CHAPTER – 1
TABLES

Worked out Examples:

These questions are based on the following table, which gives the details of the sports liked by students in all the classes of a school.

The table gives the number of students in each class and the percentage of students in the class who like Cricket, Volleyball, Basketball and Football.

Class	Number of students	Cricket	Volleyball	Basketball	Football
6	120	60%	70%	50%	60%
7	140	50%	60%	60%	50%
8	160	40%	65%	55%	45%
9	180	65%	75%	65%	55%
10	240	70%	80%	75%	45%

1.01: How many students in the school like cricket?
(A) 436   (B) 432
(C) 491   (D) 511

Sol: Number of students who like Cricket
$$= \frac{60}{100}(120) + \frac{50}{100}(140) + \frac{40}{100}(160) + \frac{65}{100}(180) +$$
$$\frac{70}{100}(240) = 491 \qquad \text{Choice (C)}$$

1.02: By what percentage is the number of students who like Volleyball in class 6 more/less than those who like Basketball in class 10?
(A) 40% less   (B) 50% more
(C) 53.33% less   (D) 56.67% more

Sol: Number of students who like Volleyball in class
$$6 = \frac{70}{100}(120) = 84$$
Number of students who like Basketball in class
$$10 = \frac{75}{100}(240) = 180$$
84 is less than 180 by $\frac{180 - 84}{180}(100)$
$$= 53.33\% \qquad \text{Choice (C)}$$

1.03: The number of students who like Cricket in class 7 is what percentage of the number of students who like Football in class 8?
(A) 88%   (B) 93.5%
(C) 95.6%   (D) 97.2%

Sol: Number of students who like Cricket in class
$$7 = \frac{50}{100}(140) = 70$$
Number of students who like Football in class
$$8 = \frac{45}{100}(160) = 72$$
Required percentage $= \frac{70}{72} \times 100 = 97.2\%$
$$\text{Choice (D)}$$

1.04: In how many of the given classes can more than 90 students like all the four games?
(A) 4   (B) 3   (C) 1   (D) 2

Sol: In any class, the maximum value of the number of students who like all the four games would be the number of students who like the game liked by the least number of students.
In class 6, the percentage of students who like a game is the least for Basketball. Number of students who like basketball
$$= \frac{50}{100}(120) = 60 < 90$$
In class 7, the percentage of students who like a game is the least for cricket and football. Number of students who like cricket
$$= \frac{50}{100}(140) = 70 < 90$$
In class 8, the number of students who like a game is the least for cricket. Number of students who like cricket
$$= \frac{40}{100}(160) = 64 < 90$$
In class 9, the percentage of students who like a game is the least for Football. Number of students who like Football
$$= \frac{55}{100}(180) = 99 > 90$$
In class 10, the percentage of students who like a game is the least for Football. Number of students who like Football
$$= \frac{45}{100}(240) = 108 > 90$$
∴ In two classes, more than 90 students can like all the games. Choice (D)

1.05: What can be the maximum percentage of students in class 6 who do not like any of the given games?
(A) 40%   (B) 10%
(C) 50%   (D) 30%

Sol: In class 6, the maximum percentage of students who like a game = Percentage of students who like Volleyball i.e., 70%. Percentage of students who like at least one game would be minimum when all students who like other games are also the same ones who like Volleyball.
∴ Maximum percentage required
$$= 100 - 70 = 30\% \qquad \text{Choice (D)}$$

Directions for questions 1 to 5: These questions are based on the information given below.

