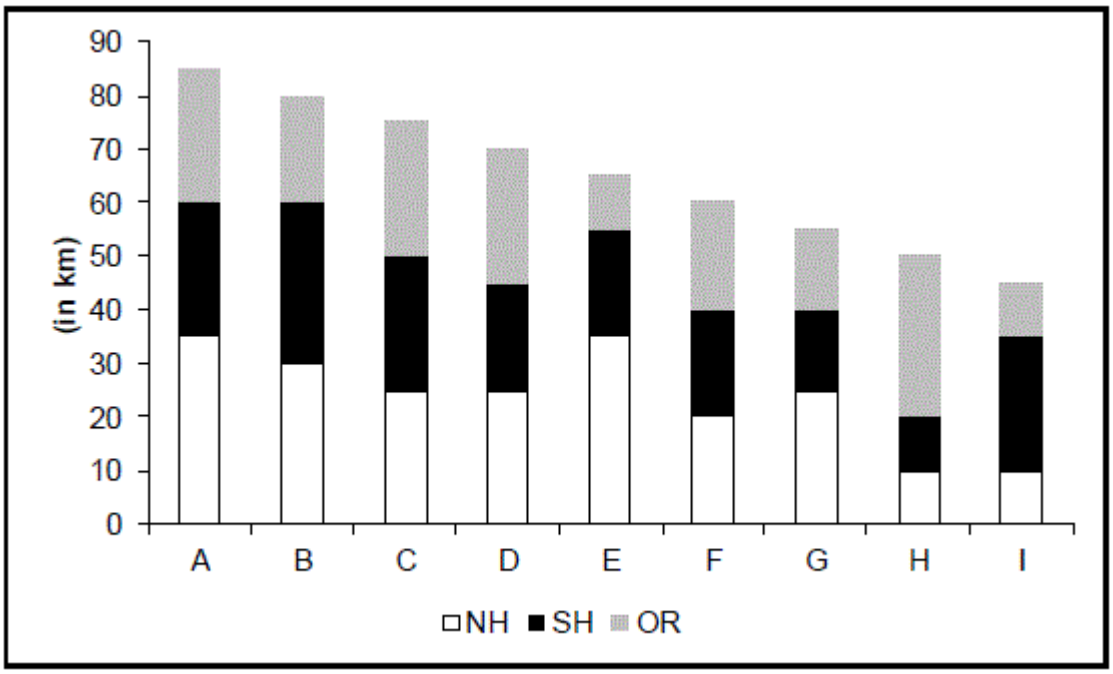
Directions for questions 1 to 4: Answer the questions on the basis of the information given below.

The Ministry of Road Transport and Highways was analyzing the length (in km) of roads constructed per day by ten road construction companies in the last financial year. Roads were classified into three categories – National Highways (NH), State Highways (SH) and Other Roads (OR) as shown in the bar graph below. These nine belong to the top ten companies in terms of total length (in km) of roads construction per day. The remaining company (in the top ten) is J, which constructed National Highways of 29 km per day.



The table below shows the ranks of the above ten companies among all road construction companies in India in terms of total length (in km) of roads constructed per day in each of the three categories of roads.

The company(ies) constructing the largest length of road in a particular category is ranked 1 in that category, the company(ies) constructing second largest length of road is ranked 2 and so on. In case two or more companies construct equal lengths of roads in the same category, all those companies get an equal rank in that category.

For example, let us say that in a particular category there are only 4 companies; companies X and Y constructed equal lengths of roads and companies P and Q constructed roads of length larger than that of both X and Y, then

Case 1: If P = Q > X = Y, then Both P and Q will be ranked 1 and both X and Y will be ranked 2.

Case 2: If P > Q > X = Y, then P will be ranked 1, Q will be ranked 2, and both X and Y will be ranked 3.

Missing ranks in the table are denoted by '–'.

	NH	SH	OR
A	-	-	-
C	-	2	-
D	4	-	-
B	2	-	-
F	9	-	3
G	-	12	8
E	1	7	13
J	-	15	16
I	-	-	-
H	14	17	-

Q 1. Absolute difference between the ranks of companies A and G in the 'National Highways' category of roads is _____.

