$

$400 = 450 - a$

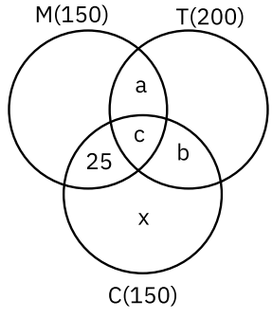
$\therefore a = 50$

$\therefore$ The required ratio $= \frac{a}{100} = \frac{50}{100} = 1 : 2$

Thus, statement I alone is sufficient to answer the question.

From statement II:

We get the following,



$n(C) = 25 + b + c + x$

$\therefore 150 = 75 + x \quad (\because b + c = 50)$

$\therefore$ x = 75.

$n(M \cup T \cup C) = 150 + 200 - a - c + x$

$\therefore$ 400 = 350 − (a + c) + 75.

$\therefore$ a + c = 25

Thus, the required ratio = $\frac{a+c}{x} = \frac{25}{75} = 1 : 3$

Thus, statement II alone is sufficient to answer the question. Hence, (3).

12. Statement I and II are individually not sufficient to answer the question as we cannot infer about the winner.

Combining statements I and II:

The combination of sets won by Federer and Nadal can be:

i. Nadal – 7-7-0-0-20 ... 34 games
Federer – 6-6-6-6-18 ... 42 games

Therefore, Nadal wins.

ii. Nadal – 7-7-0-0-20 ... 34 games
Federer – 6-6-6-6-22 ... 46 games

Therefore, Federer wins.

Many such cases may exist where either of them wins the game. Hence, we cannot answer the question. Hence, (5).

13. We have B > A and A > C.

From statement I: D > E

This statement alone is not sufficient to rank the five.

From statement II: E = $\frac{A+D}{2}$.

$\Rightarrow$ E's score lies between A's and D's scores. This is also not sufficient to answer the question. Combining both the statements, D > E > A > C and B > A. Thus, the arrangement from highest to lowest could be D-B-E-A-C or B-D-E-A-C or D-E-B-A-C.

$\therefore$ The question cannot be answered. Hence, (5).

14. From statement I: We can find the volume of the spherical section. Hence, its radius and the answer can be found. However, statement II is not relevant. Hence, (1).

15. From statement I: We get the time taken by the loser in relative term.

From statement II: We get the distance travelled by the loser in relative distance term.

So neither statement I nor statement II alone is sufficient to answer the question.

Combining statements I and II:

We get the speed of the loser in absolute term, i.e., $\frac{24}{6}$ = 4 mps.

From this the loser's time to complete the race and then the winner's time can be calculated. Thus, the speed can be calculated. Hence, (4).

16. From statement I: 520 cans were sold at Rs.7.50 per dozen i.e., Sales = $520 \times \frac{7.5}{12}$

But it doesn't provide any information about the investment.

$\therefore$ Statement I is insufficient to answer the question.

From statement II: Sales = 1.18 × Investment, but it doesn't give any information about investment.

$\therefore$ Statement II is insufficient to answer the question.

Combining statements I and II, investment can be found, as we know the sales. Hence, (4).

17. Let the numbers be x, x + 2, x + 4 and x + 6.

From statement I:

$\Rightarrow \frac{x + x + 2 + x + 4 + x + 6}{4} = 8 \Rightarrow x = 5$

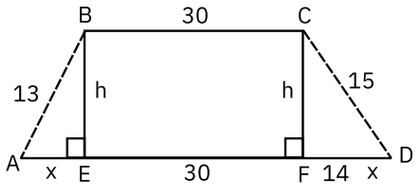
$\therefore$ Numbers are 5, 7 9 and 11.

$\therefore$ GM = $\sqrt[4]{5 \times 7 \times 9 \times 11}$

From statement II: We can't find the geometric mean as we do not know the numbers. Hence, (1).

