<u>Bank Probationery Officer</u>

<u>Quantitative Aptitude</u>

DATA INTERPRETATION

Data Interpretation is one of the easy sections of one day competitive Examinations. It is an extension of Mathematical skill and accuracy. Data interpretation is nothing but drawing conclusions and inferences from a comprehensive data presented numerically in tabular form by means of an illustration, viz. Graphs, Pie Chart etc. Thus the act of organising and interpreting data to get meaningful information is Data Interpretation.

A good grasp of basic geometric as well as arithmetic formulae is must to score high in this section. Familiarity with graphical representation of data like Venn diagrams, graphs, pie charts, histogram, polygon etc. should be thought. Once the data are grasped well, questions based on tables and graphs take little time.

In some competitive examinations data are presented in more than one table or graphs. The aim is to test not only quantitative skill but also relative, comparative and analytical ability. The crux of the matter is to find a relationship between the two tables or graphs before attempting the questions.

Some Useful tips:

1. Data Interpretation questions are based on information given in tables and graphs. These questions test your ability to interpret the information presented and to select the appropriate data for answering a question.

2. Get a general picture of the information before reading the question. Read the given titles carefully and try to understand its nature.

3. Avoid lengthy calculations generally, data interpretation questions do not require to do extensive calculations and computations. Most questions simply require reading the data correctly and carefully and putting them to use directly with common sense.

4. Breakdown lengthy questions into smaller parts and eliminate impossible choices.

5. Use only the information given and your knowledge of everyday facts, such as the number of hours in a day, to answer the questions based on tables and graphs.

6. Answer the questions asked and not what you think the questions should be.

7. Be careful while dealing with units.

8. To make reading easier and to avoid errors observe graphs keeping them straight.

9. Be prepared to apply basic mathematical rules, principles and formulae.

10. Since one of the major benefits of graphs and tables is that they present data in a form that enables you to readily make comparisons, use this visual attribute of graphs and tables to help you answer the questions. Where possible, use your eyes instead of your computational skills.

Tables

Tables are often used in reports, magazines and newspaper to present a set of numerical facts. They enable the reader to make comparisons and to draw quick conclusions. It is one of the easiest and most accurate ways of presenting data. They require much closer reading than graphs of charts and hence are difficult and time consuming to interpret.

One of the main purposes of tables is to make complicated information easier to understand. The advantage of presenting data in a table is that one can see the information at a glance.

While answering questions based on

tables, carefully read the table title and the column headings. The title of the table gives you a general idea of the type and often the purpose of the information presented. The column headings tell you the specific kind of information given in that column. Both the table title and the column headings are usually very straight forward.

Graphs

There may be four types of graphs.

1) **Circle Graphs:** Circle graphs are used to show how various sectors are in the whole. Circle graphs are sometimes called Pie Charts. Circle graphs usually give the percent that each sector receives In such representation the total quantity in question is distributed over a total angle of 360°.

   While using circle graphs to find ratios of various sectors, don't find the amounts each sector received and then the ratio of the amounts. Find the ratio of the percents, which is much quicker.

2) **Line Graphs:** Line graphs are used to show how a quantity changes continuously. If the line goes up, the quantity is increasing; if the line goes down, the quantity is decreasing; if the line is horizontal, the quantity is not changing.

3) **Bar Graphs:** Given quantities can be compared by the height or length of a bar graph. A bar graph can have either vertical or horizontal bars. You can compare different quantities or the same quantity at different times. In bar graph the data is discrete. Presentation of data in this form makes evaluation of parameters comparatively very easy.

4) **Cumulative Graphs :** You can compare several catagories by a graph of the cumulative type. These are usually bar or line graphs where the height of the bar or line is divided up proportionally among different quantities.

