

# DAILY STUDY MATERIAL FOR NIACL AO 2018

20 DEC 2018

## 1. Study the following information carefully to answer the given questions.

Seven people namely B, C, D, E, F, G and H have to attend a workshop but not necessarily in the same order, in seven different months of the same year namely January, March, April, July, August, September and December. Each of them also likes a different bank namely CANARA, SBI, ICICI, HDFC, AXIS, PNB and Yes but not necessarily in the same order. The one who likes AXIS will attend a workshop in the month which has less than 31 days. Only one person will attend a workshop between the one who likes AXIS and B. The one who likes CANARA will attend a workshop immediately before B. Only three people will attend a workshop between one who likes AXIS and the one who likes SBI. H will attend a workshop immediately after B. Only three people will attend a workshop between H and G. The one who likes PNB will attend a workshop immediately before G. The one who likes ICICI will attend a Workshop immediately before the one who likes Yes. E will attend a Workshop immediately after the one who likes Yes. C will attend a workshop in a month which has only 30 days. F does not like CANARA.

- 1. How many people will attend a workshop between the months in which G and D will attend a Workshop?**
  - A. Two
  - B. One
  - C. Three
  - D. More than three
  - E. None
- 2. As per the given arrangement, G is related to CANARA and B is related to SBI following a certain pattern, which of the following is D related to following the same pattern?**
  - A. ICICI
  - B. PNB
  - C. Axis
  - D. CANARA
  - E. Yes
- 3. Which of the following represents the month in which F will attend a workshop?**
  - A. March
  - B. January
  - C. December
  - D. April
  - E. Cannot be determined
- 4. Which of the following represents the people who will attend a workshop in March and December respectively?**

- A. G, H
- B. F, B
- C. F, E
- D. F, H
- E. G, E

5. Which of the following banks does G like?

- A. ICICI
- B. CANARA
- C. AXIS
- D. HDFC
- E. SBI

**ANSWERS :**

Month	Person	Banks
January	F	PNB
March	G	HDFC
April	C	AXIS
July	D	CANARA
August	B	ICICI
September	H	Yes
December	E	SBI

**2. Study the following information carefully to answer the given questions**

Seven People namely M, N, O, P, Q, R and S have an anniversary but not necessarily in the same order, in seven different months of the same year namely February, March, April, June, September, October and November. Each of them also likes a different book namely One Indian Girl, The God of Small Things, Everyone Has a Story, The Ministry of utmost Happiness, Half Girl Friend, Bahubali: The Battle of Bold and The Small Town Sea but not necessarily in the same order.

R has an anniversary in the month which has more than 30 days. Only one person has an anniversary between R and the one who likes One Indian Girl. Both S and O have an anniversary in one of the months after the one who likes One Indian Girl. S has an anniversary immediately before O. The one who likes Everyone Has a Story has an anniversary in the month which has less than 30 days. Only three people have an anniversary between the one who likes Everyone Has a Story and the one who likes The Small Town Sea. Only two people have an anniversary between S and the one who likes The Ministry of utmost Happiness. P has an anniversary immediately after the one who likes The Ministry of utmost Happiness. Only two people have an anniversary between P and Q. M has an anniversary immediately before the one who likes The God of Small Things. O does not like Bahubali: The Battle of Bold.

**1. Which of the following represents the month in which S has an anniversary?**

- A. October
- B. March
- C. April
- D. September
- E. Can not be determined

**2. Which of the following does O like?**

- A. One Indian Girl
- B. The God of Small Things
- C. The Ministry of utmost Happiness
- D. Half Girl Friend
- E. The Small Town Sea

**3. As per the given arrangement, Everyone Has a Story is related to April and The Ministry of utmost Happiness is related to September following a certain pattern, which of the following is The Small Town Sea related to following the same pattern?**

- A. February
- B. June
- C. October
- D. November
- E. March

**4. Which of the following represents the people who have an anniversary in April and November respectively?**

- A. N,M
- B. Q,M
- C. Q,O
- D. N,O
- E. N,S

5. How many people have an anniversary between the months in which Q and M have an anniversary?

- A. None
- B. One
- C. Three
- D. Two
- E. More than three

**ANSWERS:**

Month	Person	Book
February	Q	Everyone Has a Story
March	R	Bahubali: The Battle of Bold
April	N	The Ministry of utmost Happiness
June	P	One Indian Girl
September	M	The Small Town Sea
October	S	The God of Small Things
November	O	Half Girl Friend

