36 Tabulation

This section consists of questions based on the data regarding common disciplines such as *Production over a period of few years in a factory; Imports; Exports; Salary of employees in a factory; Number of students in a college in various faculties etc.* These data are in the form of a table. This table is followed by certain questions based on the information given in the table and the candidate is required to answer those questions.

The horizontal lines in a table are called its *rows*, the vertical lines are called *columns* and the distinctive heads are known as *captions*. The units of measurements are given with the captions.

EXERCISE – I

Ex. 1. Directions (*Questions 1 to 5*): *Study the given table carefully and answer the questions that follow :*

Number of candidates appeared and qualified for a test (in hundreds) in 6 different years from 5 different zones. **(Bank P.O., 2011)**

Year	P		Q		R		S		T	
	App.	Qual.	App.	Qual.	App.	Qual.	App.	Qual.	App.	Qual.
2005	3.2	2.5	3.5	1.4	3.8	2.2	4.2	2.4	6.2	2.6
2006	4.6	3.4	6.9	4.2	6.9	4.4	7.4	3.3	6.2	4.8
2007	6.5	4.9	7.7	4.5	5.9	4.8	8.3	5.6	6.4	4.2
2008	7.4	5.7	5.4	3.4	7.2	3.2	9.3	6.4	7.8	6.2
2009	8.8	4.8	6.6	5.2	8.6	6.8	11.4	5.2	9.9	6.9
2010	9.2	5.6	10.6	6.4	10.3	7.4	14.2	11.4	11.8	9.4

Note: Here App. means Appeared and Qual. means Qualified.

1. In which years was in zones the difference between the appeared candidates and qualified candidates the second lowest ?
   (*a*) 2005 (*b*) 2007 (*c*) 2008 (*d*) 2009 (*e*) 2010
2. The number of candidates who qualified the test from zone R in the year 2010 was approximately what percentage of the number of candidates who appeared from zone *Q* in the year 2008 ?
   (*a*) 152 (*b*) 147 (*c*) 142 (*d*) 132 (*e*) 137
3. What was the average number of candidates appeared from zone *T* over all the years together ?
   (*a*) 810 (*b*) 815 (*c*) 825 (*d*) 805 (*e*) 820
4. What was the ratio of the number of candidates appeared from zone *P* in the year 2005 to the number of candidates qualified from zone *S* in the year 2007 ?
   (*a*) 4 : 7 (*b*) 4 : 9 (*c*) 9 : 4 (*d*) 8 : 13 (*e*) None of these
5. From which zone was the total number of candidates who qualified the test, the second highest in the year ?
   (*a*) *P* (*b*) *Q* (*c*) *R* (*d*) *S* (*e*) *T*

Ex. 2. Directions (*Questions 6 to 10*): *Study the following table carefully and answer the questions that follow:* *(Bank P.O., 2011)*

Semester Fees (In ₹ thousands) For Five Different Courses In 6 Different Years

Years	Course				
	B.Tech	M.Sc.	B.Ed.	M.Phil	Diploma
2005	11.5	5.8	7.5	4.7	1.8
2006	14.5	6.4	11.6	5.8	3.2
2007	20.0	10.2	13.9	8.6	4.8
2008	22.2	14.6	15.8	12.7	5.6
2009	35.8	17.7	18.5	25.1	12.5
2010	50.7	20.9	22.6	18.9	14.9

6. What was the approximate per cent increase in the semester fees of B.Ed course in the year 2007 as compared to the previous year ?

(*a*) 26 % (*b*) 30 % (*c*) 20 % (*d*) 16 % (*e*) 10 %

7. What was the average semester fee charged for M.Sc. course over all the years together ?

(*a*) ₹ 12700 (*b*) ₹ 12600 (*c*) ₹ 12060 (*d*) ₹ 12070 (*e*) ₹ 13140

8. What was the difference between the total semester fee charged for Diploma course over the years together and the fee charged for B.Tech Course in the year 2009 ?

(*a*) ₹ 8500 (*b*) ₹ 8000 (*c*) ₹ 6500 (*d*) ₹ 7000 (*e*) None of these

9. The semester fee charged for M.Phil course in the year 2008 was approximately what percentage of the semester fee charged for M.Sc course in the year 2009 ?

(*a*) 67 (*b*) 84 (*c*) 80 (*d*) 76 (*e*) 72

10. What was the total semester fee charged for all the courses together in the year 2006 ?

(*a*) ₹ 42500 (*b*) ₹ 41500 (*c*) ₹ 41600 (*d*) ₹ 42200 (*e*) none of these

Ex. 3. Directions (*Questions 11 to 15*): *Study the following table carefully and answer the questions given below:*

Number (N) of Candidates (In lakhs) Appearing For An Entrance Examination From Six Different States And The Percentage (P) of Candidates Clearing the Same Over the Years *(Bank P.O., 2010)*

STATE →	A		B		C		D		E		F	
YEAR ↓	N	P	N	P	N	P	N	P	N	P	N	P
2004	1.23	42	1.04	51	1.11	32	1.32	24	1.23	36	1.33	31
2005	1.05	43	1.12	62	1.07	47	1.15	49	1.18	55	1.24	24
2006	2.04	38	1.48	32	1.08	28	1.96	35	1.42	49	1.58	26
2007	1.98	41	2.07	43	1.19	30	1.88	46	1.36	47	1.79	29
2008	1.66	53	1.81	50	1.56	42	1.83	60	1.73	57	1.86	34
2009	1.57	39	1.73	36	1.64	52	2.01	56	1.69	55	1.95	37

11. What is the ratio of the total number of candidates clearing the entrance examination from State B in the year 2004 to that of those clearing the entrance examination from State *C* in the same year ?

(*a*) 221 : 148 (*b*) 218 : 143 (*c*) 148 : 221 (*d*) 143 : 218 (*e*) None of these

12. In which year did the highest number of candidates clear the entrance exam from State *D* ?

(*a*) 2008 (*b*) 2006 (*c*) 2009 (*d*) 2007 (*e*) None of these

13. What is the number of candidates not clearing the entrance exam from State A in the year 2007 ?

(*a*) 186820 (*b*) 11682 (*c*) 1868200 (*d*) 116820 (*e*) None of these

14. What is the total number of candidates clearing the entrance examination from States E and F together in the year 2006 ?

(*a*) 16160 (*b*) 110660 (*c*) 11066 (*d*) 1106600 (*e*) None of these

15. What is the average number of candidates appearing for the entrance exam from State *D* in the years 2007, 2008 and 2009 together ?

(*a*) $1907\frac{2}{3}$ (*b*) $18666\frac{1}{3}$ (*c*) $1866\frac{1}{3}$ (*d*) $190666\frac{2}{3}$ (*e*) None of these

Ex. 4. Directions (*Questions 16 to 20*): *Study the following table carefully and answer the questions that follow:*

(Bank P.O., 2010)

Number of Candidates (in lakhs) Appearing In an Entrance Examination From Six Different Cities

City	A	B	C	D	E	F
Number of candidates	1.25	3.14	1.08	2.27	1.85	2.73

Ratio of Candidates Passing And Failing Within the City

City	Ratio of Passing and Failing
A	7 : 3
B	5 : 3
C	4 : 5
D	1 : 3
E	3 : 2
F	7 : 5

16. What is the ratio of the number of candidates failing the exam from City *D* to that of those failing the exam from City *A* ?

(*a*) 289 : 42 (*b*) 42 : 289 (*c*) 227 : 50 (*d*) 50 : 227 (*e*) None of these

17. The number of candidates appearing for the exam from City *C* is what per cent of the number of candidates appearing for the exam from City *B* ? (rounded off to nearest integer)

(*a*) 27 % (*b*) 34 % (*c*) 42 % (*d*) 21 % (*e*) 38 %

18. The number of candidates passing the examination from City *F* is what per cent of the total number of candidates appearing from all the cities together ? (rounded off to two digits after the decimal)

(*a*) 12.93% (*b*) 14.46% (*c*) 10.84% (*d*) 11.37% (*e*) None of these

19. Which city has the highest number of students failing the entrance exam ?

(*a*) *F* (*b*) *C* (*c*) *B* (*d*) *D* (*e*) None of these

20. What is the number of candidates passing the exam from City *E* ?

(*a*) 13000 (*b*) 1110000 (*c*) 113000 (*d*) 11000 (*e*) None of these

Ex. 5. Directions (*Questions 21 to 25*): *Study the table given below and answer the questions that follow:*

(Bank P.O., 2009)

Total Number of Employees in Different Departments of an Organization and Percentage of Females and Males

Department	Total No. of Employees	Percentage of Females	Percentage of Males
IT	840	45	55
Accounts	220	35	65
Production	900	23	77
HR	360	65	35
Marketing	450	44	56
Customer service	540	40	60

21. What is the respective ratio of the number of females in Production department to the number of females in the Marketing department ?