SOLVED EXAMPLES

I. Directions (Qs. 1-5) study the following table and answer the questions given below it.

Production of sugar by six major production units of India in Million Tonnes

PRODUCTION UNITS						
Month	A	B	C	D	E	F
April	310	180	169	137	140	120
May	318	179	177	162	140	122
June	320	160	188	173	135	130
July	326	167	187	180	146	130
August	327	150	185	178	145	128

1. In which month the unit B has a contribution of approximately 15% in the total sugar production?

   1) August   2) June

   3) July   4) April

2. Which of the following units shows continuous increase in production of sugar over months?

   1) A   2) B

   3) C   4) D

3. In the case of Unit E, in which of the following pairs of months the production of sugar was equal?

   1) April & June   2) June & July

   3) July & August   4) April & May

4. In the month of June, how many units have a share of more than 25% of the total production of sugar?

   1) one   2) Three

   3) Two   4) Four

5. What was approximate percentage decrease in sugar production of unit B in June as compared to April?

   1) 8%   2) 10%

   3) 15%   4) 18%

Ans:

1. (3) Total production in April

    = 310+180+169+137+140+120=1056

    15% of 1056 = $\frac{15}{100}$ x 1056 = 158.4

    Total Production in June

    = 320+160+188+173+135+130

    = 1106

    15% 1106 = $\frac{15}{100}$ x 1106 = 165.9

    Total production in July

    = 326+167+187+146+130=1136

    15% of 1136 = $\frac{15}{100}$ x 1136 = 170.4

    Total Production in August

    = 327+150+185+178+145+128= 1113

    15% of 1113 = $\frac{15}{100}$ x 1113 = 166.95 ≈ 167

    ie, in Month July, the Unit B has a contribution of approximately 15% in the total sugar production.

2. (1) Unit A shows continuous increase in production of sugar over months.

3. (4) In Unit E, the pair of months that shows equal sugar production is April and May.

4. (1) Total Production in June = 320+160+188+173+135+130 = 1106

    25% of 1106= $\frac{25}{100}$ x 1106 = 276.5 units

    ie, Unit A shows more than 25% of the total production of sugar in the month June.
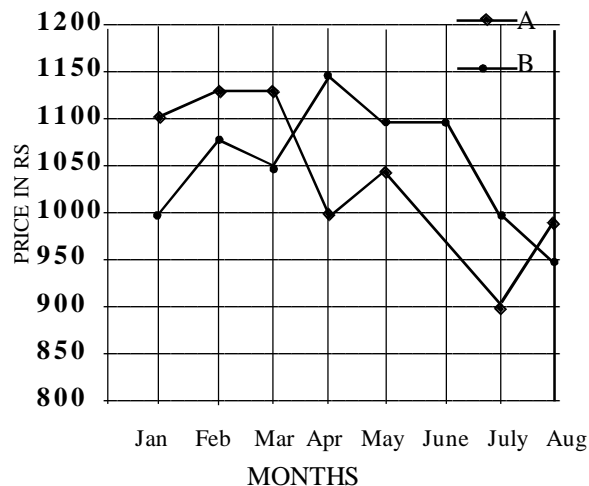
5. (2) In unit B, the production in June = 160 the production in April = 180 units

    Decrease in percentage

    = $\left(\frac{180-160}{180} \right) 100 = \frac{20}{180}$ x 100

    = 11.11% ≈ 10%

II. **Directions** (Qs. 6-10): Study the following graph carefully and answer the questions given below it:

MONTHS

6) What was the price difference between commodity A and B in the month of April?

    1) 250   2) 150

    3) 100   4) 90

7. What was the difference in average price between commodity A and B from April to August?

    1) 86   2) 75

    3) 95   4) 85

8. In which of the following pairs of months was the price of commodity A same?

    1) January - March 2) May-June

    3) April- August   4) July-August

9. What was the approximate percentage decrease in the price of commodity A from March to April?

    1) 1   2) 9   3) 14   4) 12

10. What was the percentage increase in price of commodity B from January to April?

    1) 15   2) 20   3) 17   4) 10

Ans 6 (2).The price of commodity A in April

$$= 1000$$

The price of commodity B in April

$$= 1150$$

Difference = 1150 - 1000 = 150

7) (b). Average price of commodity A from April to August

$$= \frac{1000 + 1050 + 975 + 900 + 1000}{5}$$

$$= \frac{4925}{5} = 985$$

Average price of commodity B from April to August

$$= \frac{1150 + 1100 + 1100 + 1000 + 950}{5}$$

$$= \frac{5300}{5} = 1060$$

Difference = 1060 - 985 = 75

8)(3) Price of commodity A in April = 1000

Price of commodity A in August = 1000

Therefore, in April - August the price of commodity A was same.

