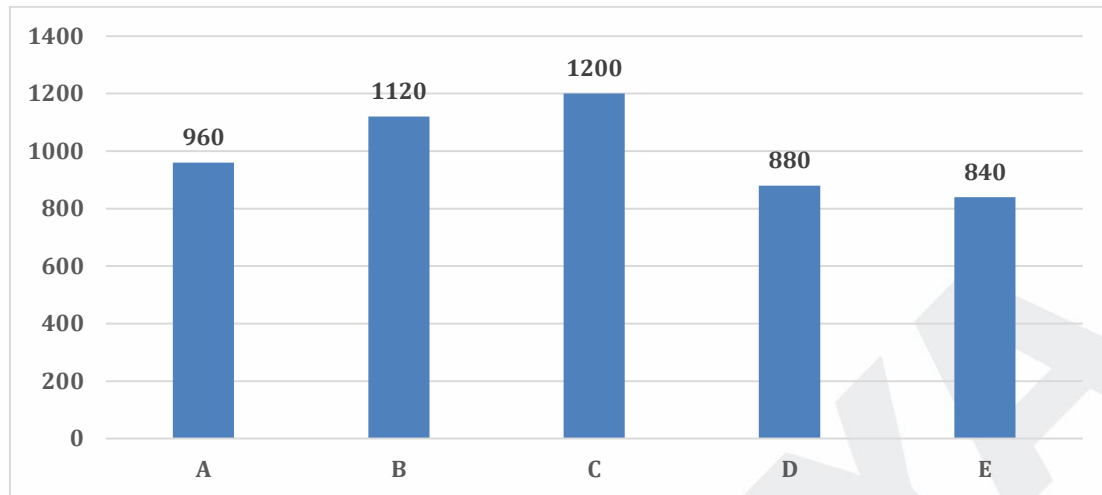
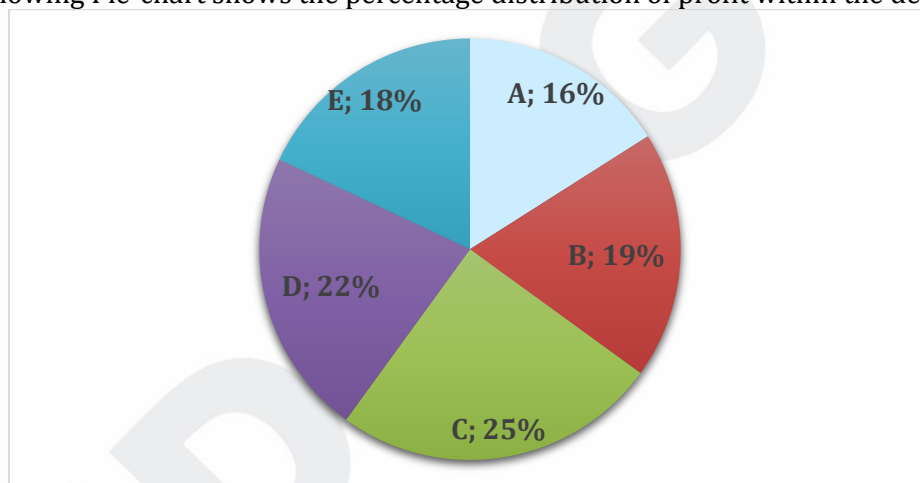


Direction: (Q.1 to Q.5) Read the following data carefully and answer the question.

The following Bar graph shows the investment (in crore) made by a firm in its 5 departments in the year 2018.



It is also known that company was able to generate a profit of 30% over its entire investment at the end of the year 2018. The following Pie-chart shows the percentage distribution of profit within the departments.



- What is the average profit of department A, D and E?
 (a) Rs. 287 crore (b) Rs. 280 crore (c) Rs. 315 crore (d) Rs. 265 crore
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 (a) Rs. 287 crore (b) Rs. 280 crore (c) Rs. 315 crore (d) Rs. 265 crore
- If the company increases its investment by Rs. 120 crore in department C in the year 2019 and the profit generated by the department is Rs. 20 crore more than the previous year's profit of the same department, what will be the profit % of department C in the year 2019?
 (a) 27.25% (b) 33.24% (c) 29.92% (d) 25.24%
- What is the profit % for department A in year 2018?
 (a) 39% (b) 37% (c) 41% (d) 25%
- At the end of the year, it was analysed that Rs. 30 crore was not utilised by department E and it was kept unused in the account. What is the actual profit % of department E (when calculated on actual investment i.e. the fund which was utilised by the department)?
 (a) 30% (b) 25% (c) 27.5% (d) 33.33%

Directions (Q.6 to Q.10): Percentage of Marks Obtained by six Students in eight Subjects. Study the table carefully to answer the questions that follow:

Subject	Commerce	Accounts	Maths	Hindi	English	Humanities	Arts	Music
Max Marks	144	100	120	75	80	90	135	125
Romita	70	67	96	80	64	72	90	75
Nupur	80	79	60	84	96	63	90	85
Shweta	64	83	72	75	80	54	72	90
Raghav	72	94	96	60	90	81	63	80
Ayush	84	73	84	70	72	77	98	64
Kritika	90	70	60	85	88	99	65	78

6. How many approximate marks does Nupur get in all the subjects together?

- (a) 690.45 (b) 689.45 (c) 637.34 (d) 521.34

7. Marks obtained by Raghav in Accounts are approximately how much % less than the marks obtained by Ayush in Arts?

- (a) 40 (b) 94 (c) 30 (d) 28

8. What is the approximate overall percentage of marks obtained by Romita in Maths and Music together?

- (a) 58 (b) 69 (c) 70 (d) 85

9. How many students have scored the highest marks in more than one subject?

- (a) 2 (b) 3 (c) 1 (d) 4

10. Given below are quantities named A and B. Based on the given information, you have to determine the relation between the two quantities. You should use the given data and your knowledge of mathematics to choose among the possible answer.