18. Both the statements, individually, are not sufficient to answer the question.

Combining statements I and II,



From ΔABE and ΔDCF we get,

$h^2 = 13^2 - x^2 = 15^2 - (14 - x)^2$

$\Rightarrow 28x = 140$

$\Rightarrow x = 5$ cm and $h = \sqrt{13^2 - 5^2} = 12$ cm

Thus, area of $\square$ ABCD can be calculated. Hence, (4).

19. Putting n = 1 in statement I, we get a sum upto the 1st term i.e., the first term.

Putting n = 1 in statement II gives the 1st term directly. So, we can answer the question by using either of the statements alone. Hence, (3).

20. From statement I: F + 2J = 84 ... (i)

From statement II: 3F + 12M = 252

But 2M = J $\therefore$ 12M = 6J $\Rightarrow$ 3F + 6J = 252

F + 2J = 84 ... (ii)

Therefore, both the equations are the same and it is not possible to determine the father's and the daughters' ages. Hence, (5).

Verbal Ability

VA-5.1 | FIJ, IMPLICIT STATEMENTS, PROBABLY TRUE/FALSE

PRACTICE EXERCISE 1

1. The passage does not mention what, if any calamity, occurred at the Dabhol Power Company. Therefore, the 'data is inadequate' to draw any conclusion. Hence, (3).
2. The description of DPC power plant in the passage suggests that it is not operating as of now: 'Since June 2001 ... generated any power'. So this inference is 'definitely true'. Hence, (1).
3. The power plant mentioned in this passage is located in Guhagar, about 300 km from Mumbai. However, there is no information in the passage as to whether the DPC might have another power plant in Mumbai. Hence, (3).
4. Even though the power plant is not in an operating stage at present, there is no information in the passage regarding plans for its future. Hence, (3).
5. The given sentence is 'definitely true', as this information is stated in the penultimate sentence of the passage. Hence, (1).
6. According to R. Spitz's observations, 'stimulus-hunger' among infants led to their becoming ill and eventually dying. Thus, it is safe to mark the inference as 'definitely true'. Hence, (1).
7. There is not enough information in the passage to allow us to infer whether infants who were not deprived of physical intimacy were affected adversely or not. Hence, (4).
8. This statement is the obvious conclusion to the examples mentioned in the passage. Hence, (1).
9. 'A conclusion not hard to accept on the basis of everyday experience' – this statement implies that physical intimacy probably exists in the course of daily social interaction. However, we cannot be absolutely certain that it does, on the basis of this passage. This is what leads us to mark 'Probably true'. Hence, (2).
10. The passage only talks about 'temporary mental disturbances' resulting from solitary confinement, which is not the same as becoming a complete 'lunatic'. Thus there is not enough information to infer this. Hence, (4).
11. I is certainly implied: if the turtles' survival rate has declined, then they must be endangered. II is implied because it is a paraphrase of the second half of last sentence. The fact that feral pigs were 'introduced' by the mariners in the 19th century implies that they did not exist in Santiago before the 19th century. Thus III is implied as well. Hence, (4).
12. 'Once more' suggests that they had exceeded their production rates earlier, thus I is implicit. 'Relieved' suggests that the minister was worried. Thus II is implicit as well. There is no basis for III in the main statement. Hence, (1).
13. Statement A is certainly a Fact. Scanning the options, we see that, this eliminates options (2) and (3). Also, to decide between options (1) and (4), all we need to do is decide whether statement B is a Fact or a Judgment. Of the two, it is definitely a Judgement. Hence, without further ado, we can mark option (4). Please note that we have not even looked at statement C - in this case, we do not need to so to arrive at the correct option. You do not need to classify each statement - just use the technique of elimination for the options. Hence, (4).
14. In this question, on deciding that the first statement is a Fact, you are still left with (2), (3), and (4). Statement (b), 'The grass is blue', is definitely a Fact. So that leaves us with options (2) and (4), i.e., we have to decide if the last statement is a Fact or a Judgement; we need not check if it's an Inference, as that option is not available. 'Plastic is not a bio-degradable substance' is clearly not a Judgment: that leaves us with option (2) as the correct one. Please note that, just as in syllogisms, the statements need not conform to the world as you know it; the form of the sentence - 'the grass is blue' - as an objective statement marks it as a Fact. Just match the statement with the definition and classify it accordingly. Hence, (2).
15. Scanning the three statements, we see that statement C is the easiest to classify, as a Judgement. There is only one option wherein the last statement is classified as a Judgment: option (1). Hence, (1).

