(TYPE 1) Tabulation

Directions for questions 1-4

given below table show the investment (in million) in PSUs. Study the table given below to answer these questions.

Sr. No.	PSUs Name	Investment 20/11/2018	Investment 20/11/2019
1	SAIL	5,980	6,578 ≈ +600
2	CIL	4,700	5,900 ≈ +1200
3	NTPC	3,000	4,300 ≈ +1300
4	ONGC	2,400	3,000 = +600
5	HPCL	1,525	1,850 ≈ +325
6	NTC	933	1,244 ≈ +310
		18,538	22,872 ≈ +4000

1) Comparatively, the percentage increase in investment in the year ending 20 November 2019, was the least in the case of

A) NTC B) HPCL C) SAIL D) ONGC

2) The percentage increase in investment was nearly equal in the case of

A) CIL & ONGC B) CIL & SAIL C) SAIL & NTC D) ONGC & NTPC

3) The increase in investment in NTPC was more than twice to that in

A) NTC B) CIL C) HPCL D) ONGC

4) As compared to the investment for the year ending 20 November 2018, the total investment in all the six enterprises for the year ending 20 November 2019 exceeded approximately by

A) 15% B) 18% C) 20% D) 23%

NW

2) In a survey, 300 respondents were asked whether they own a vehicle or net. If yes, they were further asked to mention whether they own a car or scooter or both. Their responses are tabulated below. What percent of respondents do not own a scooter? **[GATE 2014, 2 MARKS (EE)]**

		Men	Woman
Own vehicle	Car	40	34
	Scooter	30	20
	Both	60	46
Do not own vehicle		20	50

40+34+20+50
= 144

$\frac{144}{300} \times 100$

= 48%.

Ans: 300 → 100%.

1% → 3

150 → 50%.

6 → 2%.

144 → 48%.

3) The data given in the following table summarizes the monthly budget of an average household [GATE]

Category	Amount(₹)
Food	4000
Clothing	1200
Rent	2000
Savings	1500
Other expenses	1800

Total 10500

The approximate percentage of the monthly budget NOT spent on saving is

(A) 10% (B) 14% (C) 81% ~~(D) 86%~~

Total 10500

10500 − 1500

9000

matlab 10500 ka kitna % 9000 hai ?

Agar 10000 salary hoti toh uska 90% hota
lekin 10500 hai toh uska 90% se thoda kam hoga.

4) Mola is a digital platform for taxis in a city. It offers three types of rides-Pool, Mini and Prime. The table below presents the number of rides for the past four months. The platform earns one US dollar per ride. What is the percentage share of revenue contributed by Prime to the total revenues of Mola, for the entire duration?

[GATE 2019]

Type	Month			
	January	February	March	April
Pool	170	320	215	190
Mini	110	220	180	70
Prime	75	180	120	90

A) 16.24 B) 23.97 C) 25.86 D) 38.74

$\Rightarrow 895$
$\Rightarrow 580$
$\Rightarrow 465$
1940

Ans $\frac{465}{1940} \times 100\%$

Or

465 ≈ 500 1940 ≈ 2000

$\frac{500}{2000} \times 100\% = 25\%$.

(But ans 25%. se kam
hona chahiye)

Kyunki 500 se kam hai 465

5) A shaving set company sells 4 different types of razors Elegance, Smooth, Soft and Executive. Elegance sells at ₹48, Smooth at ₹63, Soft at ₹78 and Executive at ₹173 per piece. The table below shows the numbers of each razor sold in each quarter of a year.

Quarter/Product	Elegance	Smooth	Soft	Executive
Q1	27300	20009	17602	9999
Q2	25222	19392	18445	8942
Q3	28976	22429	19544	10234
Q4	21012	18229	16595	10109

Which product contributes the greatest fraction to the revenue of the company in that year?

[GATE-2016, 2 MARKS (CS, CE)]

A) Elegance B) Executive C) Smooth D) Soft

.102K+ × 48 = 80K+ × 63 = 70K × 78 = 59K × 173 =

ab ese sabko + karenge toh calculation bahut lamba ho jayegi toh apan (K) (1000) me assume kar lenge.

27K	20K	17K	10K
25K	19K	18K	9K
28K	22K	19K	10K
21K	18K	16K	10K
102K+	80K+	70K+	39K+

matlab

Directions for questions 1-5 refer the given pie-chart show the expenditure of Mango man to answer these questions.

A = Expenditure on Food
B = House Rent
C = Entertainment
D = Education
E = Medical
F = Savings

Mango man earns a salary of ₹ 9,228 plus 10% HRA per month.

1) What is the actual house rent of Mango man?

A) ₹1,661 B) ₹1,827 C) ₹1,287 D) NOTA

2) If Mango Man wants to save at least ₹30,000 in two years, then how much extra should he save in the second year? (Currently, the rate of interest for savings is 12% p.a. paid annually).

A) ₹ 1,000 B) ₹500 C) He doesn't need to save extra D) NOTA

3) After his savings and payment of house rent, how much money is left with him for other things?

A) ₹7,106 B) ₹7,601 C) ₹7,016 D) NOTA

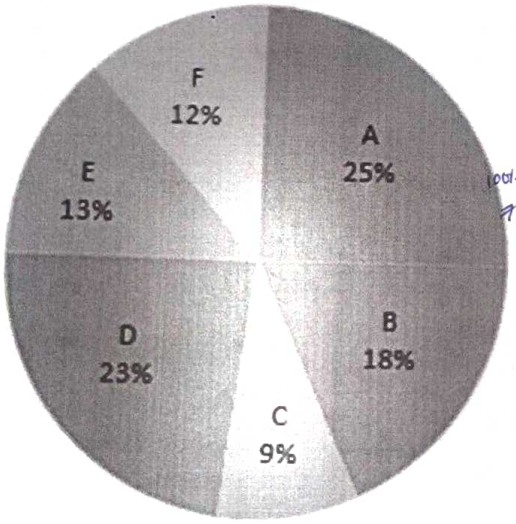
4) How much does X spend on entertainment and food?

A) ₹415 B) ₹835 C) ₹914 D) NOTA

5) If in the next year, a 10% increase in the cost of food and entertainment occurs due to inflation, then what is the new percentage of a savings with the same salary?

A) 8.2% B) 8.6% C) 9.2% D) NOTA

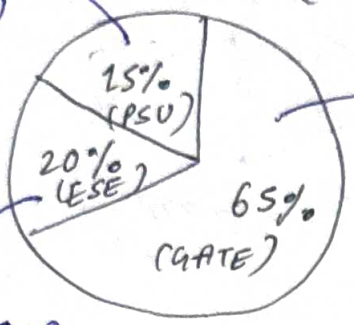
Budget of Mango Man



Pie-Chart (or) Circular Chart

Type ① slices (Given as %)

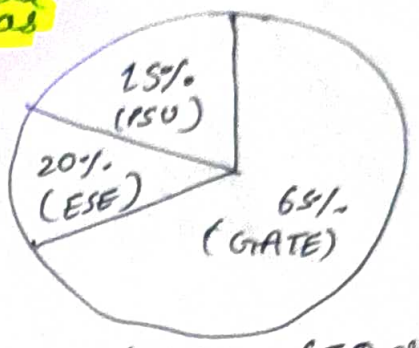
① Students = 1000



$\frac{15}{100} \times 1000$ → 150

65% of 1000 → $\frac{65}{100} \times 1000$ → 650

$\frac{20}{100} \times 1000$ → 200

② 

GATE = 650 students

PSU = ?

