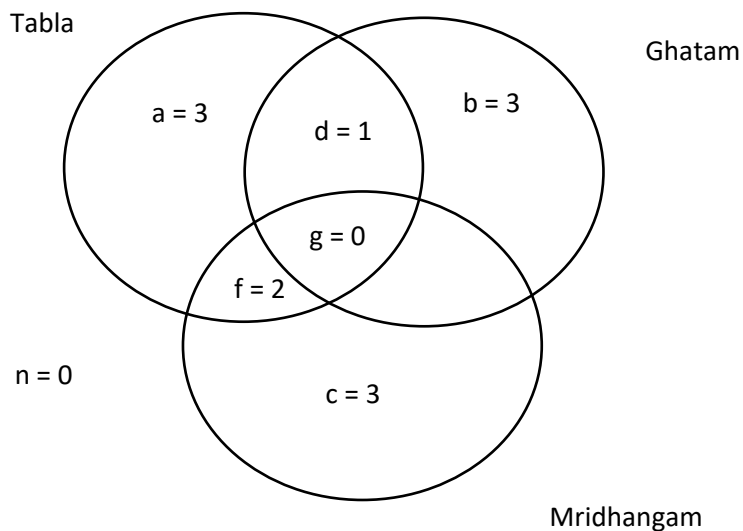


Using this data, we can get the venn diagram as given below:



Regions:

$a = G/F, H, C/E$; $b = I$, $c = A/B, C/E, J$; $d = D$; $f = A/B, G/F$

J is definitely an expert in mridangam but not in tabla or ghatam.

Q. Which of the following pairs CANNOT have any musician who is an expert in both tabla and mridangam but not in ghatam?

- A. C and E
- B. A and B
- C. C and F
- D. F and G

Answer ||| A

Solution |||

From statement i, exactly one of A or B is an expert in only mridangam, and the other one is an expert in tabla and mridangam but not ghatam.

From statement ii, D is the only person who is an expert in tabla and ghatam but not mridangam.

From statement iii, one of F and G is an expert in only tabla, while the other is an expert in tabla and mridangam but not ghatam.

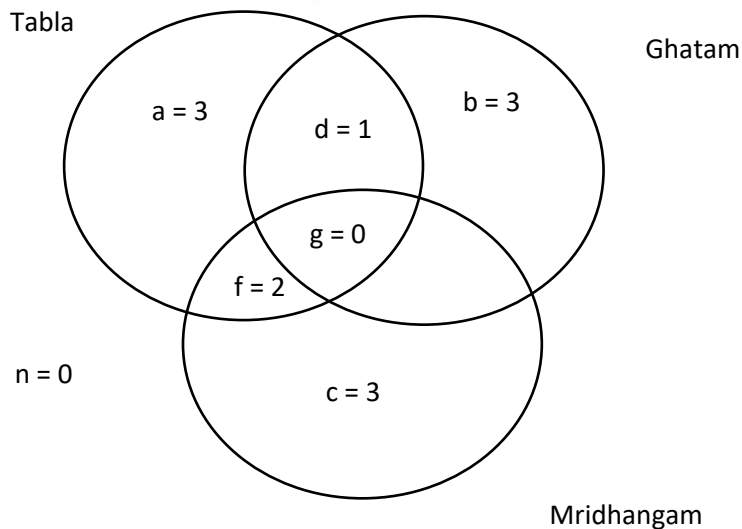
From statements iv and v, I is not an expert in tabla and mridangam; hence, I is an expert in only ghatam.

From statement v, H is not an expert in mridangam. Hence, the only possibility left is that H is an expert in only tabla.

From statement iv, J is not an expert in tabla. Hence, he must be an expert in only mridangam.

For the remaining two persons C and E, one should be an expert in only tabla, while the other should be an expert in only mridangam.

Using this data, we can get the venn diagram as given below:



$$= \frac{(150-240)}{240} \times 100 = -37.5\% \text{ increase or } 37.5\% \text{ decrease}$$

→Q1 of 2017

$$= \frac{(380-360)}{360} \times 100 = 5.55\% \text{ increase.}$$

→Q2 of 2017

$$= \frac{(200-380)}{380} \times 100 = -47.36 \text{ or } 47.36\% \text{ decrease}$$

→Q4 of 2017

There is an increase from 220 to 500.

So, sales of Q2 of 2017, had the highest percentage decrease compared with Q1 of 2017.

The correct option is C .

Q-. During which month was the percentage increase in sales from the previous month's sales the highest?

- A. March of 2016
- B. October of 2016
- C. March of 2017
- D. October of 2017

Answer: D

Solution:

It is given that the sales figures during the three months of the second quarter (April, May, June) of 2016 form an arithmetic progression. So $40 + (40 + a) + (40 + 2a) = 150$

Hence, $a = 10$.

Sales: April 2016 = 40, May 2016 = 50, June 2016 = 60

The same case holds for October, November, and December of 2016. $100 + (100 + b) + (100 + 2b) = 360$

Or $b = 20$

Sales: October 2016 = 100, November 2016 = 120, December 2016 = 140
August 2017 = 220 - 130 = 90.

Similarly, sales of December 2017 = 500 - 320 = 180

We can obtain the following table:

2016			2017		
Quarter	Month	Sales Figure	Quarter	Month	Sales Figure
Q1(240)	January	80	Q1(240)	January	120
	February	60		February	100
	March	100		March	160
Q2(150)	April	40	Q2(150)	April	60
	May	50		May	75
	June	60		June	65
Q3(250)	July	75	Q3(250)	July	60
	August	120		August	90
	September	55		September	70
Q4(360)	October	100	Q4(360)	October	150
	November	120		November	170
	December	140		December	180

Solving the question by calculating the options, we get:

→ March 2016

$$= \frac{(100-60)}{60} \times 100 = 66.67\% \text{ increase}$$

→ October 2016

$$= \frac{(100-55)}{55} \times 100 = 81.81\% \text{ increase.}$$

→ March 2017

$$= \frac{(160-100)}{100} \times 100 = 60\% \text{ increase}$$

→ October 2017

$$= \frac{(150-70)}{70} \times 100 = 114.2\% \text{ increase}$$

So, sales of October 2017 compared with September 2017, had the highest percentage increase of 114.2%.

The correct option is D.