Population and area of few states in the country

State	Total population (in lakhs)		Male population (in lakhs)		Rural population (%)		Area (in sq.km)
	2001	2006	2001	2006	2001	2006	
Uttar Pradesh	1660	1731	875	911	71	70	238576
Madhya Pradesh	603	674	314	350	72	71	308144
Andhra Pradesh	761	823	385	417	69	67	275068
Tamil Nadu	624	697	315	348	70	68	130058
Orissa	368	384	186	195	73	72	155707
Maharashtra	968	1013	504	527	68	66	307713
West Bengal	802	865	412	446	69	68	88752

1. In the year 2001, in which of the following states was the density of population the least?

   Density of population = $\dfrac{\text{Total Population}}{\text{Area}}$
   (A) Madhya Pradesh   (B) Andhra Pradesh
   (C) Orissa   (D) Maharashtra

2. If in 2006, 51% of the rural population in Orissa are males, then what is the number of females in the rural population?
   (A) 1,45,68,360   (B) 1,41,00,480
   (C) 1,37,00,640   (D) 1,35,47,520

3. What is the percentage increase in the female population in Uttar Pradesh from 2001 to 2006?
   (A) 4.5%   (B) 4.2%
   (C) 4.3%   (D) 4.0%

4. For which of the following states is the ratio of rural population in 2001 to that in 2006, the least?
   (A) Madhya Pradesh   (B) Orissa
   (C) Maharashtra   (D) Andhra Pradesh

5. For the year 2006, in how many of the given states is the male population more than the average male population in that year?
   (A) 1   (B) 2
   (C) 3   (D) 4

Directions for questions 6 to 10: These questions are based on the information given below.

These questions are based on the following table which represents percentage of students of six schools, who passed in the annual exams in the year 1999-2000.

School	Percentage of students who passed
A	48
B	34
C	56
D	30
E	45
F	58

6. What is the total number of students who did not pass the exams in schools B and C together, if 1100 students wrote the exams in each of schools B and C?
   (A) 1205   (B) 1210
   (C) 1130   (D) 1195

7. If the ratio of the number of students who wrote the exams in schools A and F is 8 : 13, then what is the ratio of the number of students in A and F who did not pass?
   (A) 23 : 16   (B) 21 : 23
   (C) 16 : 21   (D) 17 : 21

8. If in school D, the number of students who appeared for the exams in 1999-2000 is 20% more than that in the previous year and the number of students who passed in 1999-2000 is also 20% more than that in the previous year, then what is the ratio of the number of students who failed in 1998-1999 to that in 1999-2000?
   (A) 5 : 6   (B) 5 : 7
   (C) 7 : 6   (D) 4 : 3

9. If 140 students failed in school D in 1999-2000, then how many students appeared for the exams in the school that year?
   (A) 170
   (B) 180
   (C) 160
   (D) None of these

10. If the number of students who appeared for the exam in schools A and E forms 20% and 25% respectively of the total students who appeared for the exams in the given six schools, then what is the approximate ratio of the students who failed in schools A and E?
    (A) 2 : 3   (B) 4 : 5
    (C) 3 : 4   (D) 1 : 1

Four parties P, Q, R and S contested in the Lok Sabha elections in each of the years 1952, 1957, 1962, 1967 and 1972. For every election from 1957 the newspaper "Herald" had estimated the number of seats expected to be won by these parties in four states – Madhya Pradesh, Maharashtra, Bihar and Uttar Pradesh.

		1957		1962		1967		1972	
		X	Y	X	Y	X	Y	X	Y
Madhya Pradesh	P	16	+2	12	+3	9	−1	10	+1
	Q	8	−1	11	−1	10	+2	12	−3
	R	12	+2	10	−1	13	+0	9	+2
	S	4	−3	7	−1	8	−1	9	−0
Maharashtra	P	13	+2	11	+1	13	+1	15	+4
	Q	15	−3	14	−1	8	−2	6	−2
	R	12	−1	12	+2	9	+3	11	−3
	S	8	+2	11	−2	18	−2	16	+1
Bihar	P	15	−3	17	+4	19	+4	20	+4
	Q	12	−4	10	+5	5	−4	8	−3
	R	18	+2	15	−4	20	+3	19	+1
	S	9	+5	12	+3	10	−3	7	−2
Uttar Pradesh	P	18	+3	19	+1	17	+3	19	−2
	Q	17	−3	21	−4	25	−2	27	+2
	R	23	+2	18	+3	20	+2	19	−1
	S	27	−1	27	+0	23	−3	20	+1

X: The estimation of the newspaper about the number of seats expected to be won by the parties in the election.