3. Seven Persons – A, B, C, D, E, F, and G – live on separate floors of a seven storeyed building, but not in the same order. The ground floor of the building is numbered 1, the floor above it 2 and so on until the topmost floor is numbered 7. Each person likes different vegetables – Cabbage, Potato, Tomato, Onion, Carrot, Radish and Bean, but not necessarily in the same order. Each person has 7 different weight of their favorite vegetables starting from 1kg to 10 kg. The weight of Onion is more than 2 kg. The total weight of Carrot and Radish is 10 kg. The person who likes Onion lives on floor numbered four. A does not live on the lowermost floor. A lives on any odd numbered floor below the one who likes Onion. Only two persons live between A and the person who likes Bean. Only one person lives between B and F. The total weight of Cabbage is square of the total weight of Carrot while The total weight of Bean is square of the total weight of Onion. F lives on an even numbered floor and does not like Onion. Only three persons live between the persons who like Cabbage and Tomato respectively. The person who likes Cabbage live on any floor above the B's floor. The person who likes Cabbage does not live on the topmost floor. G lives on an even numbered floor but neither immediately above nor immediately below the floor of A. C does not like Cabbage or Tomato. Only two persons live between D and the one who likes Onion. The person who likes Carrot lives on the floor immediately above the floor of the person who likes Raddish. The difference between the weight of the Tomato and Radish is 2 kg. The floor number and the weight of favorite vegetable is same for the person C.

**1. D has how many kg of favourite vegetable?**

- A. 2 kg
- B. 8 kg
- C. 6 kg
- D. 4 kg
- E. No one

**2. Which of the following statements is/are true according to the given information?**

- A. E lives on floor numbered 5 and he does not like Onion
- B. A likes Carrot and he does not live on floor numbered 4
- C. C likes Potato and he does not have 6 kg.
- D. Only two persons live between the floors of E and F
- E. All the statements are true.

**3. Who among the following lives on the floor immediately above the floor of A?**

- A. B
- B. F
- C. G
- D. C
- E. No one

**4. Who among the following lives exactly between the floors on which B and F live?**

- A. F
- B. A
- C. D
- D. C
- E. No one

5. Who among the following does like Carrot?

- A. A
- B. D
- C. B
- D. C
- E. No one

**ANSWER:**

Floor No	Person	Vegetables	weight
7	C	Potato	7 kg
6	G	Bean	9 kg
5	E	Cabbage	4 kg
4	B	Onion	3 kg
3	A	Carrot	2 kg
2	F	Raddish	8 kg
1	D	Tomato	6 kg

4.

P, Q, R, S, T, U, V and W live on eight different floors of a building but not necessarily in the same order. The ground floor is numbered one and the floor above it is numbered two and so on. The top most floor is numbered eight. Each of them likes a different news paper viz The Times of India, The Economic Times, Business Standard, THE HINDU, The Indian Express, The Financial Express, Deccan Chronicle and THE TRIBUNE but not necessarily in the same order.

P lives immediately above U, who lives on an odd numbered floor. The one who likes The Indian Express does not live on first floor. The one who likes The Economic Times lives on an even numbered floor but not on floor number 8. Only two persons live between U and the one who likes The Economic Times. Only one person lives between U and the one who likes The Indian Express. Neither T nor R lives on first floor. Only one person lives between R and S, who likes Business Standard. Only two persons live between T and P. Q lives on an even numbered floor and immediately above R. The one who likes THE HINDU lives on an even numbered floor and live immediately above the person who likes THE TRIBUNE. R does not like The Indian Express or THE TRIBUNE. Only two persons live between W and the one who likes The Times of India. Q lives on floor number four. The one who likes The Financial Express does not live on odd numbered floor. W does not like Deccan Chronicle.

