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Study Notes On Line Graph

If we look into the syllabus of CSIR NET, then Data Interpretation plays a very important role in the Quantitative Aptitude section. So for this we have to understand exactly what is Data Interpretation.

Interpretation is the process of making sense of numerical data that has been collected, analyzed, and presented. Interpreting data is a very important and critical thinking skill that helps you to comprehend pie charts, bar graphs, Line Graph and tables.

In Data Interpretation the data is displayed in various form like table format, bar format, Pie chart, Line graph, etc. So Line graph are one of them.

In Line Graph the data is represented in the form of straight or curve lines that connect various data values. Line graphs are used to convey same things as any other graph and hence can be used inter-changeably. Because sometimes mixed types of question comes in the examination where a line graph can be generated by joining the tip of the bar graph.

A Line Graph is said to be the modified version of Bar Graph representation. On connecting the upper points of two head of Bar Graph we get a line and on further repeating this procedure with other Bars we get a Line Graph representation.

Line Graphs are more obvious, accurate than any other graph format. The diagrams can be effectively used for further statistical analysis and to study slopes, rates of change and for future inference. They can be used to study the relationship & comparison between the various data.
Questions pertaining to percentage change and growth rates become easier to solve with the help of line graphs.

A modified version of Bar Graph representation is said to be a Line Graph. On connecting the upper points of two adjacent Bars of a Bar Graph we get a line and on further repeating this procedure with other Bars we get a Line Graph representation.

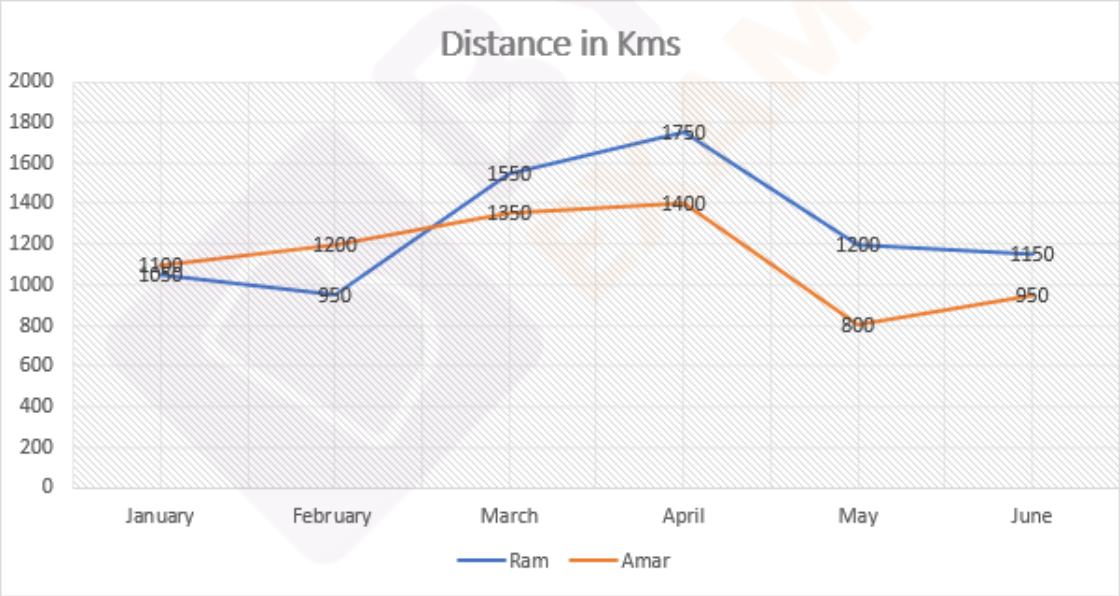
Also for Line Graph question, one must be aware of the following arithmetical topic-

1. Ratios
2. Averages
3. Percentages

Check out some Line graph question based on new pattern for the upcoming CSIR-NET Exam-

1. Two delivery boys Ram and Amar use their scooters to deliver pizza to different places in city Delhi. The line graph given below represents the distance travelled by them in months from January to June.

With the help of given data answer the following questions:



The distance travelled by Ram in month of Feb and May is what percent less/more than distance travelled by Amar in Feb and May?

A. 7.5% less

B. 9% more
C. 7.5% more
D. 10% more

Ans. C

Sol.