16. The first statement is easily classified as a Fact. Thereafter, we see that the second statement is all we need to classify; it is a Judgement, expressing an opinion. Once that is done, option (2) is clear. Hence, (2).

17. On classifying the first statement as a Fact leaves us with the need to classify only either statement B or C. Marking statement B as a Judgement leaves us with option (3) as the correct one. Hence, (3).

18. The first two statements are clearly Facts, and the third statement is a Judgement, as it expresses an opinion. Hence, (2).

19. Whether FM is a revolutionary concept or not is an opinion, and is therefore a Judgement. B states a simple Fact. Whether tight pants are being worn a lot nowadays or not can be verified by looking around, so C is also a Fact. Hence, (1).

20. Statement C is clearly a Judgement, which leaves options (1) and (3). B is not necessarily true for everyone, hence it is a judgment. Hence, (3).

21. All these statements are opinions, so the only option that fits is (4). Hence, (4).

22. Statement A is a personal opinion, so it is a Judgement. B is an Inference, as itis a conclusion based on a known fact (the renovation of the stadium). C is a simple Fact that can be verified through relevant data. Hence, (2).

PRACTICE EXERCISE 2

1. The first sentence of the passage compares two-wheeler marketing to racing, and states that the 'twists and turns' – i.e. which probably means unexpected risks – produce success. So we can say that this statement is 'probably true'. Hence, (2).

2. This statement clearly contradicts the last sentence of the passage, which states that scooter riders would never voluntarily do a 'wheelie'. Hence, (3).

3. This statement that can be marked as 'definitely false' based on the sentence 'The scooter doesn't fit into the picture at all.' Hence, (3).

4. The passage does not state what exactly a 'wheelie' is, but we can infer that it is probably some form of risky behaviour undertaken while riding a two-wheeler. So, this statement is 'probably true', though not 'definitely true'. Hence, (2).

5. This statement is a paraphrase of practically the entire passage, so it is 'definitely true'. Hence, (1).

6. Refer to the last sentence of the passage. 'Building itself as an international company' is easily inferable from the words 'attempt to expand overseas'. Thus the statement is definitely true. Hence, (1).

7. The passage clearly states that IBM's computer division has been taken over by Lenovo Group Ltd. The chairman has shifted his base to New York in order to expand the overseas market. So Lenovo no longer plays second fiddle to IBM. Hence, (3).

8. If I were true, the main statement would be meaningless, so I is not implicit. II is not implicit, as the government's intervention is merely said to be necessary in the main statement - the intervention may not be positive. III, however, is implicit in the word 'necessary'. Hence, (3).

9. If 'multinationals are expected to change the manufacturing landscape', then they are clearly capable of influencing the manufacturing sector. So I is implicit. II is not implicit, as the 'country' in question may not necessarily be India. Nothing as been mentioned about technology in the given sentence. Therefore, it is not possible to infer III. Hence, (4).

10. Both I and II are extreme conclusions with no basis in the main statement. There is no mention in the main statement of assigning blame for failure to conceive. So, none of the three statements can be said to be implicit. Hence, (4).

11. I is simply the main statement phrased another way, so it is implicit. But II and III are not implicit, as nothing about prices can be inferred from the given statement. Hence, (2).

12. There is a difference between 'flowery manners', which is not implicit, and 'well-mannered', which is. There is no basis for inferring II at all. Hence, (4).

13. I is clearly implicit from the idea that Picasso worked in a particular 'school of art'. II is implicit from the word 'arguably' used in the sentence. However, III is not at all implicit. Hence, (3).