ESE = ?

Total = 100%.

65% → 650

1% → 10

100% ⇒ 1000 (Total)

20% ⇒ 200 (ESE)

15% ⇒ 150 (PSU)

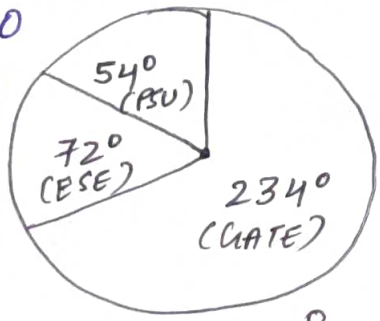
Type ② (slices Given as degree°)

① Students = 1000

Total degree = 360°

$360° = 1000$

$1° = \frac{1000}{360}$



Find no. of students in each exam.

GATE = $\left(\frac{1000}{360}\right) \times 234$ → To find 1° degree value

$= 650$

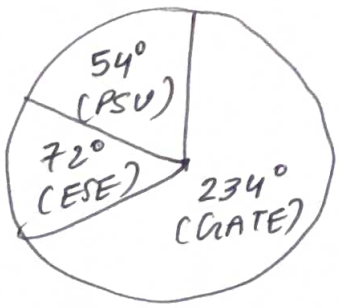
ESE = $\left(\frac{1000}{360}\right) \times 72°$

$= 200$

PSU = $\left(\frac{1000}{360}\right) \times 54°$

$= 150$

② GATE = 650



find total, ESE/PSU students.

$234° = 650$

$1° = \frac{650}{234}$

$360° = \frac{650}{234} \times 360$

$= 1000$ (Total)

$54° = \left(\frac{1000}{360}\right) \times 54$

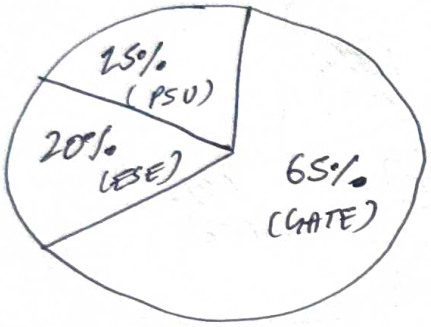
$= 150$ (PSU)

$72° = \left(\frac{1000}{360}\right) \times 72$

$= 200$ (ESE)

Type ③

Percentage form to Angle form



$100\% = 360^\circ$

$10\% = 36^\circ$

$5\% = 18^\circ$

GATE

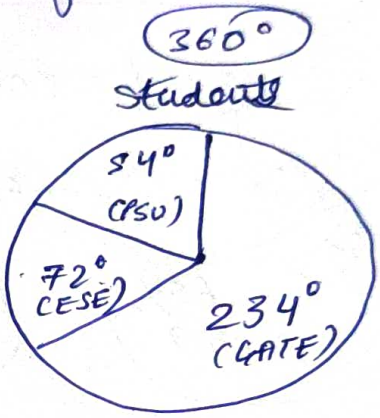
$65\% = 60\% + 5\%$

$= 36 \times 6 + 18^\circ$

$= 234^\circ$

ESE $= 20\%$

$= 2 \times 36^\circ = 72^\circ$



PSU $= 25\%$

$= 10\% + 5\%$

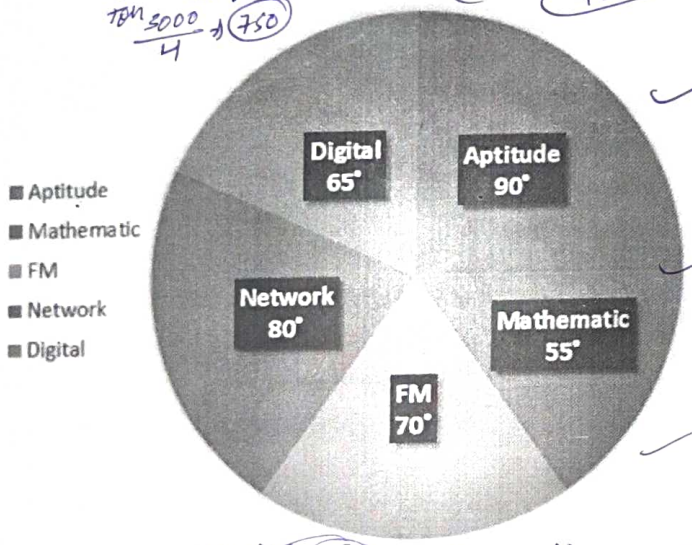
$= 36 + 18$

$= 54^\circ$

Direction *for questions 1-5:* Refer to the pie chart given below and answer the questions that follow.

The given pie chart shows the marks scored by a student in different subjects- Aptitude, Mathematics, FM, Network and Digital in an examination. The values given are in degrees.

Assumption: Total marks obtained in the examination are 900.



1) If the total marks were 3000, then marks in Aptitude would be

A) 800 B) 750 C) 850 D) 900

2) The Marks scored in Aptitude and Mathematics is less than the marks scored in FM and Network by

A) 5% B) 4.33% C) 3.33% D) 4. 6%

3) If the marks scored by the student are 137.5, then the subject is

A) Aptitude B) Mathematics

C) FM D) Network

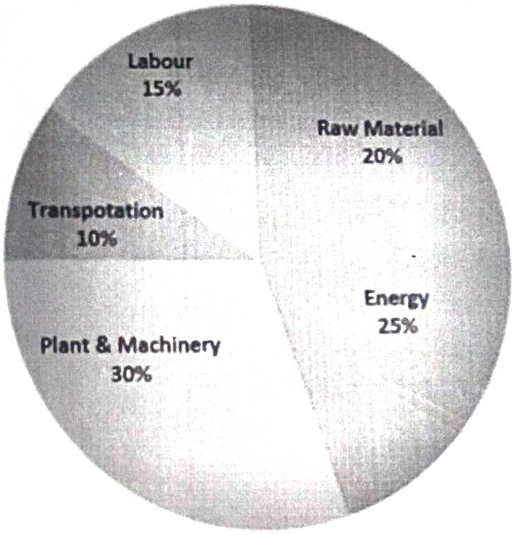
4) Total marks scored in Mathematics and Digital is

A) 400 B) 350 C) 500 D) 300

5) The difference of marks scored in Digital and Network is

A) 37.5 B) 40 C) 20 D) 15

1) A firm producing air purifiers sold 200 units in 2012. The following pie chart present the share of raw material, labour, energy, plant & machinery and transportation costs in the total manufacturing cost of the firm in 2012. The expenditure on labour in 2012 is ₹450000. In 2013, the raw material expenses increased by 30% and all other expenses increased by 20%. If the company registered a profit of ₹ 10 lakhs in 2012, at what price (in ₹) was each air purifier sold? [GATE 2014, 2 MARKS (ME, EC)]



Labour = 450000

15% = 450000

SP (Selling Price) = CP (cost price) + Profit = 40 lakh

30 lakh + (10 lakhs)

100% → (450000/15) × 100

→ 30,00,000

4000000 / 200 (units)

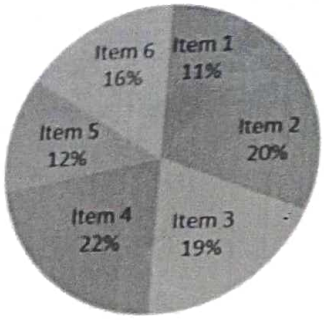
20K

3) The total exports and revenues from the exports of a country are given in the two charts shown below. The pie chart for exports shows the quality of each item exported as a percentage of the total quantity of exports. The pie chart for the revenues shows the percentage of the total revenue generated through export of each item. The total quantity of exports of all the item is 500 thousand tonnes and the total revenues are 250 crore rupees. Which item among the following has generated the maximum revenue per kg?