(*a*) 22 : 23 (*b*) 35 : 33 (*c*) 23 : 22 (*d*) 33 : 35 (*e*) None of these

22. What is the ratio of the number of females in the HR and Accounts departments together to the number of males in the same departments together?
(*a*) 311 : 269 (*b*) 268 : 319 (*c*) 269 : 311 (*d*) 319 : 268 (*e*) None of these

23. What is the total number of employees in all the departments together?
(*a*) 3260 (*b*) 3310 (*c*) 3140 (*d*) 3020 (*e*) None of these

24. The total number of employees in the HR department forms approximately what per cent of the total number of employees in the Accounts department?
(*a*) 149% (*b*) 178% (*c*) 157% (*d*) 164% (*e*) 137%

25. What is the total number of males in the IT and Customer Service departments together?
(*a*) 687 (*b*) 678 (*c*) 768 (*d*) 876 (*e*) None of these

ANSWERS

1. (*b*)	**2.** (*e*)	**3.** (*d*)	**4.** (*a*)	**5.** (*e*)	**6.** (*c*)	**7.** (*b*)	**8.** (*d*)	**9.** (*e*)	**10.** (*b*)
11. (*a*)	**12.** (*c*)	**13.** (*d*)	**14.** (*b*)	**15.** (*d*)	**16.** (*c*)	**17.** (*b*)	**18.** (*a*)	**19.** (*d*)	**20.** (*e*)
21. (*c*)	**22.** (*a*)	**23.** (*b*)	**24.** (*d*)	**25.** (*e*)					

SOLUTIONS

1. In zone *S*, the difference between the appeared candidates and the qualified candidates in various years is given below:

$2005 \rightarrow (4.2 - 2.4) = 1.8$, $2006 \rightarrow (7.4 - 3.3)$
$= 4.1$, $2007 \rightarrow (8.3 - 5.6) = 2.7$.
$2008 \rightarrow (9.3 - 6.4) = 2.9$, $2009 \rightarrow (11.4 - 5.2)$
$= 6.2$, $2010 \rightarrow (14.2 - 11.4) = 2.8$

It was lowest in 2005 and second lowest in 2007.

2. Required percentage

$$= \left(\frac{7.4}{5.4} \times 100\right)\% = \frac{3700}{27}\% = 137\%.$$

3. Average number of candidates appeared from *T* all over the years

$$= \frac{(6.2 + 6.2 + 6.4 + 7.8 + 9.9 + 11.8) \times 100}{6}$$

$$= \frac{(48.3 \times 100)}{6} = \frac{4830}{6} = 805.$$

4. Required ratio $= \frac{3.2}{5.6} = \frac{32}{56} = \frac{4}{7} = 4:7.$

5. Total number of candidates who qualified the test in 2009 and 2010 from various zones are :

$P \rightarrow (4.8 + 5.6) = 10.4$, $Q \rightarrow (5.2 + 6.4)$
$= 11.6$, $R \rightarrow (6.8 + 7.4) = 14.2$,
$S \rightarrow (5.2 + 11.4) = 16.6$, $T \rightarrow (6.9 + 9.4) = 16.3$

It was highest from zone *S* and second highest from zone *T*.

6. Percent increase in semester fees of B.Ed in the year 2007 as compared to 2006

$$= \left\{\frac{(13.9 - 11.6)}{11.6} \times 100\right\}\%$$

$$= \left(\frac{2.3}{11.6} \times 100\right)\% = \frac{2300}{116}\%$$

$$= \frac{575}{29}\% = 19.8\% \simeq 20\% \text{ (nearly)}.$$

7. Average semester fee for M.Sc. course over the given years

$$= ₹\ \frac{(5.8 + 6.4 + 10.2 + 14.6 + 17.7 + 20.9) \times 1000}{6}$$

$$= ₹\left(\frac{75.6 \times 1000}{6}\right) = ₹\left(\frac{75600}{6}\right) = ₹12600.$$

8. Required difference

$= ₹\ \{(1.8 + 3.2 + 4.8 + 5.6 + 12.5 + 14.9)$
$\times 1000 - (35.8 \times 1000)\}$
$= ₹\ [(42.8 \times 1000) - (35.8 \times 1000)] = ₹\ (7 \times 1000)$
$= ₹\ 7000.$

9. Required percentage

$$= \left\{\frac{(12.7 \times 1000)}{(17.7 \times 1000)} \times 100\right\}\% = \left(\frac{127}{177} \times 100\right)\%$$

$$= \frac{12700}{177}\% = 71.75\% = 72\% \text{ (approx)}.$$

10. Total semester fee for all the courses in 2006

$= ₹\ (14.5 + 6.4 + 11.6 + 5.8 + 3.2) \times 1000$
$= ₹\ (41.5 \times 1000) = ₹\ 41500.$

11. Required ratio

$$= \frac{(1.04 \text{ lakhs} \times 51\%)}{(1.11 \text{ lakhs} \times 32\%)} = \left(\frac{1.04 \times 51}{1.11 \times 32}\right)$$

$$= \left(\frac{104 \times 51}{111 \times 32}\right) = \left(\frac{13 \times 17}{37 \times 4}\right) = \frac{221}{148} = 221:148.$$

12. Number of candidates clearing the exam from State *D* in

$$2008 \rightarrow \left(1.83 \times \frac{60}{100}\right) \text{lakhs} = \frac{(1.83 \times 3)}{5} \text{ lakhs}$$

$$= \frac{5.49}{5} \text{ lakhs} = 1.10 \text{ lakhs}.$$

$$2009 \rightarrow \left(2.01 \times \frac{56}{100}\right) \text{lakhs} = \left(\frac{2.01 \times 14}{25}\right) \text{lakhs}$$

$= \frac{28.14}{25}$ lakhs $= 1.12$ lakhs.

In rest of the years it is clearly less. So, it is maximum in the year 2009.

13. Number of candidates not clearing the exam from State A in 2007

$= [1.98 \times (100 - 41)\%]$ lakhs $= \left(1.98 \times \frac{59}{100}\right)$lakhs

$= \left(\frac{116.82}{100} \times 100000\right) = 116820.$

14. Number of candidates clearing the exam from States *E* and *F* together in 2006

$= \left(1.42 \text{ lakhs} \times \frac{49}{100}\right) + \left(1.58 \text{ lakhs} \times \frac{26}{100}\right)$

$= \frac{(1.42 \times 49) + (1.58 \times 26)}{100}$ lakhs

$= \frac{(69.58 + 41.08)}{100}$ lakhs

$= \frac{110.66}{100} \times 100000 = 110660.$

15. Average number of candidates appearing from State *D* in 2007, 2008, 2009

$= \frac{(1.88 + 1.83 + 2.01)}{3}$ lakhs $= \frac{5.72}{3}$ lakhs

$= \left(\frac{5.72 \times 100000}{3}\right) = \frac{572000}{3} = 190666\frac{2}{3}.$

16. Number of candidates failing from city *D*

$= \left(\frac{3}{4} \times 2.27 \times 100000\right)$

$= \left(\frac{3}{4} \times \frac{227}{100} \times 100000\right) = (227 \times 750).$

Number of candidates failing from city *A*

$= \left(\frac{3}{10} \times 1.25 \times 100000\right)$

$= \left(\frac{3}{10} \times \frac{125}{100} \times 100000\right) = (300 \times 125).$

Required ratio $= \frac{227 \times 750}{300 \times 125} = \frac{227}{50} = 227 : 50.$

17. Number of candidates from city *C*

$= (1.08 \times 100000) = 108000.$

Number of candidates from city *B*

$= (3.14 \times 100000) = 314000.$

Required percentage $= \left(\frac{108000}{314000} \times 100\right)\%$

$= \left(\frac{108}{314} \times 100\right)\% = \left(\frac{54}{157} \times 100\right)\%$

$= \frac{5400}{157}\% = 34.39\% \simeq 34\%.$

18. Total number of candidates from all the 5 cities

$= [(1.25 + 3.14 + 1.08 + 2.27 + 1.85 + 2.73) \times 100000]$

$= (12.32 \times 100000) = 1232000.$

Number of candidates passing the exam from City *F*

$= \left(\frac{7}{12} \times 2.73 \times 100000\right) = \left(\frac{7 \times 273 \times 1000}{12}\right)$

$= (7 \times 91 \times 250) = 159250.$

Required percentage $= \left(\frac{159250}{1232000} \times 100\right)\%$

$= \left(\frac{15925}{1232}\right)\% = 12.926 \simeq 12.93\%.$

19. Number of failures from different cities:

$A \rightarrow \left(1.25 \times 100000 \times \frac{3}{10}\right) = 37500;$

$B \rightarrow \left(3.14 \times 100000 \times \frac{3}{8}\right) = \left(\frac{314000 \times 3}{8}\right) = 117750;$

$C \rightarrow \left(1.08 \times 100000 \times \frac{5}{9}\right) = \left(108000 \times \frac{5}{9}\right) = 60000;$

$D \rightarrow \left(2.27 \times 100000 \times \frac{3}{4}\right) = \left(227000 \times \frac{3}{4}\right) = 170250;$

$E \rightarrow \left(1.85 \times 100000 \times \frac{2}{5}\right) = \left(185000 \times \frac{2}{5}\right) = 74000;$

$F \rightarrow \left(2.73 \times 100000 \times \frac{5}{12}\right) = \left(273000 \times \frac{5}{12}\right) = 113750.$

So, the maximum number of failures are from City *D*.