14. The "photography" mentioned in the first sentence is referred to as "Daguerre's invention" in the second sentence, so assumption I is correct. Eliminate options (1) and (3). Since photography set painters free from imitating life, and made

Impressionism possible, the assumption has to be that Impressionism does not involve imitation of life. So II is correct. Eliminate option 4. Since the author refers to imitation of life as a "duty" of painters, we can assume that it is not something they all did voluntarily. So III is implicit. Eliminate option 2. Therefore all three assumptions are implicit. Hence, the correct answer is option 5.

15. The first sentence draws a conclusion based on the way Google is working, so it is an Inference. The second sentence is a personal opinion of the author, using subjective words like 'brilliant' and 'ferociously', so it is a Judgement. The first part of the third sentence is a fact. When we read the second part of the sentence, we realize that it is an Inference, which is drawn on the basis of the fact mentioned in the first part. The fourth sentence is a Fact because it simply tells us that book publishers are blaming Google for copyright infringement. Hence, (1).

16. The first statement is a Judgement as it describes a personal opinion. This narrows down the options to (1) and (3). D is clearly Fact because it states an easily verifiable piece of information. Hence, (1).

17. A shows the author's disapproval of satellite television; so it is a Judgement. B is an easily verifiable Fact. While C may seem like a Judgement, it is actually a Fact that can be verified by simple observation. D is again a Judgement because it shows the author's disapproval of western TV stations. Hence, (3).

18. The first sentence gives us information about how Mittal started making his fortune. Hence it is a fact. The second sentence has two parts. The first part is a fact on the basis of which a conclusion is reached in the second part of the sentence. Hence it is an inference. The third sentence is the author's opinion of Mittal. The last sentence presents us with a fact. Hence, (1).

19. The first sentence says that innovation and power of Google are posing a threat to others, which is mainly an opinion. The second sentence is an inference, as it deduces the reason for Google's stock market value going up. Sentence C is again an inference, as it explains how Google's profits and the Google experience can be better for everyone. The last sentence simply states a fact. Hence, (3).

20. The first statement is a judgement as 'deserves to be complimented' refers to a personal opinion. This narrows down the options to (2) and (4). The second statement is verifiable and is therefore a fact. Hence, (2).

21. Statement A merely states the Fact that there is an inequality. Both B and C are also Facts as they simply describe highly obvious features of this inequality. D, however, is the author's personal opinion and is therefore a judgement. Hence, (1).

22. The first and last statements are the author's own recommendations; hence judgements. B is an inference because it speculates about the unknown (smoothening the process of homecoming) based on the known (the trauma of adopted children). C merely reports what other people say, hence it is a fact. Hence, (4).

VA-5.2 | ARGUMENTS, COURSE OF ACTION, CAUSE–EFFECT

PRACTICE EXERCISE

1. Answer Option 2. In this case, statement B mentions the findings of a report which mention how the pre-school phase can help a child prepare for schooling. Statement A mentions that the government has decided to put children in a stimulating pre-school environment. Thus statement B is the cause while statement A is its effect. Hence, (2).

2. Answer Option 1. This is a clear case of the cause-effect relationship. Statement A is the cause since it mentions how swine flu spreads due to contact while statement B is the effect as the government has set up isolation wards to prevent the spread of this disease after a few cases were reported. Thus setting up of the isolation wards was the effect while the cause was to contain the spread of swine flu. Hence, (1).

3. Answer Option 3. Statement A mentions why the Election Commission conducted drives (to stop malpractices during the election) while statement B mentions why the voter turnout was high in the elections. Though both the statements are related to the election, they do not show a cause-effect relationship. However, they can are the effects of independent causes. Hence, (3).

4. Answer Option 3. Statement A mentions a vehicle manufacturer phasing out its diesel models while statement B talks about the decreasing price difference between diesel and petrol. Statement A is not necessarily an effect of the narrowing price differential. Thus the statements do not exhibit a cause-effect relationship. However, they can be effects of some other causes. Hence, (3).