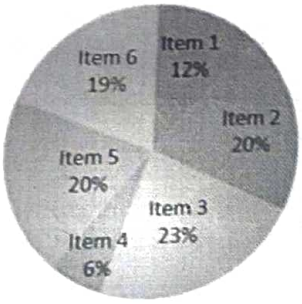
[GATE 2014, 2 MARKS (ME, EC)]

A) Item 2 B) Item 3 C) Item 6 D) Item 5

Exports



Revenues



Item (2)

Quantity → $\frac{500}{100} \times 20 = 100$

Revenue → $\frac{250}{100} \times 20 = 50$

$\frac{R}{Q} \rightarrow \frac{\frac{250}{100} \times 20}{\frac{500}{100} \times 20}$

Item (3) → $\frac{\frac{250}{100} \times 23}{\frac{500}{100} \times 19}$

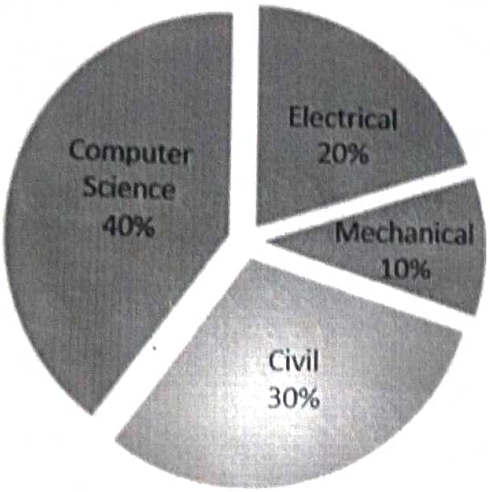
Item with max revenue per quantity →

I2 I4 I6 I5

$\frac{20}{20}$ $\frac{23}{19}$ $\frac{19}{16}$ $\frac{20}{12}$

1 1.1 1.18 1.66

4) The pie chart has the breakup of the number of students from different departments in an engineering college for the year 2012. The proportion of male to female students in each department is 5:4. There are 40 males in Electrical Engineering. What is the difference between the numbers of female students in civil department and the female students in the Mechanical department? **[GATE 2015, 2 MARKS (CS, EE)]**



$\frac{M}{F} = \frac{5}{4}$

20% = 40

10% = 2

100% = 200

Total

5 : 4

×8 (M F) ×8

EE → 40 32

(20%)

ME → 20 (26)

½ (10%)

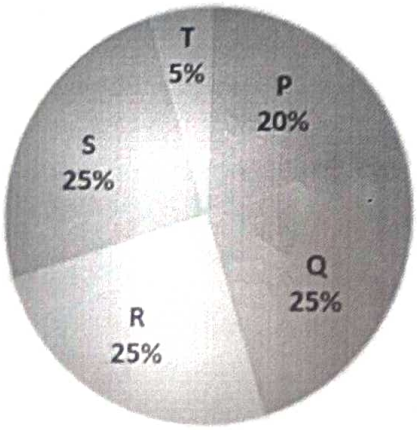
48 − 16 = (32)

EE (30%) → 60 (48)

51) A firm has employees at five different skill levels P, Q, R, S, T. The shares of employment at these skill levels of total employment in 2010 is given in the pie chart as shown. There were a total of 600 employees in 2010 and the total employment increased by 15% from 2010 to 2016. The total employment at skill levels P, Q and R remained unchanged during this period. If the employment at skill level S increased by 40% from 2010 to 2016, how many employees were there at skill level T in 2016? [GATE]

A) 30 B) 35 C) 60 D) 72

PERCENTAGE SHARE OF SKILLS IN 2010



2010 → 600 → (15% ↑, +90) → 2016 → 690

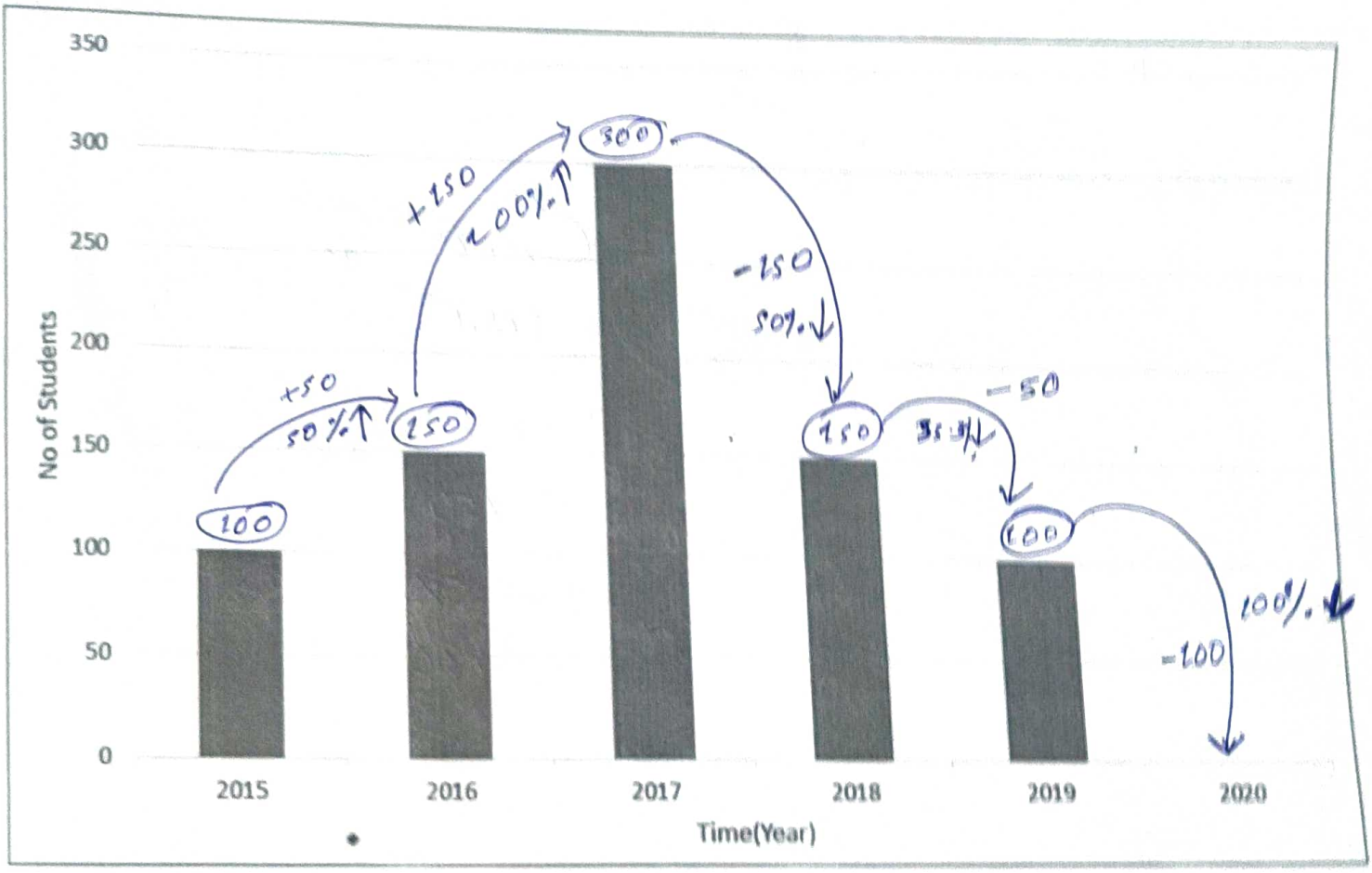
(P, Q, R) (P, Q, S)