20. Number of candidates passing the exam from City *E*

$= \left(1.85 \times 100000 \times \frac{3}{5}\right) = \left(185000 \times \frac{3}{5}\right)$

$= (37000 \times 3) = 111000.$

21. Number of females in Production : Number of females in Marketing

$= \left(900 \times \frac{23}{100}\right) : \left(450 \times \frac{44}{100}\right) = 207 : 198 = 23 : 22.$

22. (Number of females in HR and Accounts) : (Number of males in HR and Accounts)

$= \left\{\left(\frac{65}{100} \times 360\right) + \left(\frac{35}{100} \times 220\right)\right\} : \left\{\begin{matrix}\left(\frac{35}{100} \times 360\right) \\ + \left(\frac{65}{100} \times 220\right)\end{matrix}\right\}$

$= (234 + 77) : (126 + 143) = 311 : 269.$

23. Total number of employees in all the departments

$= (840 + 220 + 900 + 360 + 450 + 540) = 3310.$

24. Required percentage $= \left(\frac{360}{220} \times 100\right)\% = 163.6\% \simeq 164\%.$

25. Total number of males in IT and Customer service

$= \left(840 \times \frac{55}{100}\right) + \left(540 \times \frac{60}{100}\right) = (462 + 324) = 786.$

EXERCISE – II

Directions (*Questions 1 to 5*): *Study the table carefully to answer the questions that follow:* (Bank P.O., 2011)

Number of Boys and Girls (in Hundreds) in Six Different Years in 5 Different Schools

School →	A		B		C		D		E	
Years ↓	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
2005	3.3	3.6	5.2	3.1	5.5	4.5	2.4	1.4	6.5	6.6
2006	6.6	4.2	4.9	2.2	6.9	3.3	4.4	2.3	5.5	3.6
2007	9.3	6.9	4.7	4.2	5.8	4.9	6.4	3.3	2.7	2.4
2008	5.4	9.6	6.3	5.4	6.6	5.2	5.3	5.4	5.4	5.7
2009	8.4	12.9	7.5	5.9	8.7	6.6	12.1	5.2	6.8	6.5
2010	12.3	14.4	9.8	4.4	11.7	4.2	12.2	9.4	10.8	12.7

1. What is the approximate percentage decrease in the number of boys in School *D* in the year 2008 as compared to that in the previous year ?

(*a*) 17% (*b*) 12% (*c*) 9% (*d*) 5% (*e*) 23%

2. The number of girls in School *B* in the year 2009 is approximately what per cent of the total number of students in School *E* in the year 2006 ?

(*a*) 46% (*b*) 52% (*c*) 70% (*d*) 58% (*e*) 65%

3. What is the average number of girls in School *A* in all the years taken together ?

(*a*) 760 (*b*) 800 (*c*) 860 (*d*) 600 (*e*) None of these

4. What is the ratio of the number of boys in School *C* in the year 2009 to the number of girls in School *A* in the year 2009 ?

(*a*) 29 : 41 (*b*) 36 : 11 (*c*) 29 : 43 (*d*) 36 : 13 (*e*) None of these

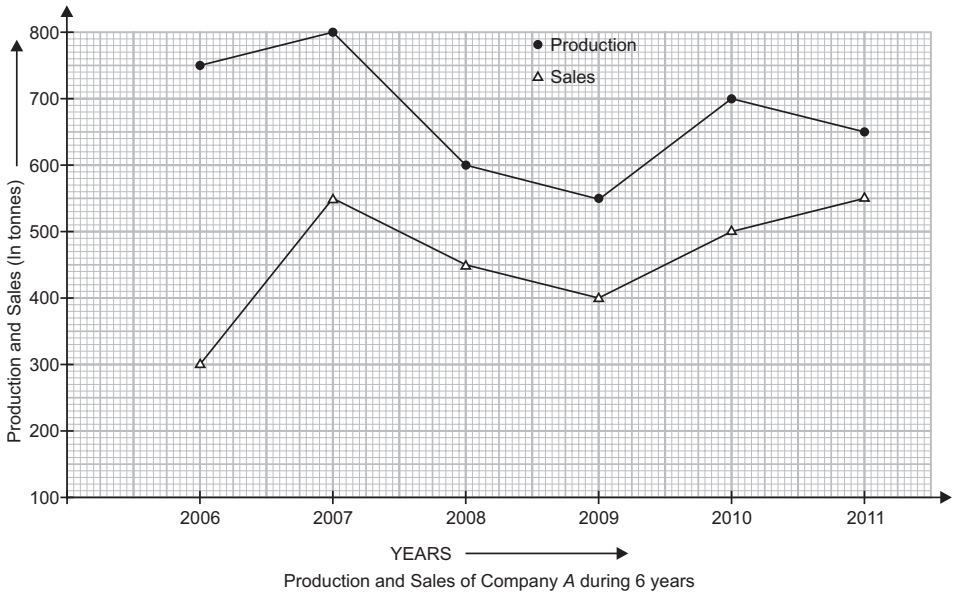
5. In which year is the total number of students the third highest in School *E* ?

(*a*) 2006 (*b*) 2007 (*c*) 2008 (*d*) 2005 (*e*) 2010

Directions (*Questions 6 to 10*): *Study the following information and answer the questions that follow :*

(*Bank P.O., 2012*)

The graph given below represents the production (in tonnes) and sales (in tonnes) of Company A from 2006 to 2011.



Production and Sales of Company *A* during 6 years

The table given below represents the ratio of the production (in tonnes) of Company A to the production (in tonnes) of Company B, and the ratio of sales (in tonnes) of Company A to the sales (in tonnes) of Company B.

Year	Production (A : B)	Sales (A : B)
2006	5 : 4	2 : 3
2007	8 : 7	11 : 12
2008	3 : 4	9 : 14
2009	11 : 12	4 : 5
2010	14 : 13	10 : 9
2011	13 : 14	1 : 1

6. What is the approximate percentage increase in the production of Company *A* (in tonnes) from the year 2009 to the production of Company *A* (in tonnes) in the year 2010 ?
(*a*) 18 % (*b*) 38 % (*c*) 23 % (*d*) 27 % (*e*) 32 %

7. The sales of Company *A* in the year 2009 was approximately what per cent of the production of Company *A* in the same year ?
(*a*) 65 % (*b*) 73 % (*c*) 79 % (*d*) 83 % (*e*) 69 %

8. What is the average production of Company *B* (in tonnes) from the year 2006 to the year 2011?
(*a*) 574 (*b*) 649 (*c*) 675 (*d*) 593 (*e*) 618

9. What is the ratio of the total production (in tonnes) of Company *A* to the total sales (in tonnes) of Company *A* ?
(*a*) 81 : 64 (*b*) 64 : 55 (*c*) 71 : 81 (*d*) 71 : 55 (*e*) 81 : 55

10. What is the ratio of production of Company *B* (in tonnes) in the year 2006 to production of Company *B* (in tonnes) in the year 2008 ?
(*a*) 2 : 5 (*b*) 4 : 5 (*c*) 3 : 4 (*d*) 3 : 5 (*e*) 1 : 4

Directions (*Questions 11 to 15*): *Study the table given below carefully and answer the questions that follow :*

(Bank P.O. 2011)

Number of Athletes (In Hundred) Who Participated In a Sports Event From 5 Different Countries Over The Years

M → Male & F → Female

Countries →	A		B		C		D		E	
Years ↓	M	F	M	F	M	F	M	F	M	F
2005	4.4	3.3	6.3	4.2	4.5	3.1	5.6	4.1	4.7	2.1
2006	6.6	4.2	8.4	6.2	6.9	3.3	8.4	6.3	7.8	5.2
2007	4.6	1.8	7.4	4.8	4.8	2.8	9.3	7.3	8.7	6.5
2008	9.6	4.9	11.4	8.4	6.6	4.2	12.6	9.4	8.9	5.8
2009	11.8	6.4	10.6	5.2	7.9	6.3	14.4	10.2	11.8	9.2
2010	8.2	5.2	6.4	7.2	10.8	6.9	15.6	12.1	13.6	9.8

11. In which of the following years was the total number of participants (athletes) the second highest from Country *C* ?
(*a*) 2005 (*b*) 2006 (*c*) 2007 (*d*) 2008 (*e*) None of these

12. What was the average number of female athletes who participated from Country *B* over all the years together?
(*a*) 1200 (*b*) 400 (*c*) 600 (*d*) 1800 (*e*) 3600

13. What was the approximate percentage decrease in the number of male athletes who participated from Country *C* in the year 2007 as compared to the previous year ?
(*a*) 21% (*b*) 30% (*c*) 35% (*d*) 39% (*e*) 25%

14. The number of female athletes who participated from Country *E* in the year 2009 was approximately what percentage of the total number of athletes who participated from Country *B* in the year 2008 ?
(*a*) 40% (*b*) 46% (*c*) 50% (*d*) 56% (*e*) 60%

15. In which of the following countries is the difference between the number of male and female participants second highest in the year 2006?