The distance travelled by Ram in February = 950 km

Distance travelled by him in month of May = 1200

Total distance travelled by Ram in Feb and May = 950+1200 = 2150 km

The distance travelled by Amar in February = 1200 km

Distance travelled by him in month of May = 800

Total distance travelled by Amar in Feb and May = 1200+800 = 2000 km

$= \frac{2150-2000}{2000} \times 100 = 7.5\%$

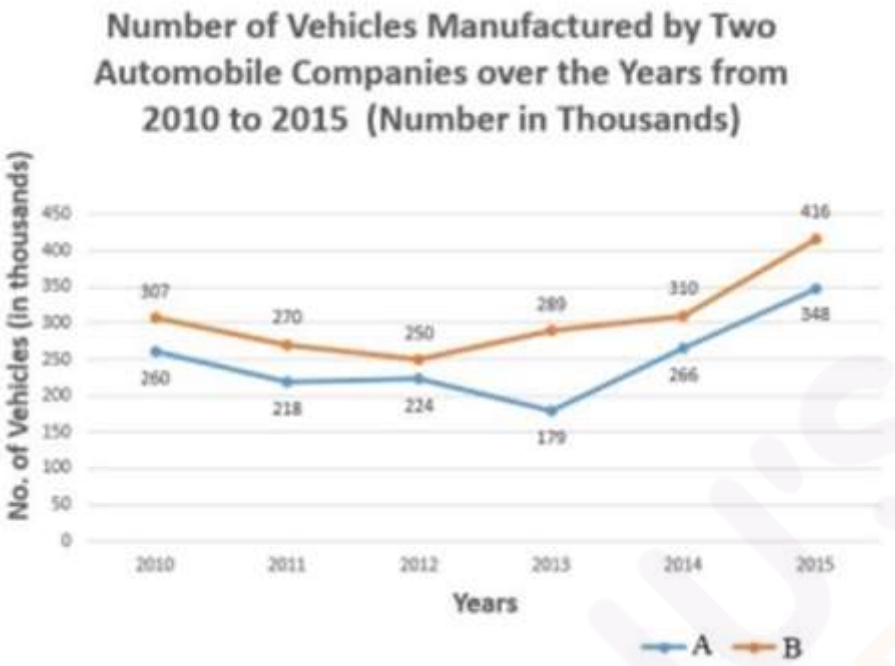
The distance travelled by Ram in Feb and May is 7.5% more than distance travelled by Amar in Feb and May.

Hence, option (c) is correct.

2.Study the line graph and answer the question that follows.

The line graph represents the number of vehicles (in thousands) manufactured by two automobile companies A and B over the years from 2010 to 2015. The X-axis represents the years and the Y-axis represents number of vehicles in thousands.

(The data shown here is only for mathematical exercise. They do not represent the actual figures of the country.)



Company B is projecting an increase hi the number of vehicles to be manufactured in 2016 by 70% with respect to its average number of vehicles from 2010 to 2015. What should be the approximate percentage increase in the number of vehicles (in thousands) to be manufactured by Company A in 2016 with respect to the number of vehicles in 2015, so that it is at par with Company B?

A. 57
B. 45
C. 50
D. 42

Ans. C

Sol. Average number of vehicles manufactured by company B from 2010 to 2015 =

$$\frac{307+270+250+289+310+416}{6}=\frac{1842}{6}=307$$

It is given that company B is projecting an increase in the number of vehicles to be manufactured in 2016 by 70% with respect to its average number of vehicles from 2010 to 2015.

Number of vehicles to be manufactured in 2016 by company B =

$$307+307\times\frac{70}{100}=307+214.9=521.9\simeq 522$$

Number of vehicles manufactured by company A in 2015 = 348

As it is given that number of vehicles produced by company A in 2016 should be equal to number of vehicles produced by company B in 2016.

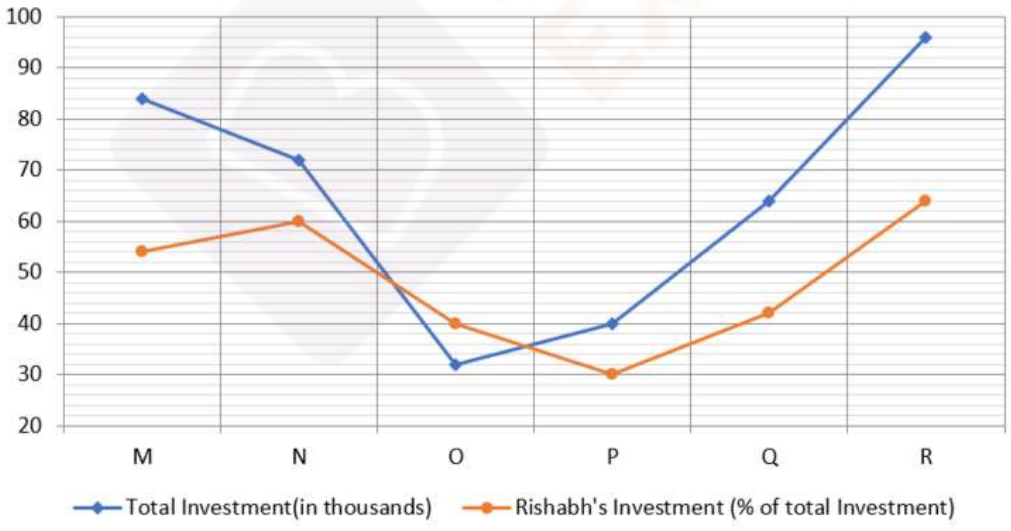
Therefore, Number of vehicles manufactured by company A in 2016 = 522