S → 25% → (40% ↑, +60) → 210

25% of 600 → 150

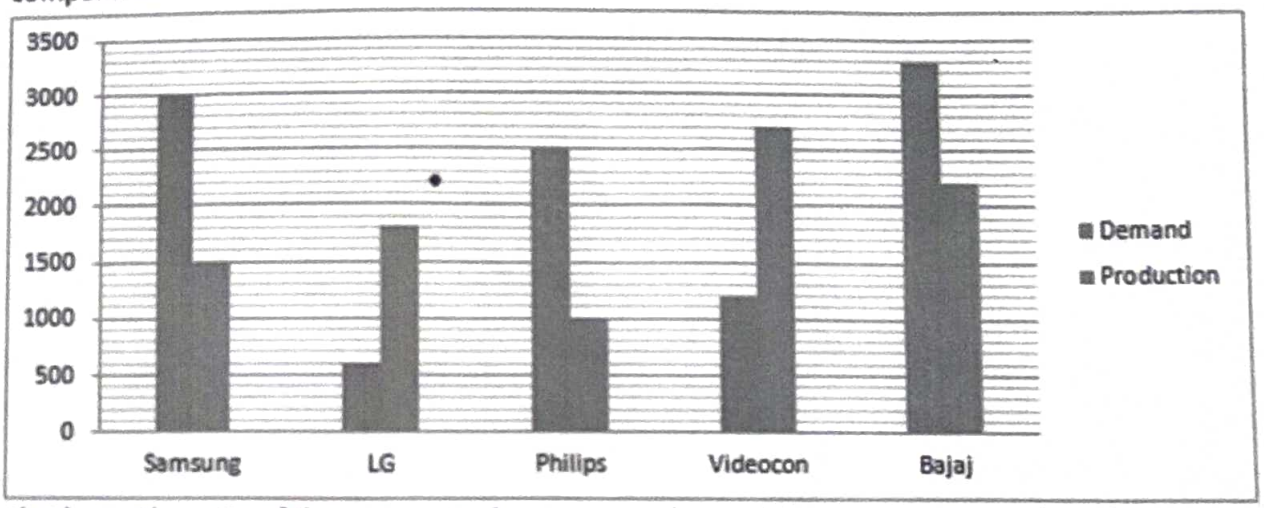
T → 5% → 30 → (+30) → 60

Bar Diagram


350
300
250
200
150
100
50
0
No of Students
100
150
500
150
100
+50
50%↑
+150
200%↑
-150
50%↓
-50
33.3%↓
-100
100%↓
2015
2016
2017
2018
2019
2020
Time(Year)

Directions for questions 1-5

These question based on the graph which show the demand and production statistics of the five companies.



1) What is the ratio of the companies having more demand than production to those having more production than demand?

A) 2:3 B) 4:1 C) 2:2 D) 3:2

2) What is the different between the average demand and the average production of five companies taken together?

A) 1400 B) 400 C) 280 D) 138

3) The production of the Videocon is how many times of the production of the Samsung?

A) 1.8 B) 1.5 C) 2.5 D) 1.11

4) The demand of LG is what percentage of the demand of Philips?

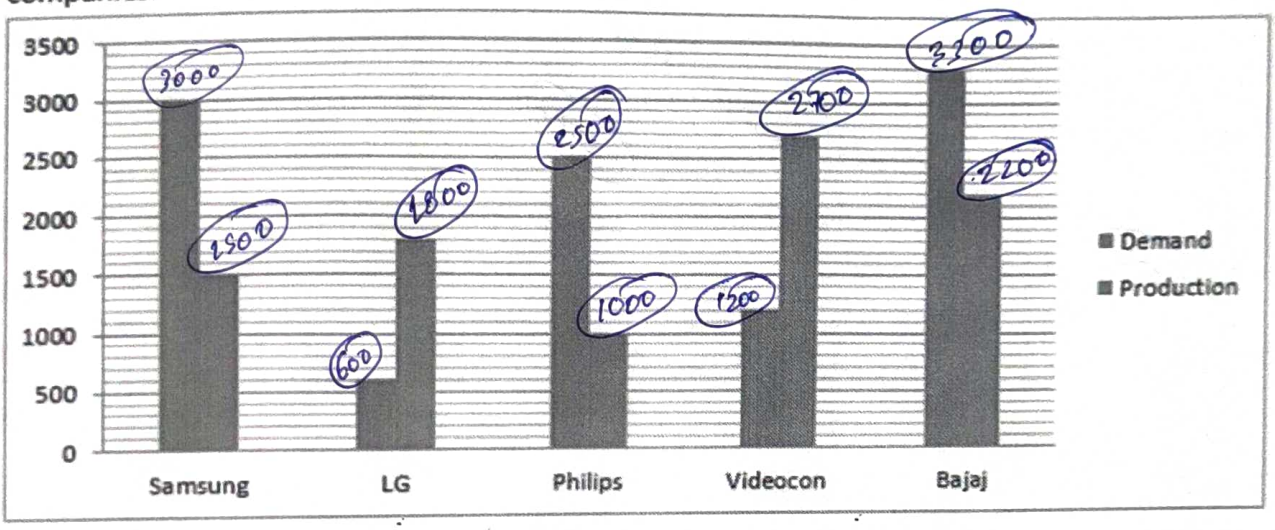
A) 4 B) 24 C) 20 D) 60

5) If Samsung desire to meet the demand by procuring TV sets from a single company, then which one of the following can meet the need adequately?

A) LG B) Philips C) Videocon D) NOTA

Directions for questions 1-5

These question based on the graph which show the demand and production statistics of the five companies.



2) What is the different between the average demand and the average production of five companies taken together?