Quantity I. What is the approximate percentage of marks obtained by Romita in English of the maximum marks in English?

Quantity II. What is the approximate percentage of marks obtained by Shweta in Maths of the maximum marks in Maths?

- (a) Quantity I > Quantity II (b) Quantity I < Quantity II
(c) Quantity I ≤ Quantity II (d) Quantity I ≥ Quantity II

Answers & Solutions

1. Ans. b

Sol. The following table represents the investment made in different departments of the company:

Department	Investment
A	Rs. 960 crore
B	Rs. 1120 crore
C	Rs. 1200 crore
D	Rs. 880 crore
E	Rs. 840 crore
Total Investment	Rs. 5000 crore

Total profit = 30% of 5000 Crore = Rs. 1500 crore

So profit will be distributed will be as follows:

⇒ Profit of Department A = 16% of 1500 = Rs. 240 crore

⇒ Profit of Department D = 22% of 1500 = Rs. 330 crore

⇒ Profit of Department E = 18% of 1500 = Rs. 270 crore

∴ Average of the departments A, D and E = $(240 + 330 + 270)/3 = 840/3 = \text{Rs. } 280 \text{ Crore}$

2. Ans. b

Sol. The following table represents the investment made in different departments of the company:

Department	Investment
A	Rs. 960 crore
B	Rs. 1120 crore
C	Rs. 1200 crore
D	Rs. 880 crore
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⇒ Profit of Department E = 18% of 1500 = Rs. 270 crore

∴ Average of the departments A, D and E = $(240 + 330 + 270)/3 = 840/3 = \text{Rs. } 280 \text{ Crore}$

3. Ans. c

Sol. Investment in department C in year 2019 = $1200 + 120 = \text{Rs. } 1320 \text{ crore}$

⇒ Profit of department C in 2019 = 25% of $(30\% \times (960 + 1120 + 1200 + 880 + 840)) = 375 \text{ crores}$

Total Profit of C in 2019 = $375 + 20 = 395 \text{ crores}$

∴ Profit % = $395/1320 \times 100 = 29.92\%$

4. Ans. d

Sol. Profit of company in 2018 = 30% of $(960 + 1120 + 1200 + 880 + 840) = 1500 \text{ crore}$

⇒ Profit of Department A = 16% of 1500 = Rs. 240 crore

⇒ Investment made in department A = Rs. 960 crore

∴ Profit % = $240/960 \times 100 = 25\%$

5. Ans. d

Sol. ⇒ Total utilised fund by department E = $840 - 30 = \text{Rs. } 810 \text{ crore}$

⇒ Profit of Department E = 18% of $1500 = \text{Rs. } 270 \text{ crore}$

∴ Profit % = $270/810 \times 100 = 33.33\%$

6. Ans. a

Sol.

Subject	Commerce	Accounts	Maths	Hindi	English	Humanities	Arts	Music	Total
Max Mks& Students	144	100	120	75	80	90	135	125	869
Romita	100.8	67	115.2	60	51.2	64.8	121.5	93.75	674.25
Napur	115.2	79	72	63	76.8	56.7	121.5	106.25	690.45
Shweta	92.16	83	86.4	56.25	64	48.6	97.2	112.5	640.11
Raghav	103.68	94	115.2	45	72	72.9	85.05	100	687.83
Ayush	120.96	73	100.8	52.5	57.6	69.3	132.3	80	686.46
Kritika	129.6	70	72	63.75	70.4	89.1	87.75	97.5	680.1
Total	662.4	466	561.6	340.5	392	401.4	645.3	590	

Total marks obtained by Nupur = $115.2 + 79 + 72 + 63 + 76.8 + 56.7 + 121.5 + 106.25 = 690.45$

7. Ans. c

Sol. Marks obtained by Raghav in Accounts = 94

Marks obtained by Ayush in Arts = 132.3

Required % = $(132.3 - 94)/132.3 \times 100 = 28.94\%$

8. Ans. d

Sol. Marks obtained by Romita in Maths = 115.2

Marks obtained by Romita in Music = 93.75

Total marks obtained by Romita in two subjects = 208.95

Maximum marks in maths = 120

Maximum marks in Music = 125

Total maximum marks in two subjects = $120 + 125 = 245$

Required % = $(208.95)/245 \times 100 = 85.28$

9. Ans. a

Sol. Highest marks by Kritika = Commerce, Hindi, Humanities

Highest marks by Raghav = Accounts, Maths

∴ 2 students have scored the highest marks in more than one subject

10. Ans. b

Sol. I. Marks obtained by Romita in English = 51.2

Maximum marks in English = 80

Required percentage = $100 \times 51.2/80 = 64\%$

II. Marks obtained by Shweta in Maths = 86.4

Maximum marks in Maths = 120

Required percentage = $100 \times 86.4/120 = 72\%$

∴ Quantity I < Quantity II