Y: Estimated change in the number of seats expected to be won by the parties over the seats actually won in the previous election.

It is also known that no elections were held in between the above mentioned years, only these four parties contested in all these four states and no independent candidate contested in any of the elections.

11. In 1952, in which state did party P win its highest number of seats?
(A) Maharashtra (B) Bihar
(C) Uttar Pradesh (D) Madhya Pradesh

12. In which of the following years, did party R win its highest number of seats in Bihar?
(A) 1952   (B) 1957
(C) 1962   (D) 1967

13. Considering the elections in 1957, 1962 and 1967, in Maharashtra, for which of the following parties is the difference between the number of seats estimated to be won and the actual seats won in any election, the highest?
(A) P (B) Q (C) R (D) S

14. Considering the elections in 1957, 1962 and 1967 in each state individually, in case of which party did the newspaper make a perfect estimation (i.e., no difference between the estimation and the actual number of seats won) the highest number of times?
(A) P (B) Q (C) R (D) S

15. What was the total number of seats won by party R in the elections in 1967, in the four given states?
(A) 54   (B) 57
(C) 59   (D) None of these

Directions for questions 16 to 20: These questions are based on the information given below.

The following table gives the details about the number of units manufactured, the total cost involved in the manufacturing, the number of units sold and the total revenue obtained from the sales of an item over a period of four years.

Year	Units manufactured	Total Cost (in ₹)	Units Sold	Total revenue (in ₹)
2013	1260	13,20,000	1080	15,60,000
2014	1420	14,50,000	1160	17,10,000
2015	1550	17,20,000	1250	18,20,000
2016	1650	18,40,000	1320	19,30,000

Note: Only items manufactured in a year are sold in that year.

16. In which year was the number of units sold, as a percentage of those manufactured, the highest?

17. In which year was the selling price per unit, the lowest?

18. What is the number of units of the item which were not sold in the four years together?

19. What was the highest cost of manufacturing one unit of the item in any of the given years?

20. Had the selling price per unit in 2014 remained the same, what would have been the approximate profit (in ₹) in that year had all the units been sold. (Profit = Total revenue – Total cost.)

Exercise – 1(b)

Directions for questions 1 to 5: These questions are based on the information given below.

Percentage growth in population of six countries over the previous years

Country	2004	2005	2006	2007	2008
India	10	15	18	20	23
China	8	10	15	18	21
Pakistan	12	16	20	18	15
Sri Lanka	11	14	17	20	23
Bangladesh	15	18	21	25	30
Malaysia	5	10	15	20	25

1. In which of the following countries is the percentage growth in population the highest from 2003 to 2007?
(A) Bangladesh   (B) India
(C) Malaysia   (D) Sri Lanka

2. If the ratio of the population of Pakistan and Bangladesh in 2003 was 5 : 3, then what was the population of Bangladesh in 2006, if the population of Pakistan in 2003 was 25 million?
(A) 23.46 million
(B) 24.62 million
(C) 25.81 million
(D) 25.52 million

3. If the population of Malaysia in 2008 was 175 million, then the population of Malaysia in 2005 was approximately
(A) 97 million
(B) 95.5 million
(C) 101.5 million
(D) 104.5 million

4. By approximately what percentage was the population of India in 2008 more than the population of China in 2005, if both the countries had the same population in 2004?
(A) 82   (B) 80
(C) 84   (D) 78

5. The ratio of the population of China and Pakistan in 2007 is approximately.
(A) 5 : 2
(B) 6 : 8
(C) 5 : 11
(D) Cannot be determined

Directions for questions 6 to 10: These questions are based on the information given below.

The following table shows the number of students in classes 8, 9 and 10 in a school. The school started in 2000 and students are admitted only in class 8. At the end of the year the students who pass the final exams get promoted to the next class while the students who fail stay in the same class are joined by a new bunch of students, who are either promoted (class 9 and 10) or who joined the school new (class 8). All students who pass the class 10 exams pass out of the school.