5. The paragraph mentions that doctors want to be protected from assault. Statement I is the correct course of action as it will not only punish the wrong doers but also serve as a deterrent for any further incidents. Statement II is also a correct course of action as this will help the doctors to be more sensitive to a patient's problem and also take proper precautions if a doctor feels that there is the possibility of violence. Statement III mentions courts giving high priority to case related to medical negligence. However, since the main issue being discussed is ensuring the safety of doctors, this course of action will not help in addressing the problem. Hence, (2).

6. As per the paragraph, overuse of antibiotic has led to bacteria becoming resistant to the currently used antibiotics. Thus statement I is a correct course of action as it will lead to lesser use of antibiotics. Statement II is also a correct course of action as it will spread awareness about the overuse of antibiotics. If over the counter sale of antibiotics is stopped, people will be unable to use antibiotics without the relevant prescription. Thus this is also a correct course of action to prevent the overuse of antibiotics. Hence, (5).

7. The given paragraph mentions the problem related with the Intermediate Exams. Thus statement I which talks initiating action against the people concerned with this fiasco is the correct course of action. Statement II is also a correct course of action as it will allow students to express their problems and get them rectified. Though statement III looks to be a correct course of action, 'independent verification of results' is vague as agencies other than the authorities concerned should not be allowed access to the examination system. An internal audit is a better course of action than an 'independent verification.' Hence, (2).

8. Statement I is the correct course of action as studying the reasons for the collapse will help the concerned authorities to take the necessary preventive actions. Punishing the people responsible for negligence will indicate that stringent action will be taken against any person who is found to be negligent in his duty. This will also serve as a deterrent for others. Statement II is the correct course of action as it will help to avert any further disasters. Statement III is not a correct course of action as not all foot-over bridges are unsafe. This course of action can be followed only if any particular bridge is found to be unsafe after the audit. Hence, (4).

9. Statement I is irrelevant as the issue is not the moral development of the teenagers. Statement II is also weak as it merely talks about the popularity of comic books, but does not counter the point about the mental development of teenagers. Based on the same reasoning, Statement IV is also weak: 'spending time on the written word' does not mean that it cannot be detrimental. On the other hand, the fact that comic books distract students from their studies does not mean that they are detrimental to their mental development. Therefore all are weak. Hence, (4).

10. Statement I is not a strong argument for abolishing the banning of literature as 'subverting the psyche of the readers' cannot be automatically construed to be anti-democracy. Statement II is strong as it points out how literature hurts an aspect of democracy. Statement III is strong too as it shows that democracy and a ban on literature are not compatible. Statement IV is strong as well, as freedom is essential in democracy. Hence, (1).

11. Statement I is strong as it provides a sound, logical reason for continuing with capital punishment (fewer people commit crimes because the fear of the punishment stops them). Statement II is strong, as it explains what exactly is wrong with capital punishment. On the other hand, Statement III is weak as it does not state what is wrong with capital punishment; it merely suggests an alternative. There is inherent logic in the argument that the punishment should be the same as the crime. Hence, statement IV is strong. Hence, (4).

12. Statement I is strong as it asserts the unpreparedness of children to go to school before the age of five by citing psychological reasons. Statement II is also strong as it states a sound and valid reason for sending children to school earlier. Statement III is weak as it does not give a reason why children should not be sent to school before they are five, as opposed to any other age. Statement IV is weak as whether or not children wish to leave home is irrelevant - they still need to go to school for their education. Hence, (3).

13. Statement I is weak as it does not give a valid reason as to why television cannot be blamed for passivity - it merely states that people spent a 'substantial amount of time' listening to the radio too. Statement II is weak as there is no connection made to television watching and not going on picnics and treks. Statement III is weak as it does not clearly refute the accusation – it only shows that there is at least something positive about television. Only statement IV is strong as it shows how television inherently encourages a lack of activity. Hence, (1).

14. Statement I is strong - if past experience shows that candidates with less funds can do better than those with more, the given statement cannot be true. Statement II is strong, as it shows that obtaining funds is necessarily connected to the politicians' honesty. Statement III is strong, as it shows how a candidate's abiltity to give away freebies – which requires funds – counts more with voters than the candidate's character or intentions. But statement IV is weak, as it does not show whether the ability to gain funds helps the candidate win or not. Hence, (2).