(*a*) *A* (*b*) *B* (*c*) *C* (*d*) *D* (*e*) *E*

Directions (*Questions 16 to 20*): *Study the following table and answer the questions that are given below:*

Expenditure of a Company (In Lakh Rupees) Per Annum Over The Given Years

Items of Expenditure / Year ↓	Salary	Fuel and Transport	Bonus	Interest on Loans	Taxes
2007	288	98	3.00	23.4	83
2008	342	112	2.52	32.5	108
2009	324	101	3.84	41.6	74
2010	336	133	3.68	36.4	88
2011	420	142	3.96	49.4	98

16. The ratio between the total expenditure on Taxes for all the years and the total expenditure on Fuel and Transport for all the years respectively, is approximately :

(*a*) 4 : 7 (*b*) 10 : 13 (*c*) 5 : 6 (*d*) 5 : 8 (*e*) 2 : 3

17. The total expenditure of the company over these items during the year 2009 is

(*a*) ₹ 544.44 lakhs (*b*) ₹ 501.11 lakhs (*c*) ₹ 446.46 lakhs (*d*) ₹ 478.87 lakhs (*e*) ₹ 612.13 lakhs

18. What is the average amount of interest per year which the company had to pay during this period ?

(*a*) ₹ 32.43 lakhs (*b*) ₹ 33.72 lakhs (*c*) ₹ 34.18 lakhs (*d*) ₹ 35.69 lakhs (*e*) ₹ 36.66 lakhs

19. Total expenditure on all these items in 2007 was approximately what per cent of the total expenditure in 2011 ?

(*a*) 62 % (*b*) 66 % (*c*) 69 % (*d*) 71 % (*e*) 73 %

20. The total amount of bonus paid by the company during the given period is approximately what per cent of the total amount of salary paid during this period ?

(*a*) 0.1 % (*b*) 0.5 % (*c*) 1 % (*d*) 1.25 % (*e*) 1.11 %

Directions (*Questions 21 to 26*): *Study the following table and answer the questions based on it :*

Number of Candidates Appeared, Qualified And Selected In a Competitive Examination From 5 States Delhi; H.P.; U.P.; Punjab and Haryana Over The Years 2007 To 2011

Year	Delhi			H.P.			U.P.			Punjab			Haryana		
	App.	Qual.	Sel.	App.	Qual.	Sel.	App.	Qual.	Sel.	App.	Qual.	Sel.	App.	Qual.	Sel.
2007	8000	850	94	7800	810	82	7500	720	78	8200	680	85	6400	700	75
2008	4800	500	48	7500	800	65	5600	620	85	6800	600	70	7100	650	75
2009	7500	640	82	7400	560	70	4800	400	48	6500	525	65	5200	350	55
2010	9500	850	90	8800	920	86	7000	650	70	7800	720	84	6400	540	60
2011	9000	800	70	7200	850	75	8500	950	80	5700	485	60	4500	600	75

21. In the year 2007, which state had the lowest percentage of candidates selected over the candidates appeared ?

(*a*) Delhi (*b*) H.P. (*c*) U.P. (*d*) Punjab (*e*) Haryana

22. The percentage of candidates qualified from Punjab over those appeared from Punjab is highest in the year :
(*a*) 2007 (*b*) 2008 (*c*) 2009 (*d*) 2010 (*e*) 2011

23. The percentage of candidates selected from U.P. over those qualified from U.P. is highest in the year :
(*a*) 2007 (*b*) 2008 (*c*) 2009 (*d*) 2010 (*e*) 2011

24. The number of candidates selected from Haryana during the period under review is approximately what percent of the number selected from Delhi during this period ?
(*a*) 79.5% (*b*) 81% (*c*) 84.5% (*d*) 88.5% (*e*) 92.5%

25. For which state the average number of candidates selected over the years is the maximum ?
(*a*) Delhi (*b*) H.P. (*c*) U.P. (*d*) Punjab (*e*) Haryana

26. What is the approximate percentage of total number of candidates selected to the total number of candidates qualified for all the five states together during the year 2009 ?
(*a*) 10% (*b*) 11% (*c*) 12% (*d*) 13% (*e*) 14%

Directions (*Questions 27 to 31*): ***The following table gives the percentage of marks obtained by 7 students in 6 different subjects in an examination. Study the table and answer the questions based on it.*** **(Bank P.O. 2003)**

Note: ***The numbers in the brackets give the maximum marks in each subject.***

Subjects (Max. Marks) / Student	Maths (150)	Chemistry (130)	Physics (120)	Geography (100)	History (60)	Computer Science (40)
Ayush	90	50	90	60	70	80
Aman	100	80	80	40	80	70
Sajal	90	60	70	70	90	70
Rohit	80	65	80	80	60	60
Muskan	80	65	85	95	50	90
Tanvi	70	75	65	85	40	60
Tarun	65	35	50	77	80	80

27. What was the aggregate of marks obtained by Sajal in all the six subjects ?
(*a*) 409 (*b*) 419 (*c*) 429 (*d*) 439 (*e*) 449

28. What is the overall percentage of Tarun ?
(*a*) 52.5% (*b*) 55% (*c*) 60% (*d*) 63% (*e*) 64.5%

29. What are the average marks obtained by all the seven students in Physics ? (rounded off to two digits after decimal)
(*a*) 77.26 (*b*) 89.14 (*c*) 91.37 (*d*) 96.11 (*e*) 103.21

30. The number of students who obtained 60% and above marks in all the subjects is :
(*a*) 1 (*b*) 2 (*c*) 3 (*d*) None (*e*) None of these

31. In which subject is the overall percentage the best ?
(*a*) History (*b*) Maths (*c*) Physics (*d*) Chemistry (*e*) Geography

Directions (*Questions 32 to 35*): ***The following table gives the percentage distribution of population of five states, P, Q, R, S and T on the basis of poverty line and also on the basis of sex. Study the table and answer the questions based on it.***

State	Percentage of Population below Poverty line	Proportion of Males and Females	
		Below Poverty line	Above Poverty Line
		M : F	M : F
P	35	5 : 6	6 : 7
Q	25	3 : 5	4 : 5
R	24	1 : 2	2 : 3
S	19	3 : 2	4 : 3
T	15	5 : 3	3 : 2

32. What will be the number of females above poverty line in the State S if it is known that the population of State S is 7 million ?

(*a*) 3 million (*b*) 2.43 million (*c*) 1.33 million (*d*) 5.7 million (*e*) 1.61 million

33. If the male population above poverty line for State R is 1.9 million, then the total population of State R is :

(*a*) 4.5 million (*b*) 4.85 million (*c*) 5.35 million (*d*) 6.25 million (*e*) 7.6 million

34. What will be the male population above poverty line for State P if the female population below poverty line for State P is 2.1 million ?

(*a*) 2.1 million (*b*) 2.3 million (*c*) 2.7 million (*d*) 3.3 million (*e*) 3.4 million

35. If the population of males below poverty line for State Q is 2.4 million and that for State T is 6 million, then the total populations of states Q and T are in the ratio :

(*a*) 1 : 3 (*b*) 2 : 5 (*c*) 3 : 7 (*d*) 4 : 9 (*e*) 5 : 12

ANSWERS

1. (*a*)	**2.** (*e*)	**3.** (*c*)	**4.** (*c*)	**5.** (*d*)	**6.** (*d*)	**7.** (*b*)	**8.** (*c*)	**9.** (*e*)	**10.** (*c*)
11. (*e*)	**12.** (*c*)	**13.** (*b*)	**14.** (*b*)	**15.** (*e*)	**16.** (*b*)	**17.** (*a*)	**18.** (*e*)	**19.** (*c*)	**20.** (*c*)
21. (*d*)	**22.** (*d*)	**23.** (*b*)	**24.** (*d*)	**25.** (*a*)	**26.** (*d*)	**27.** (*e*)	**28.** (*c*)	**29.** (*b*)	**30.** (*b*)
31. (*b*)	**32.** (*b*)	**33.** (*d*)	**34.** (*d*)	**35.** (*b*)					

SOLUTIONS

1. Number of boys in School *D* in 2007

$= (6.4 \times 100) = 640.$

Number of boys in School *D* in 2008

$= (5.3 \times 100) = 530.$

Decrease % $= \left(\frac{110}{640} \times 100\right)\% = \frac{275}{16}\% = 17.1\% \simeq 17\%.$

2. Number of girls in School *B* in 2009

$= (5.9 \times 100) = 590.$

Total number of students in School *E* in 2006

$= (5.5 + 3.6) \times 100 = (9.1 \times 100) = 910.$

Required % $= \left(\frac{590}{910} \times 100\right)\% = \frac{5900}{91}\%$

$= 64.8\% = 65\%$ (nearly).