Q 2. The sum of ranks of company I in all the three categories of roads is _____.

Q 3. Which of the following statements is/are true about the ranks of companies?
I. The rank of company D is 5 in the 'State Highways' category of roads.
II. The rank of company B is 3 in the 'Other Roads' category of roads.
III. The rank of company C is 4 in the 'National Highways' category of roads.

1) II only

2) III only

3) Both II & III

4) All I, II & III

Q 4. Which of the following group of companies has the highest sum of ranks in all the three categories of roads?

1) A, D, J

2) B, C, H

3) A, E, F

4) B, D, G

Directions for questions 5 to 10: Answer the questions on the basis of the information given below.

Fifteen persons - with names in alphabetical order from A to O - work in ten different projects - P1, P2, …, P10 - such that each project is completed by three persons and each person works in not more than two projects. The duration of each project is two months and there are fifty working days during these two months, which is the same for all. The projects P1 to P10 begin in consecutive months of the year, from January to October. There is no new project in December. None of them worked in two consecutive projects, (for example, person X cannot work in both P1 and P2). {A, B, C, D, E}, {F, G, H, I, J} and {K, L, M, N, O} are three ordered groups of persons such that the persons in each group can complete {1, 2, 3, 4, 5} units of work in a day respectively.
Further, it is also known that:
(i) A worked with B on a project in June and without B in November.
(ii) K was working from May to August but never with N.
(iii) N worked with J and I in January and June respectively.
(iv) O worked in P3 with G and in P9 with B and I.
(v) F worked only after July whereas H and C worked together in both projects but only before July.
(vi) The project numbers of both the projects that L worked on were perfect cubes.

(vii) D, K and G worked together on a project. The first and last projects had a common person.
(viii) The project numbers of both the projects that E worked on were multiples of 3 whereas those that M worked on were multiples of 4.

Q 5. Which of the following persons was common in P2 and P7?

1) D

2) K

3) C

4) H

Q 6. Among these ten projects which one had the minimum work units?

1) P10

2) P04

3) P08

4) P05

Q 7. The total units of work of P10 were approximately what percent more or less than the total units of work of P6?

1) 85.68%

2) 53.83%

3) 46.14%

4) 36.24%

Q 8. Which of the following persons did not work continuously for four months?

1) H

2) M

3) K

4) C

Q 9. Which of the following pairs of projects had the same amount of work?
I. P01 and P09
II. P07 and P10
III. P04 and P08

1) Only I

2) Both II and III

3) Only III

4) Both I and II

Q 10. Owing to some change in the project work some teams were reshuffled. So A and I replaced each other in their projects. Which of the projects now have the maximum amount of work?

1) P03

2) P05

3) P06

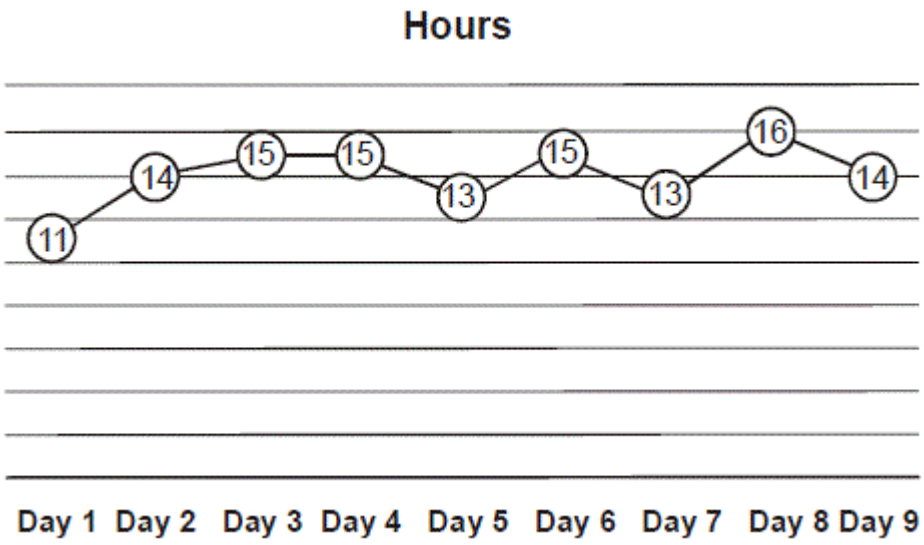
4) P09

Directions for questions 11 to 14: Answer the questions on the basis of the information given below.

