

Prime CAT 06 2022 DILR

Directions for questions 1 to 6: Answer the questions on the basis of the information given below.

Applications were received from a certain category of people for the construction of free toilets at the household level in the concerned government office. Every accepted application accounts for the construction of one toilet. The toilets for the approved applications were constructed over the next two months. Application received for toilet in a particular month can be completed in the next month (2nd month) or the month after that (3rd month). For example, if an application was received in September, it may be completed in October or November. The remaining applications were rejected as they did not fall under the category and were communicated to the applicants in the 3rd month.

The table below provides details about the construction of toilets in the last seven months of a financial year. The first column gives the month; the second gives the cumulative number of applications received up to that month. The third column shows the number of toilets completed in that month. The last column gives the cumulative number of rejected applications that were communicated to the applicants up to that month.

It is known that the number of applications approved for toilets in July, August and September which were completed in the 3rd month were 6, 8 and 9 respectively.

Month	Cumulative no. of Applications Received	No. of Toilets completed in the month	Cumulative No. of Rejected Applications Communicated
September	104	9	61
October	139	23	62
November	167	29	64
December	186	13	75
January	202	12	87
February	211	11	93
March	216	16	97

Q 1. In which of the following months the maximum number of applications was received?

- 1) August
 - 2) September
 - 3) October
 - 4) November
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Q 2. What was the absolute difference between the number of applications received in August and September?

Q 3. How many rejected applications were communicated to the applicants from October to March?

Q 4. In which of the following months, the smallest fraction of applications received were accepted?

- 1) October
 - 2) November
 - 3) December
 - 4) January
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Q 5. Let the number of toilets completed in the 2nd month be x and the number of toilets completed in the 3rd month be y . Then, which of the following months had the highest ratio of $x : y$ for applications accepted in that month?

- 1) December
 - 2) January
 - 3) October
 - 4) November
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Q 6. If the average cost per toilet was Rs 12,000, then find the total cost (in Rs. lakh) of toilets completed in the 2nd month of applications received from October to January.

- 1) 4.44
 - 2) 5.88
 - 3) 6.24
 - 4) 4.08
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Directions for question 7 to 10: Answer the questions on the basis of the information given below.

In the Delhi exhibition section of Annual trade Fair, 9 sq. m of stall is registered by the traders. There are two types of traders – A and B, wherein A register a single space of 9 sq. m and B register double space of 9 sq. m each adjacent to each other. Also, if A pays 'x' amount of rent for a single space B pays double the amount. The amount of rent for A-traders is Rs. 12,500 and the entire amount was paid at the time of registration itself. A trader registers for the space online on the official website of Trade Fair wherein the floor plan is shown to the trader. The floor plan has spaces in a single row. Every unregistered space is represented by U.

For instance, suppose 5 traders numbered 1 through 5 registers online such that 1st, 3rd and 5th are A-traders and 2nd and 4th are B-traders. At this point, the registered space would be described by the sequence 1, 2, 3, 4, 5. If certain traders later cancel their registration due to covid their allotted spaces show 'U' and can be registered to other traders. For example, if trader's 2nd and 5th later vacate their spaces the spaces would now be sequences as 1, U, U, 3, 4. If A-trader (numbered 6th) arrives subsequently followed by a B-trader (numbered 7th), the section will have the sequence 1, 6, U, 3, 4, 7.

Q 7. Suppose nine traders register online, of which two cancelled their registration later. Also 4th trader is an A-trader and 7th trader is B-trader. Which of the following is a POSSIBLE current configuration of the spaces in the floor plan?

- 1) 1, 2, 3, 5, U, 6, 9, U, 8

- 2) U, 2, 3, 7, 5, 6, 8, 9
 - 3) 1, 2, 3, 6, U, 7, 8, 9
 - 4) 9, 2, 3, U, 5, 6, 7, 8
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Q 8. Suppose that trader 4 is not the first trader to cancel the registration and that the sequence at a time between the registration of trader 7 and 8 is U, 7, 3, 6, 5. Then which of the following statements **MUST** be false?

- 1) Trader 2 is an A-trader.
 - 2) Trader 7 is an A-trader.
 - 3) Trader 4 is a B-trader.
 - 4) Trader 6 is an A-trader.
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Q 9. Initially 4 traders 1 through 4 registers online among which 1st and 4th traders are B-traders while 2nd and 3rd are A-traders. Later, trader 1 cancels the registration, followed by the registration of trader 5 (A-trader) and trader 6 (B-trader). Trader 4 then cancels the registration. Then trader 7 (B-trader) and 8 (A-trader) registers. At this moment, which among the following is the amount (in Rs.) the traders whose space adjacent to the trader 3 paid while registration?

- 1) 12,500
 - 2) 25,000
 - 3) 37,500
 - 4) Cannot be determined
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Q 10. Any trader who cancels their registration gets 50% of refund of the initial amount paid. Suppose the sequence of spaces allotted at some point of time is 4, 5, 6, U, 3. Then what could be the maximum amount of rent collected by the trade fair management from these traders?

Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

There is a game show for budding entrepreneurs, called Shark Tank, where there is a panel consisting of five big businessmen, who are called Sharks - S1, S2, S3, S4 and S5. These sharks are from different sectors - Agriculture, Beauty, Banking, Infrastructure and IT, not necessarily in the same order. There are 12 contestants - C1, C2, ..., C12 - who present their business plans in front of the sharks. If one or more of the sharks like the plan, they make investments in return for some equity in the business. In layman terms equity can be defined as a fraction of the business that is given away in return for the investment. If none of the sharks like the business plan, then it is rejected. Each investment is of Rs.1 crore. Some other information is given below:

- (i) S4 invests Rs.6 crore in all, which includes the proposals of C1, C5 and C6 whereas S5, who is from the Banking sector, invests Rs.5 crore in all, which includes C3 and C9.
- (ii) All the sharks reject the proposals presented by C2, C4, C7, C10 and C11 whereas all the sharks invest in the proposal presented by C8.
- (iii) S2, who is from Agriculture, invests a total of Rs.4 crore, but not in the proposal of C9. Shark S3, who is neither from Infrastructure nor from the Beauty sector, invests in the proposals of C3 and C9 but does not invest in the proposals of C6 and C12.
- (iv) S1 does not invest in the proposals of C5 and C9. The plan presented by C1 is approved only by sharks from Beauty and

Infrastructure.

(v) Four sharks invest in the proposals presented by C5 and C12 whereas three sharks invest in the business plans of C6 and C9, out of which only one investor is common.

(vi) The total investments in the proposals of C8 and C12 was for equities of 10% and 2% respectively. At the end of the financial year C8 gave a return of 20% on the investment whereas C12 gave a return of 35% on the investment.

Q 11. If exactly two business proposals received investments of Rs.2 crore each, then which of the following is true?

- 1) S1 did not invest in C3.
 - 2) S2 did not invest in C5.
 - 3) S2 invests in C3 and C6.
 - 4) Three investors are common for C3 and C12.
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Q 12. If C9 receives the investment made by the sharks in return for 25% equity. What is the value of his business (in Rs. crore)?

Q 13. Among those businesses in which S2 and S5 invested together, in how many did S3 also invest?

- 1) 4
 - 2) 3
 - 3) 2
 - 4) 1
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Q 14. Which of these sharks do C1, C6 and C9 have in common?

- 1) Banking
 - 2) Beauty
 - 3) Infrastructure
 - 4) Either (2) or (3)
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Q 15. What was the share of the total return (in Rs. lakh) received by the Shark from the Agriculture sector from investments made in C8 and C12 after a year?

Q 16. What is the ratio of the total returns received by all the sharks who invested in the businesses of C8 and C12?

- 1) 5 : 9

- 2) 14 : 5
3) 5 : 7
4) 7 : 8

Directions for questions 17 to 22: Answer the questions on the basis of the information given below.

A dairy products company purchases milk from local farms and this is then processed before being sold to retail outlets. The quality manager at the company uses a lactometer, that is a simple device, to measure the purity of milk. Strict quality checks take place at the sales counter and the milk is sold to the customers only when the lactometer shows the purity of the milk to be 80% or more.

The table given below shows the purity of milk sourced from the 6 vendors as measured by the lactometer.

Gopal	Mukund	Yadav	Radhey	Nandlal	Krishna
75%	90%	100%	95%	80%	60%

Q 17. What is the maximum quantity of milk from Gopal's farm that can be mixed with a mixture containing equal quantities of milk from Nandlal's and Mukund's farms, to fulfil an order of 20 litres of milk at a tea stall?

- 1) 15 litres
2) 5 litres
3) 7.5 litres
4) 10 litres

Q 18. Which of the following mixtures will meet the quality requirements of sales at the company?

- I. The milk of the farms of Mukund, Radhe and Krishna are in the ratio 1 : 2 : 2 respectively.
II. The milk of the farms of Gopal, Krishna and Nandlal are in the ratio 2 : 2 : 1 respectively.
III. The milk of the farms of Radhey, Gopal and Mukund are in the ratio 1 : 1 : 2 respectively.

- 1) II only
2) III only
3) Both I and III
4) Both I and II

Q 19. Four similar cans of milk were left at the collection point out of which at least one is from Yadav's farm and the remaining are from Krishna's farm. If milk from all the four cans is mixed, then what is the probability that it will meet the purity requirement?

- 1) $\frac{2}{3}$
2) $\frac{3}{4}$
3) $\frac{1}{4}$
4) $\frac{1}{3}$

Q 20. There are 8 cans of milk from the above mentioned farms such that there is at least one can from each farm. The milk from all 8 cans is mixed. There is a specific buyer who demands a minimum of 85% purity of milk, then in which of the following cases will the mixture meet the quality requirement of that buyer?

- 1) There are 2 cans each from Krishna and Gopal.

- 2) There are 2 cans each from Yadav and Radhey.
 - 3) There are 3 cans from Gopal.
 - 4) There are 2 cans each from Mukund and Nandlal.
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