15. Only statement I is a strong claim for the given statement. 'Being used to curiosity' is a vague reason for discussing public figures in newspapers. To be relevant the press need not discuss the private lives of public figures, they can take up other issues. Statement IV is a vague and unsubstantiated generalization. Hence, (1).

16. Statement I makes a strong point in favour of the given statement. You may not agree with statement II, but it still makes a strong case for justifying a nominal fine and not a strong punishment. It is important that you don't bring your personal views in answering such questions. Statement III just makes a generic statement about the effectiveness of legislation, but does not address the core issue, so it is not strong. Statement IV is irrelevant and weak. Hence, (1).

17. Statements III and IV are not related to the main statement at all. Statement II is irrelevant - whether or not voting is 'fun' makes no difference. Only statement I supports the main statement strongly by explaning what effect compulsory voting will have. Hence, (4).

18. There is a difference between 'reckless drivers' and 'drivers'. Statement A does not explain how the fine instils fear in all drivers. Thus, it is weak. Statement B is also weak as we cannot tell from the statement that the fines will be paid to the government. Hence, (3).

19. Statement A sounds very absurd. Though India finished last at the World Cup, it doesn't mean we should restrict ourselves to the Asian level. Statement B is a possible course of action,but it is not an argument. Therefore neither statement A nor B is strong. Hence, (3).

20. The advantage of compulsory sports is mentioned in statement A, and thus it is strong. The disadvantage of compulsory sports is mentioned in statement B, and thus, it is also strong. Hence, (4).

21. The problem of electricity is for small-scale industries and not for all the industries. Thus, A is not a suitable course of action. The problem is associated with 'lack of electricity'. If there is a 'lack' of the resource, there is no question of making it available at a subsidized rate. Thus, neither is a course of action. Hence, (4).

22. The agricultural yield is very low because of lack of irrigation facilities. A does not address the problem mentioned in the statement, but comes up with an unrelated suggestion. A model for better irrigation is mentioned in B. Thus, B is a possible course of action. Hence, (2).

23. A is not an adequate course of action, as it only addresses a part of the problem, and the 'poor transportation' aspect is not addressed at all. B is also not an appropriate course of action, as the problem of 'quality hotels' and 'poor transportation' does not get solved with the declaration. Thus, neither follows as the course of action. Hence, (4).

24. Both A and B are suitable courses of action. A can be the first step towards getting industries to be more responsible, and then B should be the next, more long-term course of action. Hence, (5).

25. A is not the correct course of action. Selling more insurance polices won't prevent deaths in the event of an earthquake. On the other hand, installing an early warning system would help do just that, so B is definitely a course of action. Hence, (2).

26. B doesn't sound like a good course of action because the real estate market could also prove very volatile, whereas Ais a good course of action for amateur investors. Hence, (1).

27. 'Improving the quality of goods' in A and 'identifying non-conventional items of export' in B are logical courses of action to increase India's share in world trade. Hence, (5).

28. In this case, A is the obvious course of action to be followed immediately, since the villagers' lives are at stake. However, in the long run, B is also a reasonable course of action, in order to prevent such an incident from recurring. Hence, (5).

Visual Reasoning

VisR-5.1 | VISUAL REASONING

PRACTICE EXERCISE

1. Elements move 1/2, 1, 1/2, 1, ..., steps clockwise and at a time, an element is added in front and behind alternately. Hence, (4).

2. In each step, the elements move down by one step with the bottom element moving to the topmost position. Hence, (2).

3. Number the arcs as 1, 2, 3, 4, 5 from top to bottom. From figure 1 to figure 2, arcs 2 and 3 are inverted. From figure 2 to figure 3, arcs 1, 4 and 5 are inverted. From figure 3 to figure 4, arcs 2 and 3 are inverted. Therefore, from figure 4 to figure 5, arcs 1, 4 and 5 should be inverted. Hence, (2).