3. Average number of girls in School *A* over the years

$$= \frac{(3.6 + 4.2 + 6.9 + 9.6 + 12.9 + 14.4) \times 100}{6}$$

$$= \left(\frac{51.6 \times 100}{6}\right) = \frac{5160}{6} = 860.$$

4. (Number of boys in *C* in 2009) : (Number of girls in *A* in 2009)

$= (8.7 \times 100) : (12.9 \times 100)$

$= \frac{870}{1290} = \frac{29}{43} = 29 : 43.$

5. Total number of students in School *E* in various years:

$2005 \rightarrow (6.5 + 6.6) \times 100$

$= 1310$, $2006 \rightarrow (5.5 + 3.6) \times 100 = 910$,

$2007 \rightarrow (2.7 + 2.4) \times 100$

$= 510$, $2008 \rightarrow (5.4 + 5.7) \times 100 = 1110$,

$2009 \rightarrow (6.8 + 6.5) \times 100$

$= 1330$, $2010 \rightarrow (10.8 + 12.7) \times 100 = 2350.$

It is highest in 2010, 2nd highest in 2009 and third highest in 2005.

6. Production of *A* in 2009 = 550 tonnes.

Production of *A* in 2010 = 700 tonnes.

Increase % $= \left(\frac{150}{550} \times 100\right)\% = \frac{300}{11}\% = 27.2\% \simeq 27\%.$

7. Sales of *A* in 2009 = 400 tonnes

Production of *A* in 2009 = 550 tonnes

Required percentage

$$= \left(\frac{400}{550} \times 100\right)\% = \frac{800}{11}\% = 72.7\% \simeq 73\%.$$

8. Total production of *B* from 2006 to 2011

$$= \left[\begin{array}{c} \left(750 \times \frac{4}{5}\right) + \left(800 \times \frac{7}{8}\right) + \left(600 \times \frac{4}{3}\right) \\ + \left(550 \times \frac{12}{11}\right) + \left(700 \times \frac{13}{14}\right) + \left(650 \times \frac{14}{13}\right) \end{array}\right] \text{tonnes}$$

$= (600 + 700 + 800 + 600 + 650 + 700)$ tonnes

$= 4050$ tonnes.

$\therefore$ Average production $= \frac{4050}{6}$ tonnes $= 675$ tonnes.

9. (Total production of *A*) : (Total sales of *A*)

$= (750 + 800 + 600 + 550 + 700 + 650)$

$: (300 + 550 + 450 + 400 + 500 + 550)$

$= 4050 : 2750 = \frac{4050}{2750} = \frac{81}{55} = 81 : 55.$

10. Production of *B* in 2006

$= \left(750 \times \frac{4}{5}\right)$ tonnes $= 600$ tonnes.

Production of B in 2008

$$= \left(600 \times \frac{4}{3}\right) \text{tonnes} = 800 \text{ tonnes}.$$

Required ratio = 600 : 800 = 3 : 4

11. Total number of athletes from C in various years:

2005 → (4.5 + 3.1) × 100 = (7.6 × 100) = 760;

2006 → (6.9 + 3.3) × 100 = 10.2 × 100 = 1020;

2007 → (4.8 + 2.8) × 100 = (7.6 × 100) = 760;

2008 → (6.6 + 4.2) × 100 = 10.8 × 100 = 1080;

2009 → (7.9 + 6.3) × 100 = 14.2 × 100 = 1420;

2010 → (10.8 + 6.9) × 100 = 17.7 × 100 = 1770.

It was second highest in 2009. So, the correct answer is (*e*).

12. Average number of female athletes from B over all the years

$$= \frac{(4.2 + 6.2 + 4.8 + 8.4 + 5.2 + 7.2) \times 100}{6} = \frac{3600}{6} = 600.$$

13. Number of male athletes in 2006 from C

= (6.9 × 100) = 690.

Number of male athletes in 2007 from C

= (4.8 × 100) = 480.

$$\text{Decrease \%} = \left\{\frac{(690 - 480)}{690} \times 100\right\}\% = \left(\frac{210}{690} \times 100\right)$$

$$= \frac{700}{23}\% = 30.4\% \simeq 30\% \text{ (nearly)}.$$

14. Number of female athletes from E in 2009

= (9.2 × 100) = 920.

Total number of athletes from B in 2008

= (11.4 + 8.4) × 100 = 19.8 × 100 = 1980.

Let 920 = x % of 1980. Then,

$$\frac{x}{100} \times 1980 = 920 \Rightarrow x = \left(\frac{920 \times 100}{1980}\right)$$

$$= \frac{4600}{99}\% = 46.46\% \simeq 46\%.$$

15. In 2006, the difference between males and females in various countries was

A → (6.6 − 4.2) × 100 = (2.4 × 100) = 240;

B → (8.4 − 6.2) × 100 = 2.2 × 100 = 220;

C → (6.9 − 3.3) × 100 = (3.6 × 100) = 360;

D → (8.4 − 6.3) × 100 = 2.1 × 100 = 210;

E → (7.8 − 5.2) × 100 = (2.6 × 100) = 260.

It was second highest in E.

16. Total expenditure on Taxes

= ₹ (83 + 108 + 74 + 88 + 98) lakh

= ₹ 451 lakh.

Total expenditure on Fuel and Transport

= ₹ (98 + 112 + 101 + 133 + 142) lakh.

= ₹ 586 lakh.

$$\text{Required ratio} = \frac{451}{586} = \frac{1}{1.3} = \frac{10}{13} = 10 : 13 \ (\textit{approx.}).$$

17. Total expenditure during 2009

= ₹ (324 + 101 + 3.84 + 41.6 + 74) lakh

= ₹ 544.44 lakh.

18. Total amount of interest paid during the period

= ₹ (23.4 + 32.5 + 41.6 + 36.4 + 49.4) lakhs

= ₹ 183.3 lakh

Average amount of interest paid per year

$$= ₹\left(\frac{183.3}{5}\right) \text{lakh} = ₹\ 36.66 \text{ lakh}.$$

19. Total expenditure in 2007

= ₹ (288 + 98 + 3.00 + 23.4 + 83) lakh

= ₹ 495.4 lakh

Total expenditure in 2011

= ₹ (420 + 142 + 3.96 + 49.4 + 98) lakh

= ₹ 713.36 lakh.

Let 495.4 = x % of ₹ 713.36.

Then,

$$\frac{x}{100} \times 713.36 = 495.4$$

$$\Rightarrow x = \left(\frac{495.40}{713.36} \times 100\right) = \left(\frac{12385}{17834} \times 100\right) = 69.4\% \simeq 69\%.$$

20. Total amount of bonus paid

= ₹ (3 + 2.52 + 3.84 + 3.68 + 3.96) lakh

= ₹ 17 lakh.

Total amount of salary paid

= ₹ (288 + 342 + 324 + 336 + 420) lakh

= ₹ 170 lakh.

$$\text{Required \%} = \left(\frac{17}{1710} \times 100\right)\% = \frac{170}{171}\% = 0.99\% \simeq 1\%.$$

21. Percentage of candidates selected over the candidates appeared in 2007 from various states :

$$\text{Delhi} \rightarrow \left(\frac{94}{8000} \times 100\right)\% = \frac{47}{40}\% = 1.175\%;$$

$$\text{H.P.} \rightarrow \left(\frac{82}{7800} \times 100\right)\% = \frac{41}{39}\% = 1.051\%;$$

$$\text{U.P.} \rightarrow \left(\frac{78}{7500} \times 100\right)\% = \frac{26}{25}\% = 1.040\%;$$

$$\text{Punjab} \rightarrow \left(\frac{85}{8200} \times 100\right)\% = 1.037\%;$$

$$\text{Haryana} \rightarrow \left(\frac{75}{6400} \times 100\right)\% = 1.172\%.$$

Clearly, this percentage is lowest for Punjab.