9)(4) Price of commodity A in March = 1125

Price of commodity A in April = 1000

Decrease

$$= \left(\frac{1125 - 1000}{1125} \right) 100 = \frac{125}{1125} \times 100$$
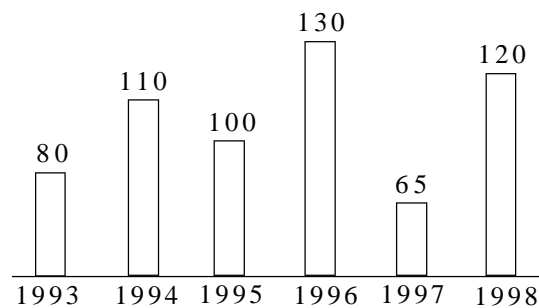
$$= 11.11\% \approx 12\%$$

10)(1) Price of commodity B in January= 1000
Price of commodity B in April = 1150

$$\text{Increase} = \left(\frac{1150 - 1000}{1000} \right) 100$$

$$= \frac{150 \times 100}{1000} = 15\%$$

III Directions (11-15): Study the following graph carefully and answer the questions given below it.

PRODUCTION OF FOODGRAIN OVER THE YEARS (1000 TONNES)

11) In the case of how many years was the production below the average production of the given years?

    1) one   2) two

    3) three   4) four

12) What was the percentage drop in production from 1996 to 1997?

    1) 100   2) 50

    3) 65   4) 40

13) In which year was the production 50% of the total production in 1993 and 1998 together

    1) 1994   2) 1995

    3) 1996   4) 1997

14. If the production in 1999 will be above the average production of the given years, which of the following could be the minimum production for 1999?

    1) 105000   2) 120000

    3) 100900   4) 130000

15. What was the approximate percentage increase in production from 1993 to 1994

    1) 60   2) 40

    3) 110   4) 30

Ans:-

11.(3)   Average production

$$= \frac{80 + 110 + 100 + 130 + 65 + 120}{6}$$

$$= \frac{605}{6}$$

= 100.833 thousand tonnes

= 100900 tonnes

ie. production in 1993, 1995 and 1997 was below the average.

12.(2)   Production in 1996 = 130 thousand tonnes.

Production in 1997 = 65 thousand tonnes

$$\therefore \text{ decrease} = \left(\frac{130 - 65}{130}\right) 100$$

$$= \frac{65}{130} \times 100 = 50\%$$

13.(2). Total production in 1993 and 1998

= 80+120 = 200

$$50\% \text{ of } 200 = \frac{50}{100} \times 200 = 100$$

ie, the production in 1995 was 50% of the total production in 1993 and 1998.

14.(3).Average production = 100900 tonnes.

Therefore the minimum production in 1999 will be 100900 tonnes

15.(2). Production in 1993 = 80 thousand tonnes.
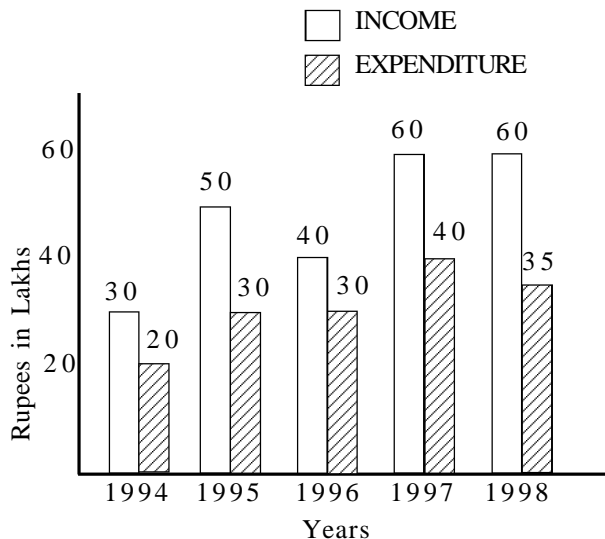
Production in 1994 = 110 thousand tonnes