Required percentage = $\frac{522-348}{348}\times 100=\frac{174}{348}\times 100=50\%$

Hence the correct option is (C)

3.Study the graph to answer the questions.

Total investment (in Rs. thousand) of Kanika and Rishabh in 6 schemes (M, N, O, P, Q and R)



On the investment in the scheme M at a certain simple rate of interest (per cent per annum), if the difference between the interest earned by Kanika and Rishabh after 4 yr is Rs. 4435.20, what is the rate of interest (per cent per annum)?
A. 14.5%
B. 15%
C. 15.5%
D. 16%
E. 16.5%

Ans. E

Sol.

Amount invested by Rishabh in scheme M= 54% of 84000 = Rs. 45360

∴ Amount invested by Kanika in scheme M = 84000 – 45360 = Rs. 38640

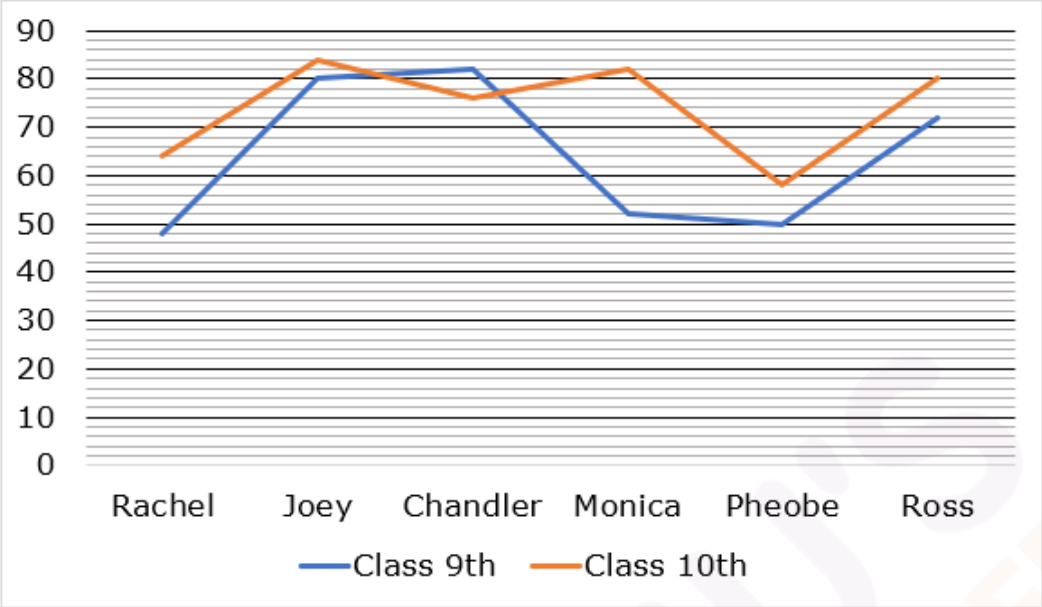
Let the required rate be r % per annum. Then,

$(45360 \times r \times 4)/100 – (38640 \times r \times 4)/100 = 4435.20$

$\Rightarrow 6720 \times r \times 4 = 443520 \Rightarrow r = 16.5\%$

4.Study the data carefully and answer the questions that follow.

The line-graph given below shows the weight (in kilogram) of 6 students (Rachel, Joey, Chandler, Monica, Phoebe and Ross) in classes 9^{th} and 10^{th}.



Find the difference between the average weight of all students in class 9th and 10th.

A. 22 kg
B. 8 kg
C. 10 kg
D. 28 kg
E. 32 kg

Ans. C

Sol.

Average weight of all the students of class 9^{th} = (48 + 80 + 82 + 52 + 50 + 72) ÷ 6 = $\frac{384}{6}$ = 64 kg

Average weight of all the students of class 10^{th} = (64 + 84 + 76 + 82 + 58 + 80) ÷ 6 = $\frac{444}{6}$ = 74 kg

Required difference = 74 – 64 = 10 kg

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