22. The percentages of those qualified from Punjab over those appeared from Punjab during different years are :

$$2007 \rightarrow \left(\frac{680}{8200} \times 100\right)\% = \frac{340}{41}\% = 8.29\%;$$

$$2008 \rightarrow \left(\frac{600}{6800} \times 100\right)\% = \frac{150}{17}\% = 8.82\%;$$

$$2009 \rightarrow \left(\frac{525}{6500} \times 100\right)\% = \frac{105}{13}\% = 8.08\%;$$

$$2010 \rightarrow \left(\frac{720}{7800}\times 100\right)\% = 9.23\%;$$

$$2011 = \left(\frac{485}{5700}\times 100\right)\% = 8.50\%.$$

Clearly, this percentage is maximum in 2010.

23. The percentage of candidates selected from U.P. over those qualified from U.P. during different years :

$$2007 \rightarrow \left(\frac{78}{720}\times 100\right)\% = 10.83\%$$

$$2008 \rightarrow \left(\frac{85}{620}\times 100\right)\% = 13.71\%;$$

$$2009 \rightarrow \left(\frac{48}{400}\times 100\right)\% = 12\%;$$

$$2010 \rightarrow \left(\frac{70}{650}\times 100\right)\% = 10.77\%;$$

$$2011 \rightarrow \left(\frac{80}{950}\times 100\right)\% = \frac{169}{19}\% = 8.42\%.$$

Clearly, this percentage is highest in 2008.

24. Required percentage

$$= \left\{\frac{(75+75+55+60+75)}{(94+48+82+90+70)}\times 100\right\}\%$$

$$= \left(\frac{340}{384}\times 100\right)\% = \left(\frac{85\times 100}{96}\right)\%$$

$$= \left(\frac{85\times 25}{24}\right)\% = \frac{2125}{24}\% = 88.5\%.$$

25. Average number of candidates per year from various states are

$$\text{Delhi} \rightarrow \frac{(94+48+82+90+70)}{5} = \frac{384}{5} = 76.8;$$

$$\text{H.P.} \rightarrow \frac{(82+65+70+86+75)}{5} = \frac{378}{5} = 75.6;$$

$$\text{U.P.} \rightarrow \frac{(78+85+48+70+80)}{5} = \frac{361}{5} = 72.2;$$

$$\text{Punjab} \rightarrow \frac{(85+70+65+84+60)}{5} = \frac{364}{5} = 72.8;$$

$$\text{Haryana} \rightarrow \frac{(75+75+55+60+75)}{5} = \frac{340}{5} = 68.$$

Clearly, this average is maximum for Delhi.

26. Required percentage

$$= \left\{\frac{(82+70+48+65+55)}{(640+560+400+525+350)}\times 100\right\}\%$$

$$= \left(\frac{320}{2475}\times 100\right)\% = \frac{1280}{99}\% = 12.92\% \simeq 13\%.$$

27. Aggregate marks obtained by Sajal

= (90% of 150) + (60% of 130) + (70% of 120) + (70% of 100) + (90% of 60) + (70% of 40)

= (135 + 78 + 84 + 70 + 54 + 28) = 449.

28. Aggregate marks obtained by Tarun

= (65% of 150) + (35% of 130) + (50% of 120) + (77% of 100) + (80% of 60) + (80% of 40)

= (97.5 + 45.5 + 60 + 77 + 48 + 32) = 360.

Total maximum marks of all the 6 subjects

= (150 + 130 + 120 + 100 + 60 + 40) = 600.

Overall percentage of Tarun

$$= \left(\frac{360}{600}\times 100\right)\% = 60\%.$$

29. Total marks obtained in Physics by all the 7 students

= (90% of 120) + (80% of 120) + (70% of 120) + (80% of 120) + (85 % of 120) + (65 % of 120)+ (50 % of 120)

= (108 + 96 + 84 + 96 + 102 + 78 + 60) = 624.

$\therefore$ Average marks obtained by them in Physics

$$= \frac{624}{7} = 89.14.$$

30. From the given table it is clear that Sajal and Rohit obtained 60% or more marks in each of the 6 subjects.

31. For each subject, we find the overall percentage as under:

(*i*) Maths $= \left[\frac{1}{7}\times(90+100+90+80+80+70+65)\right]\%$

$$= \left[\frac{1}{7}\times(575)\right]\% = 82.14\%.$$

(*ii*) Chemistry

$$= \left[\frac{1}{7}\times(50+80+60+65+65+75+35)\right]\%$$

$$= \left[\frac{1}{7}\times(430)\right]\% = 61.43\%.$$

(*iii*) Physics

$$= \left[\frac{1}{7}\times(90+80+70+80+85+65+50)\right]\%$$

$$= \left[\frac{1}{7}\times(520)\right]\% = 74.29\%.$$

(*iv*) Geography

$$= \left[\frac{1}{7}\times(60+40+70+80+95+85+77)\right]\%$$

$$= \left[\frac{1}{7}\times(507)\right]\% = 72.43\%.$$

(*v*) History $= \left[\frac{1}{7}\times(70+80+90+60+50+40+80)\right]\%$

$$= \left[\frac{1}{7}\times(470)\right]\% = 67.14\%.$$

(*vi*) Computer Science

$$= \left[\frac{1}{7}\times(80+70+70+60+90+60+80)\right]\%$$

$$= \left[\frac{1}{7}\times(510)\right]\% = 72.86\%.$$

Clearly, this percentage is highest for Maths.

32. Total population of State S = 7 million.

$\therefore$ Population above poverty line

= [(100 − 19)% of 7] million

= (81% of 7) million = 5.67 million.

And so, the number of females above poverty line in State S $= \left(\frac{3}{7}\times 5.67\right)$ million $= 2.43$ million.

33. Let the total population of State R be x million.

Then, population of State R above poverty line
$= [(100 - 24)\%$ of $x]$ million
$= \left(\frac{76}{100}\times x\right)$ million.

And so, male population of State R above poverty line $= \left[\frac{2}{5}\times\left(\frac{76}{100}\times x\right)\right]$ million.

But, it is given that male population of State R above poverty line = 1.9 million.

$\therefore \quad \frac{2}{5}\times\left(\frac{76}{100}\times x\right)=1.9 \Rightarrow x=\frac{5\times 100\times 1.9}{76\times 2}=6.25.$

$\therefore$ Total population of State R = 6.25 million.

34. Female population below poverty line for State P = 2.1 million.

Let the male population below poverty line for State P be x million.

Then $5 : 6 = x : 2.1 \Rightarrow \frac{x}{2.1}=\frac{5}{6} \Rightarrow x=\frac{2.1\times 5}{6}=1.75.$

$\therefore$ Population below poverty line for State P = (2.1 + 1.75) million = 3.85 million.

Let the population above poverty line for State P be y million.

Since, 35% of the total population of State P is below poverty line, therefore, 65% of the total population of State P is above poverty line. So, the ratio of population below poverty line to that above poverty line for State P is 35 : 65.

$\therefore \quad 35 : 65 = 3.85 : y \Rightarrow y=\frac{65\times 3.85}{35}=7.15.$

$\therefore$ Population above poverty line for State P = 7.15 million and so, male population above poverty line for State $P = \left(\frac{6}{13}\times 7.15\right)$ million $= 3.3$ million.

35. For State Q:

Male population below poverty line = 2.4 million.

Let the female population below poverty line be x million.

Then, $3 : 5 = 2.4 : x$

$\Rightarrow x=\frac{5\times 2.4}{3}=4.$

$\therefore$ Total population below poverty line
$= (2.4 + 4) = 6.4$ million.

Let the total population of Q be p. Then,
25% of p = 6.4 million

$\Rightarrow \frac{25}{100}\times p=6.4 \Rightarrow p=(6.4\times 4)=25.6$ million.

For State T:

Male population below poverty line = 6 million.

Let the female population below poverty line be y million.

Then, $5 : 3 = 6 : y \Rightarrow y = \frac{3\times 6}{5} = 3.6.$

$\therefore$ Total population below poverty line
$= (6 + 3.6) = 9.6$ million.

Let the total population of State T be q. Then,
15% of q = 9.6 million

$\Rightarrow \frac{15}{100}\times q=9.6 \Rightarrow q=\left(9.6\times\frac{20}{3}\right)=64$ million.

$\therefore$ Required ratio $= \frac{p}{q}=\frac{25.6}{64}=0.4=\frac{4}{10}=\frac{2}{5}=2:5.$

EXERCISE – III

Directions (*Questions 1 to 5*): *Study the table and answer the given questions.*

Months	Gross Revenue	Amount Allocated for Commission	Amount Allocated for discount and offer	Net Revenue
March	₹ 360000	₹ 31200	—	—
April	₹ 320000	₹ 28000	₹ 16000	—
May	—	—	₹ 36000	₹ 336000
June	—	₹ 42000	₹ 30200	₹ 330000
July	—	₹ 00	₹ 28000	₹ 362000

Note: I. Net revenue = Gross revenue – Amount allocated for commission – amount allocated for discount and others.

II. Few values are missing in the table (indicated by–). A candidate is expected to calculate the missing value, It is required to answer the given question on the basis of the given data and the information.