4. The time keeps advancing by 55 minutes. Hence, (2).
Alternatively,
The smaller arrow rotates 30° clockwise and the other arrow rotates 30° anticlockwise. Hence, (2).

5. The two shaded areas move anticlockwise one step alternately. Hence, (1).

6. The smaller element becomes the main element in the next figure and one new small element is introduced, alternately at the top or at the bottom of the central element. Hence, (3).

7. Note that 'O' moves by 1, 2, 3, ... positions anticlockwise each time, while 'X' moves by 2, 4, 6, ... positions clockwise each time. Hence, (4).

8. All figures when turned upside down would look the same as the original figure except for (3). Hence, (3).

9. Only figure (1) would not look the same when vertically inverted. Hence, (1).

10. Only (4) has four lines, while all other figures have 3. Hence, (4).

11. In all other figures except for (1), the two elements are of different sizes. Hence, (1).

12. The answer is (2) and the reason lies in the location of the lines connecting the inner and outer elements. In all figures barring (2), these lines connect the vertices of the respective figures. Hence, (2).

13. The number of sides of the inner shape are two less than the outer shape. This rule is violated only in (2). Hence, (2).

14. The small circle outside the main figure, moves anticlockwise one step at a time. The arrow moves clockwise and a new element replaces the other element present inside the circle in sequence. Hence, (4).

15. The movement of the inner shaded triangle, which is one step anticlockwise, does not occur in (4). Hence, (4).

16. The bottom element moves up and intersects the upper element which is broken into equal halves and the left half gets shaded. Hence, (3).

17. The first element rotates 90° clockwise, the second rotates 135° clockwise, while the third inverts vertically. Also, the first element moves down to the second position, the second becomes the third and the third becomes the first element now. Hence, (3).

18. The top left element is replaced with a water image and moves to the centre. The mirror image of central element is considered in figure 2, while the mirror image of element at the bottom right corner is considered. Hence, (1).

19. The object is rotated 180° and kept on the right side in the second box and original object is placed on the left side. Hence, (2).

20. Opposite pairs: △ — □; ☆ — O; S — P
Option (1) and (2) are ruled out as, S–P, ☆–O which are opposite pairs are seen as adjacent sides. Option (3) is wrong, as P is supposed to be upright. Option (5) is wrong, as S should be oriented at right angles and should not be straight. Hence, (4).

21. Opposite pairs: A — D; B — C; E — F
Options (2), (3) and (5) are wrong, as they show opposite pairs to be adjacent. Option (4) is wrong, as element B should be upright. Hence, (1).

22. Opposite pairs are: 1 circle — 6 circles;
4 circles — 2 circles; 3 circles — 5 circles.
The correct choice is (3). Hence, (3).

23. Opposite pairs are: 1 — 3
6 — 8
5 — 7
Answer is option (3), as all other options have opposite pairs to be adjacent. Hence, (3).

24. Opposite pairs are:  — O;  — ∇;

Options (1), (3), (4) and (5) are ruled out, as these show opposite pairs as adjacent. Hence, (2).

25. Options (2) and (5) have two opposite faces as adjacent sides. In option (3), the orientation of two Ds with respect to each other is wrong. In option (4), the position of angles with respect to the square is incorrect. Hence, (1).

26. Options (4) and (5) have two opposite faces as adjacent sides. In option (1), orientation of ⊔ is wrong with respect to the pentagon and the arrow and in option (3), the element S is incorrect. Hence, (2).

27. Options (1) and (4) have two opposite faces as adjacent sides. In option (2), orientation of ✶ with respect to  is incorrect, while in option (5), position of C with respect to is incorrect. Hence, (3).

28. Options (2) and (3) have two opposite faces as adjacent sides. In options (1), orientation of shaded sector with respect to × is incorrect. In option (5), orientation of A with respect to # is incorrect. Hence, (4).

29. Options (2) and (4) have two opposite faces as adjacent sides. In option (1), orientation of E with respect to Δ is incorrect, while in option (3), orientation of ! with respect to E is incorrect. Hence, (5).