**1. Who among the following lives on floor 5?**

- A. S
- B. R
- C. V
- D. T
- E. None of these

**2. Which of the following News papers does P like?**

- A. THE HINDU
- B. THE TRIBUNE
- C. The Economic Times
- D. Deccan Chronicle
- E. None of these

**3. Who among the following likes The Financial Express News paper?**

- A. Q
- B. R
- C. W
- D. S
- E. None of these

**4. Who among the following lives between P and W?**

- A. P
- B. R
- C. S
- D. U
- E. None of these

5. Which of the following is true as per the arrangement?

- A. 4-R-The Times of India
- B. 7-W-THE HINDU
- C. 5-T-THE TRIBUNE
- D. 3-Q-The Economic Times
- E. None of these

**ANSWER:**

Floor	Person	News paper
8	P	THE HINDU
7	U	THE TRIBUNE
6	W	The Financial Express
5	T	The Indian Express
4	Q	The Economic Times
3	R	The Times of India
2	V	Deccan Chronicle
1	S	Business Standard



Ten students namely viz A, B, C, D, E, F, G, H, I and J of ten different colleges but not necessarily in the same order have exam on five different days starting from Monday to Friday of the same week. Each student have exam at two different time slots, i.e 08.00 AM or 11.00 A.M

Only two people have exam between F and J. Neither E nor G does not have exam on Friday. I has exam on Tuesday at 08.00 A.M. H does not have exam at 11.00 AM. The number of people who have exam between G and D is same as the number of people who have exam between C and H. D does not have exam on any one of the days after E. F does not have exam on any of the days after H. B has exam immediately before I. I does not have exam on any of the days before G. The one who has exam at 08.00 A.M. immediately before J. D has exam immediately after the day of one who has exam on Monday. F does not have exam at 11.00 A.M. Only three people have exam between G and E.

- 1. How many persons have exam at 11'0 clock between E and H?**
  - A. 5
  - B. 6
  - C. 2
  - D. 4
  - E. None of these.
- 2. Who among the following person has exam at 8 A.M?**
  - A. J
  - B. H
  - C. A
  - D. C
  - E. D
- 3. Four among the following form a group in a certain way. Which of the following does not belong to Group?**
  - A. B – Tuesday
  - B. D – Wednesday
  - C. G – Tuesday
  - D. A – Friday
  - E. H – Friday
- 4. Which of the following is correctly matched?**
  - A. I – Monday
  - B. D – Tuesday
  - C. B – Friday
  - D. G – Tuesday
  - E. I – Wednesday
- 5. Who among the following have exam on Friday?**
  - A. A, B
  - B. C, D
  - C. E, G

D. H, J

E. G, I

ANSWER:

Person	Day	Time Slot
G	Mon	08.00 AM
B	Mon	11.00 AM
I	Tue	08.00 AM
D	Tue	11.00 AM
E	Wed	08.00 AM
C	Wed	11.00 AM
F	Thu	08.00 AM
A	Thu	11.00 AM
H	Fri	08.00 AM
J	Fri	11.00 AM

**1. How is COME written in that code ?**

I. 'come and go' is written as 'je ta ma'

II. 'go back and' is written as 'ta sa je'

1) If the data in statement I alone are sufficient

2) If the data in statement II alone are sufficient

3) If the data either in statement I alone or statement II alone are sufficient to answer

4) If the data given in both I and II together are not sufficient

5) If the data in both the statements I and II together are necessary to answer

**2. Among M, N, O, P and Q each securing different marks in an examination, whose position is last among them.**

I. P has secured less marks than only O and Q

II. N has secured more marks than M

1) If the data in statement I alone are sufficient

2) If the data in statement II alone are sufficient

3) If the data either in statement I alone or statement II alone are sufficient to answer

4) If the data given in both I and II together are not sufficient

5) If the data in both the statements I and II together are necessary to answer

**3. In a row of 20 students facing north, What is Priya's position from the right end ?**

I. Ashwini is fifth to the right of Priya and 18<sup>th</sup> from the left end of the row.

II. Meena is third to the left of Priya and 11<sup>th</sup> from the right end of the row.

1) If the data in statement I alone are sufficient

2) If the data in statement II alone are sufficient

3) If the data either in statement I alone or statement II alone are sufficient to answer

4) If the data given in both I and II together are not sufficient

5) If the data in both the statements I and II together are necessary to answer

**4. How many Daughters does Jaswanth have ?**

I. Mani and Kani are sister of Thisya

II. Thisya's mother is wife of Jaswanth

1) If the data in statement I alone are sufficient

2) If the data in statement II alone are sufficient

3) If the data either in statement I alone or statement II alone are sufficient to answer