A) 1400 B) 400 C) 280 D) 138

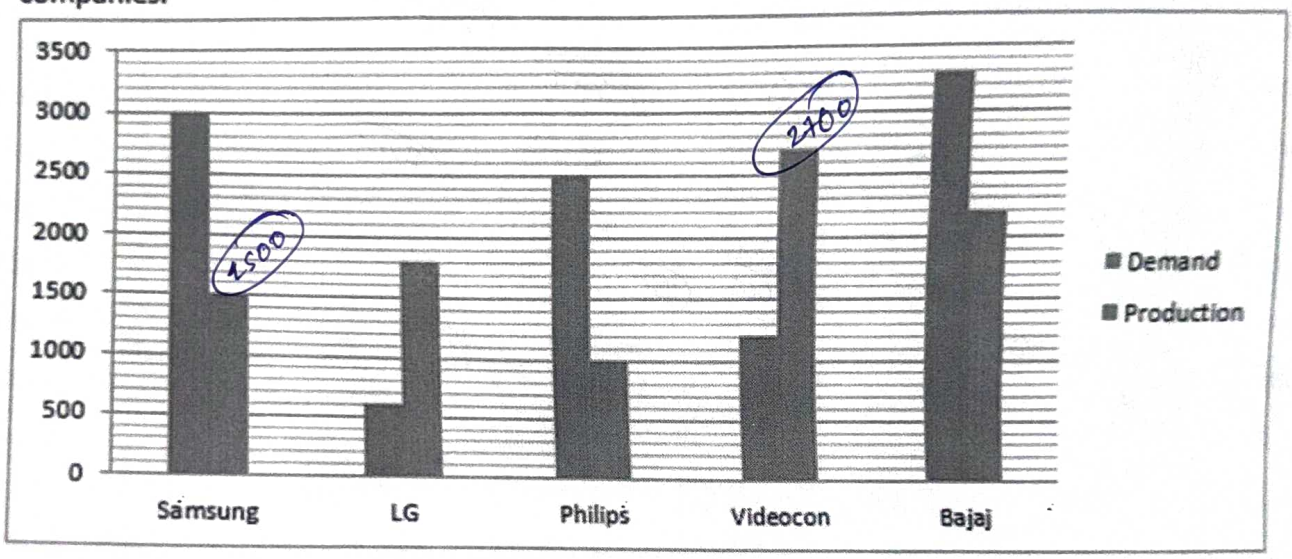
$$\left(\frac{D_1+D_2+D_3+D_4+D_5}{5}\right)-\left(\frac{P_1+P_2+P_3+P_4+P_5}{5}\right)$$

$$\frac{(D_1-P_1)+(D_2-P_2)+(D_3-P_3)+(D_4-P_4)+(D_5-P_5)}{5}$$

$$\frac{1500-1200+1500-1500+1200}{5}=\frac{1400}{5}=280$$

Directions for questions 1-5

These question based on the graph which show the demand and production statistics of the five companies.



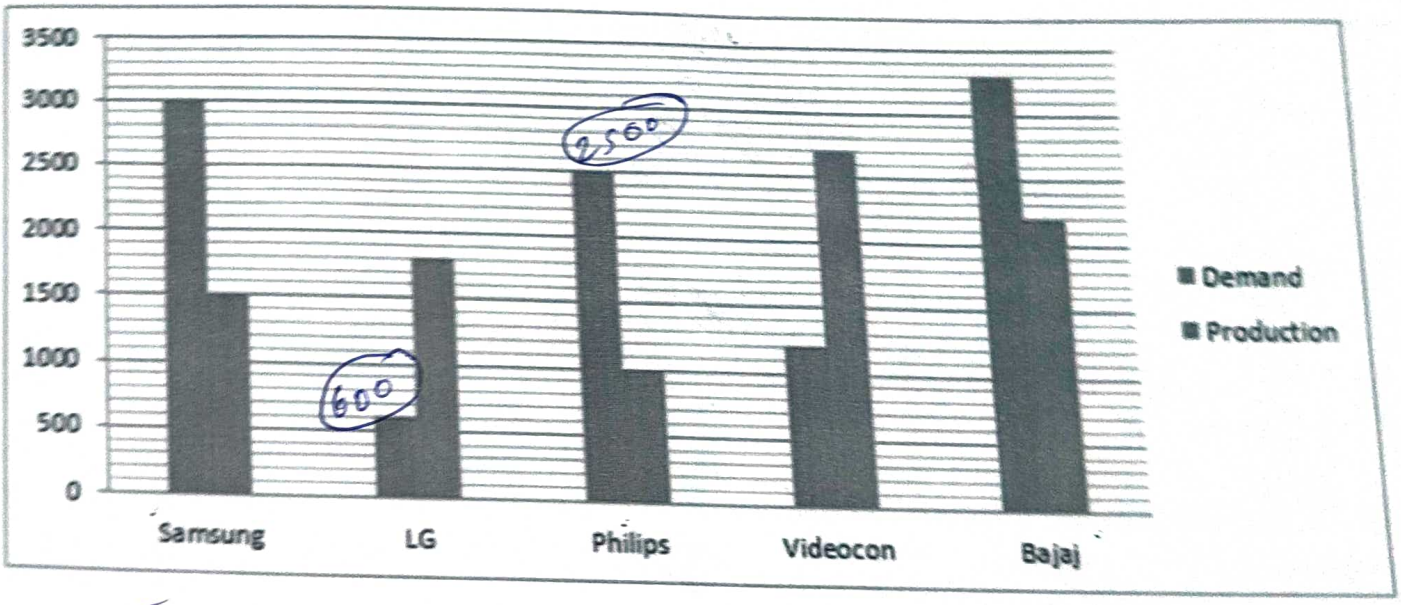
3) The production of the Videocon is how many times of the production of the Samsung?

A) 1.8 B) 1.5 C) 2.5 D) 1.11

$\frac{2700}{1500} = \frac{9}{5} = 1.8$

Directions for questions 1-5

These question based on the graph which show the demand and production statistics of the five companies.



4) The demand of LG is what percentage of the demand of Philips?

A) 4 B) 24 C) 20 D) 60

600

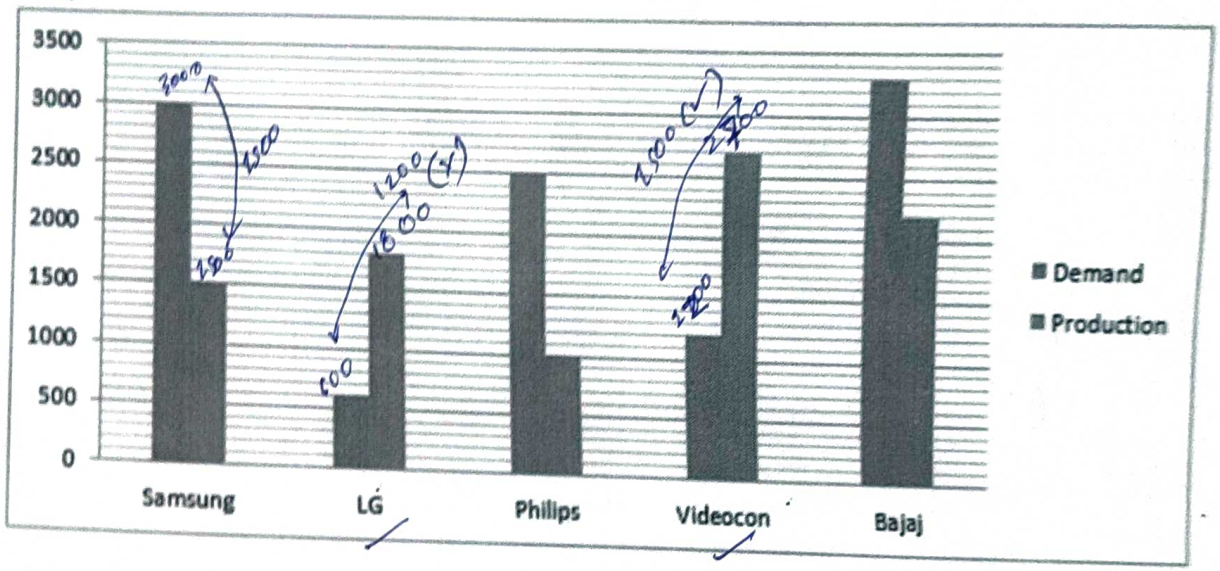
2500

24

600 / 2500 × 100

Directions for questions 1-5

These question based on the graph which show the demand and production statistics of the five companies.