Class / Year	8	9	10
2000	45	–	–
2001	50	42	–
2002	46	52	36
2003	54	46	45
2004	50	52	43

No student in class 10 failed in any of the years and no student failed in the same class more than once.

6. How many students joined the school from 2000 to 2004?
(A) 218   (B) 221   (C) 226   (D) 232

7. Approximately, what percentage of the students in class 8 in 2002, passed the final exams?
(A) 100   (B) 90   (C) 88   (D) 85

8. How many students studying in class 9 in the year 2003, failed in the final exams?
(A) 4   (B) 3   (C) 2   (D) 1

9. The total number of students who failed in class 8 from 2000 to 2003 is
(A) 12   (B) 14
(C) 18   (D) None of these

10. What percentage of the students who joined the school from 2000 to 2002, passed out of the school by 2004?
(A) 92.5%   (B) 90%   (C) 94%   (D) 95.5%

Directions for questions 11 to 15: These questions are based on the information given below.

The following table gives details about the number of students from schools P, Q, R, S and T who appeared and passed in the public examination during the years 2012 to 2016.

School / Year	P		Q		R		S		T	
	A	C	A	C	A	C	A	C	A	C
2012	360	238	168	112	526	418	768	537	465	318
2013	340	227	175	118	542	407	685	489	482	341
2014	245	150	196	131	583	437	723	512	511	347
2015	290	172	152	108	611	454	711	527	526	364
2016	286	168	161	113	618	471	653	508	508	343

A – appeared   C – passed

$$\text{Pass percentage} = \frac{\text{Number of students passed}}{\text{Number of students appeared}}$$

Directions for questions 11 to 15: Type in your answer in the input box provided below the question.

11. In which year was the pass percentage of school Q the highest?

12. Which school had the highest pass percentage in the year 2013?

13. How many more students passed in school S than in school P in the five years together?

14. The number of students who passed in the five schools in 2013 is what percentage more/less than that in 2015?

15. In which year was the pass percentage in the five schools together, the highest?

Directions for questions 16 to 20: These questions are based on the information given below.

The following table gives the price and P/E ratio of a company on the last day of five financial years.

Year	Price (₹)	P/E ratio	Market Capitalization (₹cr)
2012	1280	14.5	62,400
2013	1351	14.2	67,200
2014	1090	11.5	55,600
2015	1465	13.8	72,600
2016	1380	13.5	69,100

$$\text{P/E ratio} = \frac{\text{Price of each share}(P)}{\text{Earnings per share}(E)}$$

Market capitalization = Number of shares × Price of each share.

16. What was the approximate earnings per share of the company in 2014?
(A) 89   (B) 94   (C) 88   (D) 99

17. What was the percentage increase in the earnings per share of the company in 2013, when compared to the previous year?
(A) 7.8%   (B) 7.2%
(C) 5.9%   (D) 8.6%

18. What was the percentage increase in the number of shares of the company from 2012 to 2016?
(A) 0.2%   (B) 0.8%
(C) 1.4%   (D) 2.7%

19. What was the percentage increase in the total earnings of the company from 2014 to 2015?
(A) 3.2   (B) 8.8   (C) 12%   (D) 20

20. In how many years from 2013 to 2016 was the percentage change in the market capitalization of the company, when compared to the previous year, more than 5%?
(A) 1   (B) 2   (C) 3   (D) 4

Key

Exercise – 1(a)

1. A	8. A	15. C
2. D	9. D	16. 2013
3. A	10. C	17. 2013
4. A	11. B	18. 1070
5. B	12. B	19. 1115
6. B	13. D	20 643260
7. C	14. B	

Exercise – 1(b)

1. A	8. B	15. 2013
2. B	9. D	16. B
3. C	10. A	17. A
4. A	11. 2015	18. D
5. D	12. R	19. B
6. C	13. 1618	20. C
7. D	14. 2.65	