Increase

$$= \left(\frac{110 - 80}{80}\right)100 = \frac{30}{80} \times 100 \approx 40\%$$

IV.   Directions (Qs. 16-20):- Study the following graph carefully and answer the questions given below it:

INCOME AND EXPENDITURE OF A COMPANY OVER THE YEARS

(In lakhs Rupees)

☐ INCOME

▨ EXPENDITURE

16. What was the difference in profit between 1995 and 1996?

1) Rs. 10 lakhs   2) Rs. 5 lakhs

3) Rs. 15 lakhs   4) No profit

17. In the case of how many years was the income more than the average income of the given years?

1) one   2) two

3) three   4) four

18. What was the percentage increase in expenditure from 1996 to 1997?

1) 10   2) $33\frac{1}{3}$

3) $66\frac{2}{3}$ 4) 20

19. The income in 1996 was equal to the expenditure of which of the following years?

1) 1994   2) 1995

3) 1997   4) 1998

20. In which of the following years was the profit the maximum?

 1) 1994 2) 1995
 3) 1996 4) 1998

Ans:-

16.(1). Profit in 1995 = 50-30=Rs. 20 lakhs

Profit in 1996 = 40-30 = Rs. 10 lakhs

Difference in profit=20-10=Rs. 10 lakhs

17.(3) Average income

$$= \frac{30+50+40+60+60}{5} = \frac{240}{5} = 48$$

Therefore in 1995, 1997 and 1998, the income is more than the average income

18.(2) Expenditure in 1996 = Rs. 30 lakh

Expenditure in 1997 = Rs. 40 lakh

Increase

$$= \left(\frac{40-30}{30}\right)100 = \frac{10}{30} \times 100 = 33\frac{1}{3}\%$$

19.(3) The income in 1996 was equal to the expenditure in 1997 ie Rs. 40 lakhs.

20.(4) The profit is maximum in the year 1998.

V. Directions (Qs. 21-25) The pie-chart drawn below shows the spendings of a country on various sports during a particular year. Study the pie-chart carefully and answer the questions given below it.

PERCENT OF MONEY SPENT ON VARIOUS SPORTS FOR ONE YEAR
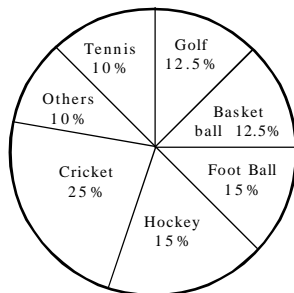
21. If the total amount spent on sports during the year was Rs. 15000000, the amount spent on cricket and hockey together was

 1) Rs. 2500000 2) Rs. 3750000
 3) Rs. 5000000 4) Rs. 6000000

22. Out of the following, the country spent the same amount on

 1) Hockey and Tennis
 2) Golf and foot ball
 3) Cricket and Foot ball
 4) Football and Hockey

23. Pie-chart shows that the most popular game of the country is (on the basis of money spent)

 1) Cricket 2) Foot ball
 3) Basket ball 4) Hockey

24. The ratio of the total amount spent on football to that spent on hockey is

 1) 1:15 2) 1:1
 3) 15:1 4) 3:20

25. If the total amount spent on sports during the year was Rs. 12000000, how much was spent on basket ball?

 1) Rs. 950000 2) Rs. 1000000
 3) Rs. 1200000 4) Rs. 1500000

Ans:-

21.(4) The amount spent on Cricket and Hockey

$$= \frac{15000000 \times 40}{100} = Rs. 6000000$$

22.(4) The country spent the same amount on football and hockey

23.(1) The most popular game is cricket

24.(2) The required ratio = 15:15 = 1:1

25.(4) The amount spent on basket ball

$$= \frac{12000000 \times 12.5}{100}$$

= Rs. 1500000