1. In July, if 40% of the Gross revenue of the magazine was collected from advertisement, what was the amount of Gross revenue collected from advertisement in that particular month?

[IBPS—RRB (Off. Gr. 'B') Exam, 2015]

(*a*) ₹ 148000 (*b*) ₹ 164000 (*c*) ₹ 144000 (*d*) ₹ 172000 (*e*) ₹ 156000

2. In March, if Net revenue of the magazine was 85% of its Gross revenue, what was the amount allocated for discount and others? **[IBPS—RRB (Off. Gr. 'B') Exam, 2015]**

(a) ₹ 23200 (b) ₹ 24200 (c) ₹ 22400 (d) ₹ 22800 (e) ₹ 21600

3. Amount allocated for commission in March is what percent less than the amount allocated for commission in July? **[IBPS—RRB (Off. Gr. 'B') Exam, 2015]**

(a) 24% (b) 18% (c) 28% (d) 32% (e) 22%

4. What is the difference between Net revenue of the magazine in April and its Gross revenue in June? **[IBPS—RRB (Off. Gr. 'B') Exam, 2015]**

(a) ₹ 132000 (b) ₹ 126000 (c) ₹ 118000 (d) ₹ 124000 (e) ₹ 136000

5. In May, the respective ratio of amount allocated for commission and amount allocated for discount and others was 4 : 3. What was the Gross revenue of the magazine in May? **[IBPS—RRB (Off. Gr. 'B') Exam, 2015]**

(a) ₹ 424000 (b) ₹ 440000 (c) ₹ 380000 (d) ₹ 420000 (e) ₹ 430000

Directions (*Questions 6 to 10*): *Refer to the table and answer the questions that follow:*

Data related to performance of 6 batsmen in a tournament:

Name of the batsman	Number of matches played in the tournament	Average runs scored in the tournament	Total balls faces in the tournament	Strike Rate
A	8	—	—	129.6
B	20	81	—	—
C	—	38	400	114
D	—	—	—	72
E	28	55	1280	—
F	—	—	—	66

Note: (i) Strike rate = (Total runs scored/Total balls faced) × 100

(ii) All the given batsmen could bat in all the given matches played by them.

(iii) Few values are missing in the table (indicated by –) A candidate is expected to calculate the missing value, if it is required to answer the given question, on the basis of the given data and information.

6. The respective ratio between total number of balls faced by D and that by F in the tournament is 3 : 4. Total number of runs scored by F in the tournament is what percent more than the total runs scored by D in the tournament? **[RBI Gr. 'B' (Phase – I) Exam, 2015]**

(*a*) $22\frac{2}{9}$ (*b*) $32\frac{4}{9}$ (*c*) $18\frac{8}{9}$ (*d*) $24\frac{4}{9}$ (*e*) $28\frac{2}{9}$

7. If the runs scored by E in last 3 matches of the tournament are not considered, his average runs scored in the tournament will decrease by 9. If the runs scored by E in the 26th and 27th match are below 128 and no two scores among these 3 scores are equal, what are the minimum possible runs scored by E in the 28th match? **[RBI Gr. 'B' (Phase – I) Exam, 2015]**

(*a*) 137 (*b*) 135 (*c*) 141 (*d*) 120.31 (*e*) 139

8. In the tournament, the total number of balls faced by batsman A is 74 less than the total number of runs scored by him. What is the average run scored by batsman A in the tournament? **[RBI Gr. 'B' (Phase – I) Exam, 2015]**

(*a*) 42.5 (*b*) 39.5 (*c*) 38 (*d*) 44 (*e*) 40.5

9. Batsman B faced equal number of balls in first 10 matches he played in the tournament and last 10 matches he played in the tournament. If his strike rate in first 10 matches and last 10 matches of the tournament are 120 and 158 respectively, what is the total number of balls faced by him in the tournament? **[RBI Gr. 'B' (Phase – I) Exam, 2015]**

(*a*) 1150 (*b*) 1400 (*c*) 1200 (*d*) 1446.42 (*e*) 1500

10. What is the number of matches played by batsman C in the tournament?

[RBI Gr. 'B' (Phase – I) Exam, 2015]

(*a*) 10 (*b*) 16 (*c*) 12 (*d*) 18 (*e*) 8

Directions (*Questions 11 to 15*): *Study the table carefully and answer the given questions.*

Total exports of six countries over five years (in ₹ crore)

Years → / Country ↓	1998	1999	2000	2001	2002
P	20	40	60	45	90
Q	30	25	15	50	100
R	50	55	70	90	65
S	45	60	20	15	25
T	60	50	55	100	110
U	24	40	60	75	120

Note: Profit = Exports – Imports

11. What was the profit of all the countries together in the year 2002 if the total imports of all the countries together was ₹ 385 crore?

[IBPS—Bank Spl. Officer (IT) Exam, 2015]

(*a*) ₹ 125 crore (*b*) ₹ 160 crore (*c*) ₹ 280 crore (*d*) ₹ 240 crore (*e*) ₹ 200 crore

12. If the ratio of export to import in country S and country U is 1 : 2 and 4 : 1 in the year 1998, then what is the total import of country U and S together in that particular years? (In ₹ crore)

[IBPS—Bank Spl. Officer (IT) Exam, 2015]

(*a*) 52 (*b*) 92 (*c*) 96 (*d*) 65 (*e*) 44

13. If the export of country P in the year 2003 is 20% more than the total export of country Q in 2001 and the export of country T in 2000 together, then what was the profit of P in the year 2003 if its import was ₹ 92 crore for that year? (in ₹ crore)

[IBPS—Bank Spl. Officer (IT) Exam, 2015]

(*a*) 10 (*b*) 58 (*c*) 22 (*d*) 46 (*e*) 34

14. By what per cent is the average export of country T over all the given years more than the average export of country R over all the given years?

[IBPS—Bank Spl. Officer (IT) Exam, 2015]

(*a*) $13\frac{7}{11}\%$ (*b*) $9\frac{1}{11}\%$ (*c*) $13\frac{5}{7}\%$ (*d*) $4\frac{7}{11}\%$ (*e*) $12\frac{1}{7}\%$

15. What is the percentage increase in the export of all the countries together during the year 1999 to 2001? (rounded off to two digits after decimal)

[IBPS—Bank Spl. Officer (IT) Exam, 2015]

(*a*) 88.99% (*b*) 72.39% (*c*) 38.89% (*d*) 62.89% (*e*) 40.60%

Directions (*Questions 16 to 20*): *Study the table carefully and answer the given questions.*

Number of pages printed by 5 printers during 5 days

Printers / Days	A	B	C	D	E
Monday	139	147	211	141	184
Tuesday	141	189	164	189	151
Wednesday	115	141	159	156	136
Thursday	89	223	120	147	113
Friday	187	93	257	160	124

16. What is the respective ratio between total number of pages printed by printer B on Wednesday and Thursday together and total number of pages printed by printer C on Monday and Friday together?

[United India Insurance Co. Ltd. Assistant (Online) Exam, 2015]

(*a*) 7 : 9 (*b*) 9 : 11 (*c*) 11 : 13 (*d*) 7 : 11 (*e*) 9 : 11

17. What is the difference between total number of pages printed by printers C and D together on Tuesday and total number of pages printed by printers A and E together on Thursday?

[United India Insurance Co. Ltd. Assistant (Online) Exam, 2015]

(*a*) 153 (*b*) 149 (*c*) 161 (*d*) 151 (*e*) 157

18. The number of pages printed by printer A on Wednesday is what percent of the number of pages printed by printer D on Friday?

[United India Insurance Co. Ltd. Assistant (Online) Exam, 2015]

(*a*) $65\frac{1}{8}$ (*b*) $69\frac{1}{4}$ (*c*) $71\frac{7}{8}$ (*d*) $75\frac{3}{8}$ (*e*) $65\frac{1}{4}$

19. What is the average number of pages printed by printer B on Monday, Tuesday and Friday?

[United India Insurance Co. Ltd. Assistant (Online) Exam, 2015]

(*a*) 138 (*b*) 143 (*c*) 151 (*d*) 139 (*e*) 147

20. The number of pages printed by printer E on Monday is what percent more than the number of pages printed by printer C on Thursday?