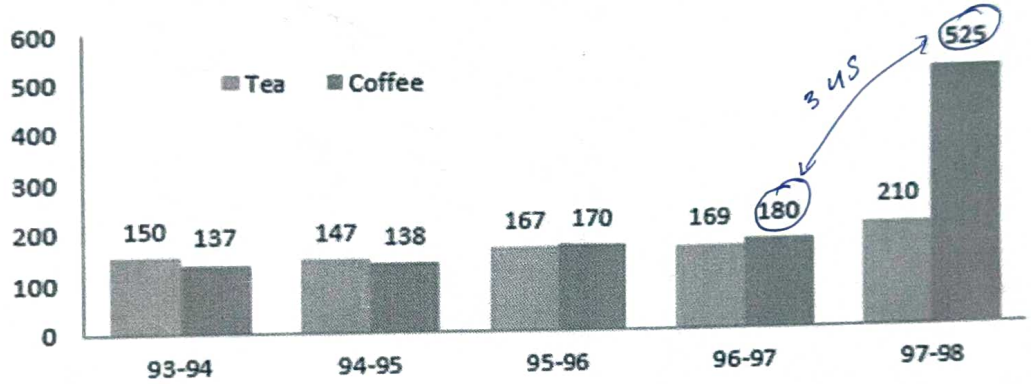


5) If Samsung desire to meet the demand by procuring TV sets from a single company, then which one of the following can meet the need adequately?

A) LG B) Philips C) Videocon D) NOTA

Direction for question 1 and 2: [ONGC 2014]

Study of following bar graph carefully and answer the questions given below.



1) By what approximate percentage the export of the coffee increased from 1996-97 to 1997-98?

A) 190% B) 200% C) 205% D) 195%

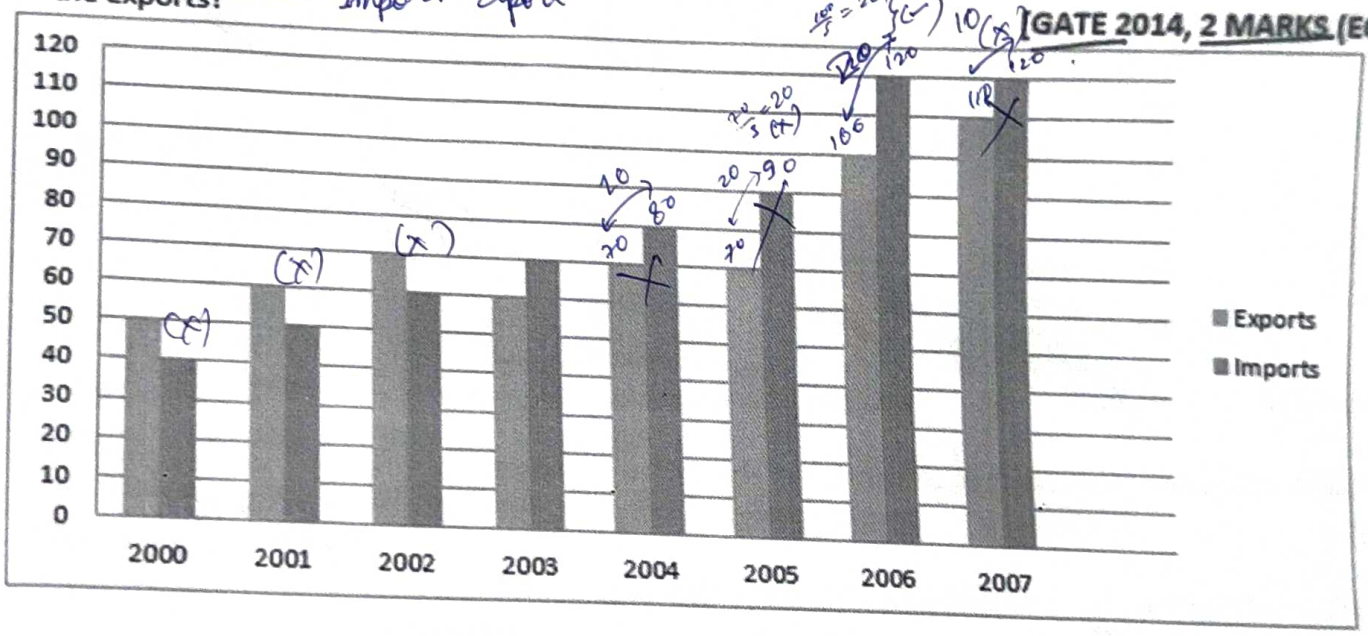
$\frac{345}{180} \times 100 = 191.66\%$

2) Find the ratio of the export of coffee in 1994-95 to that in 1996-97?

A) 69:85 B) 23:30 C) 85:69 D) 30:23

$\frac{138}{180} = \frac{69}{90} = \frac{23}{30}$

3) The exports and imports (in crore of ₹) of a country from 2000 to 2007 are given in the following bar chart. If the trade deficit is defined as excess of imports over exports, in which year is the trade deficit 1/5th of the exports? [GATE 2014, 2 MARKS (EC)]



A) 2005 B) 2004 C) 2007 D) 2006

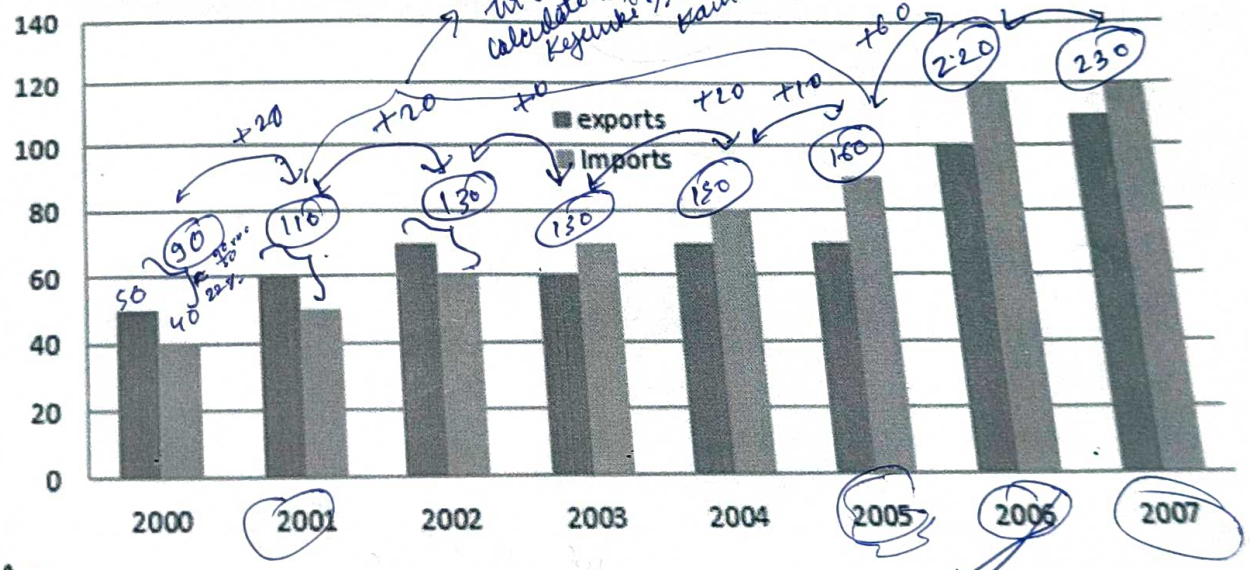
Trade deficit = Import − Export = $\frac{1}{5}$ Export

Import = $\frac{6}{5}$ Export

(Import kda kei Export ko)

4) The exports and imports (in crores of ₹) of a country from the year 2000 to 2007 are given in the following bar chart. In which year is the combined percentage increase in imports and exports the highest?