John, a delivery guy hired by Courier-Go company worked every day without any off in 2020 when lockdown was initiated during Covid Peak. He works in an 8-hour shift. During any day, John gets an incentive if he delivers a courier to a far distanced location A, B, C, D and E. The table below gives the additional hour and additional pay if John delivers to the distanced location A, B, C, D and E.

Location	A	B	C	D	E
Additional hour	1	2	3	4	5
Additional Pay (%)	5	8	12	15	18

On any day, if he delivers to more than one location mentioned above, he works the additional hours and get the cumulative additional payment corresponding to all the locations individually. For example, if he has to deliver to locations A and B, he has to work for 3 additional hours and will get 13% of additional pay for that day.
The line graph given below provides the number of hours John worked for nine days from Day 1 through Day 9. Further, it is known that he did not deliver the courier to same location on any two consecutive days during the nine days.



Q 11. In how many instances during the 9 days did John deliver to location C following the day he delivered to location E?

Q 12. On which of the following days did John deliver to location A?

1) Day 1

2) Day 3

3) Day 2

4) Day 9

Q 13. If John's per day fixed earning for an 8-hour shift was Rs. 1,200, then total amount (in Rs.) earned by John on Day 2 and Day 7 is:

Q 14. If John's per day fixed earning for an 8-hour shift was Rs. 1,200, then the sequence of per day earnings of - Day 3, Day 4, Day 8, Day 9 - in decreasing order is:

1) Day 8, Day 4, Day 3, Day 9

2) Day 3, Day 8, Day 4, Day 9

3) Day 8, Day 3, Day 4, Day 9

4) Day 8, Day 3, Day 9, Day 4

Directions for questions 15 to 20: Answer the questions on the basis of the information given below.

Five companies - A, B, C, D and E - signed contracts with five cricket players Dhoni, Jasprit, Rohit, Shikhar, and Virat between 2009 and 2020 to advertise their products. The contracts were signed either for one year or for several consecutive years. No company had more than one contract with the same player. However, in a year, a company could sign a contract with more than one player, and a player could sign a contract with more than one company. Over this period of 12 years, the companies signed two contracts with two of these players, and each player signed two contracts with two of these companies.
The following facts are also known about these contracts.
(i) There were five contracts of more than a year. Company E had a contract for 8 consecutive years, C had a contract for 5 consecutive years, B had a contract for 4 consecutive years, and A and D each had a contract for 3 consecutive years. The other five contracts were one-year contracts.
(ii) Jasprit had contracts only in 2013. Shikhar had contracts only in 2011 and 2020. Dhoni had no contract in 2014 and 2017.
(iii) Rohit had at least one contract every year. Virat had one or more contracts in every year up to 2015, but no contracts in any year after that.
(iv) There were six contracts in 2013. Company C had one or more contracts in 2013. Companies A and E each had exactly one contract in 2016.
(v) Companies A and E had no contract in 2009 and 2017 respectively. Companies C and E had their one year contracts in the same year.

Q 15. In how many years only 2 contracts were signed by the companies during the given period?

Q 16. The number of different companies that signed contracts in 2011 was _____.

1) 2

2) 3

3) 4

4) Either (2) or (3)

Q 17. Which of the following Statement(s) is/are correct?
I. Company A did not sign more than one contract in the same year.
II. In exactly three years only one contract was signed.

1) I only

2) II only

3) Both I & II

4) Neither I nor II

Q 18. In which of the following years were there more than two contracts?

1) 2014

2) 2019

3) 2012

4) 2009

Q 19. Which of the following players had signed more than one contract in a year?

1) Dhoni

2) Rohit

3) Shikhar

4) Virat

Q 20. Which of the following statements is true?

1) Company D had a contract with Dhoni in 2012.

2) Company C had a contract with Rohit in 2018.

3) Company A had a contract with Virat in 2010.

4) Company B had a contract with Rohit in 2016.