[United India Insurance Co. Ltd. Assistant (Online) Exam, 2015]

(*a*) $60\frac{1}{3}$ (*b*) $51\frac{2}{3}$ (*c*) $45\frac{2}{3}$ (*d*) $53\frac{1}{3}$ (*e*) $55\frac{1}{3}$

Directions (*Questions 21 to 25*): *Study the table carefully and answer the given question:*

Publishing Houses	Number of Books Published	Ratio of Academic and Non-academic Books	Percentage of Books distributed	Number of distributors in publishing house
M	28200	7 : 3	81	17
N	32200	5 : 9	74	23
O	29700	6 : 5	92	18
P	31200	8 : 5	86	24
Q	33800	7 : 6	79	25
R	35700	11 : 6	82	21
S	37800	5 : 13	89	24

21. What is the difference between the number of academic books published by publishing house M and P?

[IDBI Bank (Executive Officer's) Exam, 2015]

(*a*) 450 (*b*) 640 (*c*) 540 (*d*) 504 (*e*) None of these

22. How many books were given to each distributor by publisher Q if each publisher gets equal number of books?

[IDBI Bank (Executive Officer's) Exam, 2015]

(*a*) 1806 (*b*) 1068 (*c*) 1608 (*d*) 1308 (*e*) None of these

23. What is the average number of non-academic books published by publishers R and S?

[IDBI Bank (Executive Officer's) Exam, 2015]

(*a*) 18750 (*b*) 18850 (*c*) 19950 (*d*) 18950 (*e*) 19990

24. If the total number of books published by publishers P, Q and R is increased by 30% and the total number of books published by remaining publishers be decreased by 20%, what will be the new average of books published by all the publishers?

[IDBI Bank (Executive Officer's) Exam, 2015]

(*a*) 33418 (*b*) 33318 (*c*) 32518 (*d*) 33618 (*e*) None of these

25. What is the total number of books distributed by publishers O and Q?

[IDBI Bank (Executive Officer's) Exam, 2015]

(*a*) 26702 (*b*) 27324 (*c*) 55026 (*d*) 54026 (*e*) None of these

ANSWERS

1. (*d*)	**2.** (*d*)	**3.** (*e*)	**4.** (*b*)	**5.** (*d*)	**6.** (*a*)	**7.** (*d*)	**8.** (*e*)	**9.** (*a*)	**10.** (*c*)
11. (*a*)	**12.** (*c*)	**13.** (*e*)	**14.** (*a*)	**15.** (*c*)	**16.** (*a*)	**17.** (*d*)	**18.** (*c*)	**19.** (*b*)	**20.** (*d*)
21. (*c*)	**22.** (*b*)	**23.** (*c*)	**24.** (*b*)	**25.** (*d*)					

SOLUTIONS

1. Gross revenue of July collected from advertisement
= 362000 +28000 + 40000
= 390000 + 40000 = 430000
Gross revenue collected from advertisement
$= 430000 \times \frac{40}{100} = 4300 \times 40 = ₹172000$

2. In March,
Net revenue $= 360000 \times \frac{85}{100} = 306000$
$\therefore$ Amount allocated for discount and others.
$= 360000 - 306000 - 31200 = 54000 - 31200 = \because 22800$

3. Amount collected for commission in March = 31200
Amount collected for commission in July = 40000
Required percentage $= \frac{8800}{40000} \times 100 = 22\%$

4. Net revenue in April = 320000 – 44000 = ₹ 276000
Gross revenue in June = 330000 + 72000 = ₹ 402000
Required difference = 402000 – 276000 = ₹ 126000

5. In May, ratio of amount allocated for commission and Amount allocated for discount = 4 : 3
In May, amount allocated for commission = 4 × 12000 and 3 × 12000
Amount allocated for discount = 48000 and 36000
$\because$ Gross revenue in May net revenue + amount allocated for commission = 336000 + 84000 = ₹ 420000

6. Let the total number of balls faces by D = 3x and the total number of balls faced by F = 4x. According to the question, the total number of runs made by D.

$$= \frac{72\times 3x}{100} = \frac{216x}{100}$$

The total number of runs made by F

$$= \frac{66\times 4x}{100} = \frac{264x}{100}$$

The more runs made by F as compare to D

$$\frac{264x}{100} - \frac{216x}{100} \times \frac{48x}{100}$$

So, the percentage of more runs

$$\frac{\frac{48x}{100}}{\frac{216x}{100}} \times 100 - \frac{48x}{100} \times \frac{100}{216x} \times 100 = \frac{200}{9} = 22\frac{2}{9}$$

7. Total runs scored by batsman E = 28 × 55
The strike rate of E.

$$= \frac{\text{Total runs scored}}{\text{Total balls faced}} \times 100$$

$$= \frac{28\times 55}{1280} \times 100 = 120.3125$$

8. Let the total number of runs scored by a batsman = x
Since given that strike rate, according to the question,

$$129.6 = \frac{x}{x-74} \times 100$$

$129.6x - 129.6\times 74 = 100x$

$$x = \frac{129.6\times 74}{29.6} = 324$$

So, the average run scored by the batsman A

$$= \frac{324}{8} = 40.5$$

9 Combined Strike rate of 20 matches $= \frac{120+158}{2} = 139$

Total balls faced

$$= \frac{\text{Total runs scored}}{\text{Strike rate}} \times 100 = \frac{20\times 81}{139} \times 100 = 1165.43 \approx 1150$$

10. The number of matches played by batsman C
The total runs scored

$$\frac{\text{Total runs made by C}}{\text{Average runs scored}}$$

The total runs scored $= \frac{\text{Strike rate} \times \text{total ball faced}}{100}$

$$= \frac{114\times 400}{100} = 456$$

So, the number of matches played by batsman C

$$= \frac{456}{38} = 12$$

11. Total import of all countries together in 2002
= ₹ 385 crore
Now, in 2002 total export of all companies together
= 90 + 100 + 65 + 25 + 110 + 120 = 510 crore
Total profit in 2002 = 510 – 385 = 125 crore

12. Import of company S in the year

$$1998 = \frac{45\times 2}{1} = ₹\ 90 \text{ crore}$$

Import of company U in the year 1998

$$= 24 \times \frac{1}{4}\ ₹\ 6 \text{ crore}$$

Total import of company U and S together in 1998
= ₹ (90 + 6) = ₹ 96 crore

13. Total export of country Q in 2001 = ₹50 crore.
Total export of country T in 2000 = ₹55 crore
Total export = 50 + 55 = ₹ 105 crore

Now, total export of country P in 2003 = $\frac{105\times120}{100}$

= ₹ 126 crore

Total import of country P in 2003 = ₹ 92 crore

Profit = 126 – 92 = ₹ 34 crore

14. Total export of country T

= 60 + 50 + 55 + 110 + 110 = 376

Average export of Country T = $\frac{375}{5}$ = ₹ 75 crore

Total export of country R = 50 + 55 + 70 + 90 + 65 = 330

Average export of Country R = $\frac{330}{5}$ = ₹ 66 crore

Required% $\frac{75-66}{66}\times100=\frac{9}{66}\times100=\frac{150}{11}\%=13\frac{7}{11}\%$

15. Total export of all countries together in 1999

= 40 + 25 + 55 + 60 + 50 + 40 = ₹ 270 crore

Total export of all countries together in 2001

= 45 + 50 + 90 + 15 + 100 + 75 = ₹ 375 crore

Required % increase

$=\frac{375-270}{270}\times100=\frac{105}{11}\times100=\frac{350}{9}\%=38.88\%\approx38.89\%$

16. Total number of pages printed by printer B on Wednesday and Thursday = 141 + 223 = 364

Total number of pages printed by printer C on Monday and Friday = 211 + 257 = 468

Required Ratio = 364 : 468 = 7 : 9

17. Total number of pages printed by printer C and D together on Tuesday = 164 + 189 = 353

Total number of pages printed by printer A and E together on Thursday = 89 + 113 = 202

Required difference

= 353 – 202 = 151

18. Number of pages printed by printer A on Wednesday = 115

Number of pages printed by printer D on Friday = 160

Required percent = $\frac{115}{160}\times100=\frac{575}{8}=71\frac{7}{8}$

19. Total number of pages printed by printer B on Monday, Tuesday and Friday

= 147 + 189 + 93 = 429

Required average = $\frac{429}{3}=143$

20. Number of pages printed by Printer E on Monday

= 184

Number of pages printed by printer C on Thursday

= 120

Required percent = $\frac{184-120}{120}\times100$

$=\frac{6400}{120}=\frac{160}{3}=53\frac{1}{2}\%$

21. Difference between numbers of books published by publishing house M and P.

$\frac{7}{10}\times28200-\frac{8}{12}\times31200$

= 19740 – 19200 = 540

22. Each publisher get equal number books

$=\frac{79}{100}\times\frac{33800}{25}=1068$

23. The number of non-academic books published by publisher R and S.

$\frac{6}{17}\times35700+\frac{13}{18}\times37800$

= 12600 + 27300 = 39900

The average number of nonacademic books published by Published R and S = $\frac{39900}{2}$ = 19950

24. $\frac{100700\times\frac{130}{100}+127900\times\frac{80}{100}}{7}=\frac{233230}{7}=33318$

25. Total number of books distributed by Publisher O

$=\frac{92}{100}\times29700=27324$

Total number of books distributed by publishers Q

$=\frac{79}{100}+33800=26702$

Total number of books = 27324 + 26702 = 54026