[GATE 2015, 2 MARKS (CE, CS)]

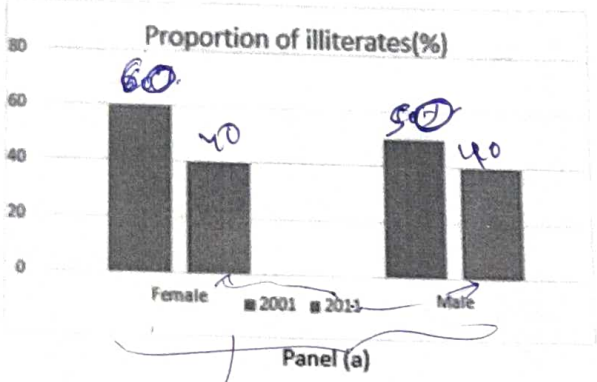


Ans-

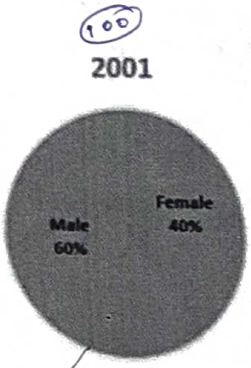
5) The bar graph in Panel (a) show the population of male and female illiterates in 2001 and 2011. The proportions of males and females in 2001 and 2011 are given in Panel (b) and (c), respectively. The total population did not change during this period.

The percentage increased in the total number of literates from 2001 to 2011 is__ [GATE 2019]

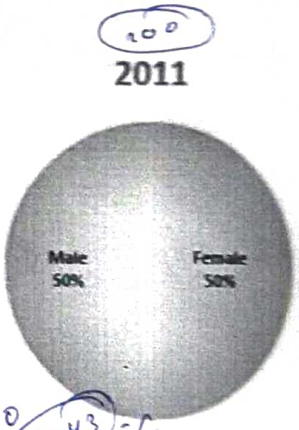
A) 30.43 B) 33.43 C) 34.43 D) 35.43



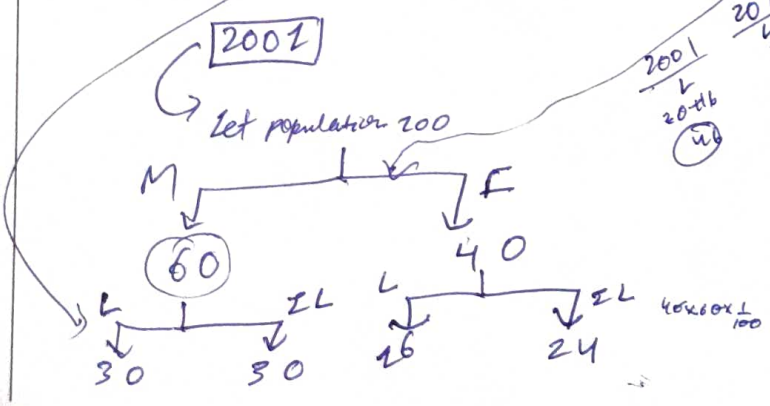
Panel (a)

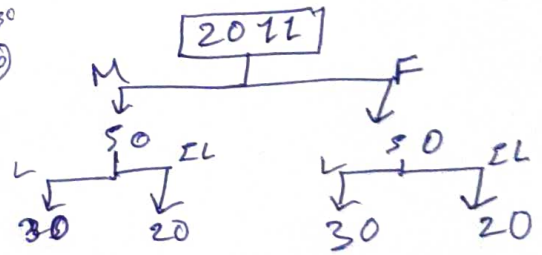


Panel (b)

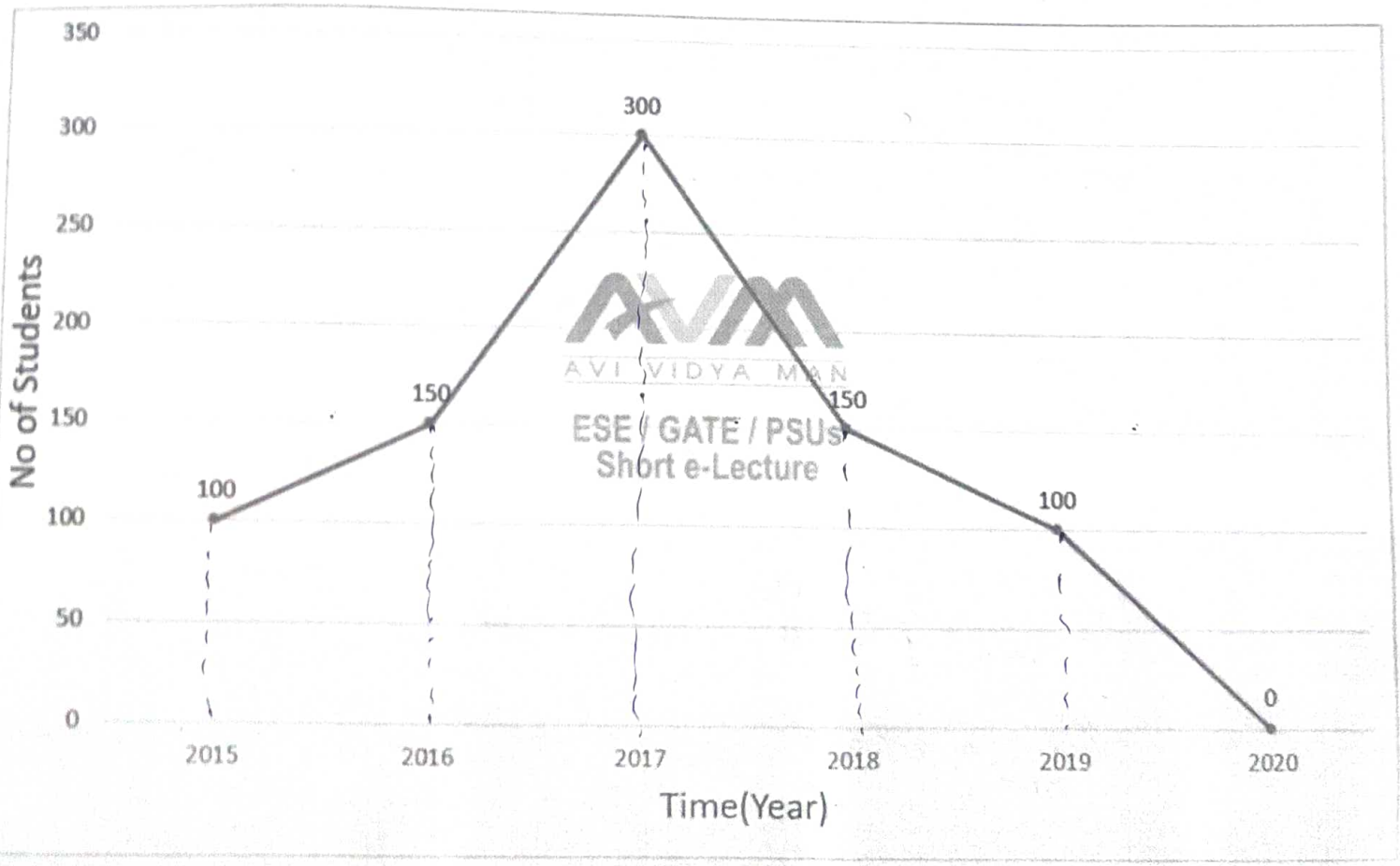


Panel (c)

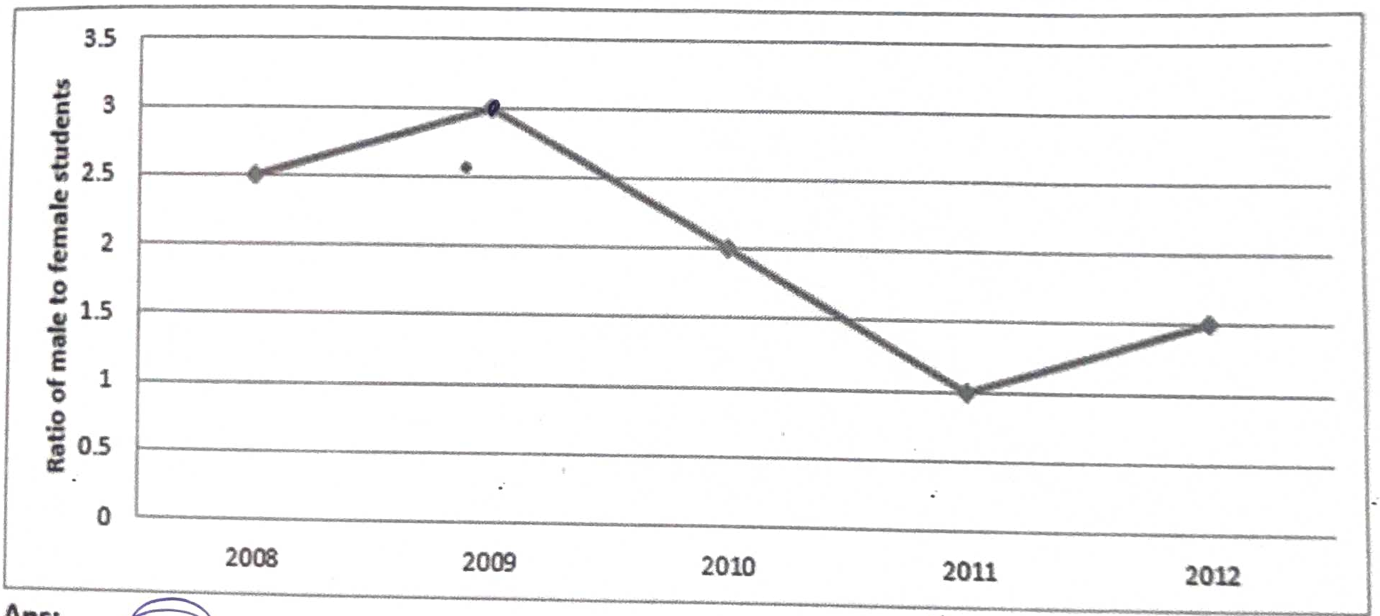




Line Graph


350
300
250
200
150
100
50
0
No of Students
300
150
150
100
100
0
2015
2016
2017
2018
2019
2020
Time(Year)
AVI VIDYA MAN
ESE / GATE / PSUs
Short e-Lecture

1) The ratio of male to female students in a college for five years in plotted in the following line graph. If the number of female students doubled in 2009, by what percent did the number of male students increase in 2009? **[GATE 2014, 2 MARKS (EE)]**



Ans: 140%

$\left(\frac{M}{F}\right)_{2009} = \frac{3}{1} = \frac{12}{4}$

$\left(\frac{M}{F}\right)_{2008} = 2.5 = \frac{5}{2}$

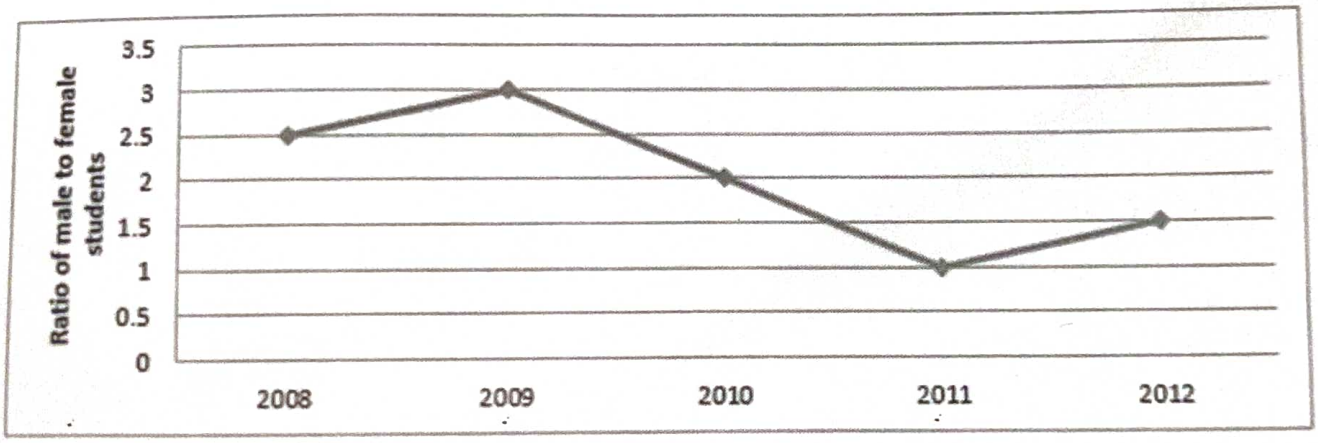
Yahan 2 hai to usko double 4 hona chahiye 2009 mein

$5 \xrightarrow{+7} 12$, 140% ↑

$\frac{7}{5} \times 100 = 140\%$

2) The ratio of male to female students in a college for five years in plotted in the following line graph. If the number of female students in 2011 and 2012 is equal. What is the ratio of male students in 2012 to male students in 2011?

[GATE 2014, 2 MARKS (EE)]



A) 1:1 B) 2:1 C) 1.5:1 D) 2.5:1

$\left(\frac{M}{F}\right)_{2011} = 1 = \frac{1}{1} = \frac{2}{2}$

$\left(\frac{M}{F}\right)_{2012} = 1.5 = \frac{3}{2}$ equal

$\frac{(M)_{2012}}{(M)_{2011}} = \frac{3}{2} = \frac{1.5}{1}$