4) If the data given in both I and II together are not sufficient

5) If the data in both the statements I and II together are necessary to answer

**5. On which day of the week definitely was Ram's birthday ?**

I. Ram celebrated his birthday after Monday but before Saturday

II. Ram's friends met Ram on his birthday before Wednesday.

1) If the data in statement I alone are sufficient

2) If the data in statement II alone are sufficient

3) If the data either in statement I alone or statement II alone are sufficient to answer

4) If the data given in both I and II together are not sufficient

5) If the data in both the statements I and II together are necessary to answer

**ANSWER:**

**1. 5) If the data in both the statements I and II together are necessary to answer**

Solution: Come  $\Rightarrow$  ma

**2. 5) If the data in both the statements I and II together are necessary to answer**

Solution: O,  $Q > P > N > M$

**3. 3) If the data either in statement I alone or statement II alone are sufficient to answer**

Solution:

From I

.....P- - - (A)18.....

From II

.....M(11) - - P.....

**4. 4) If the data given in both I and II together are not sufficient**

Solution: T is either male or female

**5. 5) If the data in both the statements I and II together are necessary to answer**

Solution: Monday **Tuesday** Wednesday

**Directions(1-3):** Read the following information carefully and answer the questions given below

A+B means A is the daughter of B.

A-B means A is the husband of B.

A\*B means A is the brother of B.

1. **If P+Q-R, which of the following is true?**

- 1) R is the mother of P
- 2) R is the sister in law of P
- 3) R is the aunt of P
- 4) R is the mother in law of P
- 5) None of these

2. **If P\*Q+R, which of the following is true?**

- 1) P is the brother of R
- 2) P is the uncle of R
- 3) P is the son of R
- 4) P is the father of P
- 5) None of these

3. **If P+Q\*R, which of the following is true?**

- 1) P is the niece of R
- 2) P is daughter of P
- 3) P is the cousin of R
- 4) P is the daughter in law of R
- 5) None of these

4. **If A \$ B means "A is father of B' , A # B means 'A is daughter of B' , A @ B means 'A**

**is sister of B' ,**

**then how is K related to M in H @ K \$ L # M?**

- 1) Husband
- 2) Uncle
- 3) Father
- 4) Cannot be determined
- 5) None

5. **If A+B means A is the sister of B; A-B means A is the brother of B; A\*B means A is**

**the daughter of B, which of the following shows the relation that E is the maternal**

**uncle of D?**

- 1) D+F\*E
- 2) D-F\*E
- 3) D\*F+E
- 4) D\*F-E
- 5) None of these

6. **P-Q means Q is son of P and P\*Q means P is brother of Q, P/Q means Q is sister of P, and P+Q means P is mother of Q. Which of the following is definitely true about N\*K-M/L?**
- 1) K is father of L and M
  - 2) L is the daughter of K and is the niece of her uncle N
  - 3) K is the father of M and L-his son and daughter respectively
  - 4) M is the uncle of K's brother N
  - 5) None of these
7. **K is brother of T. M is mother of K. W is brother of M. how is W related to T?**
- 1) Maternal Uncle
  - 2) Paternal Uncle
  - 3) Grandfather
  - 4) Data Inadequate
  - 5) None of these

**Directions(8-10):** Read the following information carefully and answer the questions given below

P/Q means P is father of Q

P+Q means P is the mother of Q

P-Q means P is the brother of Q

P\*Q means P is the sister of Q

8. **8. If A+B/C-D, then A is D's \_\_\_\_\_?**
- 1) Sister
  - 2) Grandfather
  - 3) Grandmother
  - 4) Father
  - 5) None of these
9. **If A\*B/C-D+E, then A is E's**
- 1) Grand-aunt
  - 2) Brother
  - 3) Maternal uncle
  - 4) Mother
  - 5) None of these
10. **If A\*B/C-D+E, then A is E's**
- 1) Grand-aunt
  - 2) Brother
  - 3) Maternal uncle
  - 4) Mother
  - 5) None of these

ANSWERS:

1. 1) R is the mother of P
2. 3) P is the son of R
3. 1) P is the niece of R
4. 1) Husband
5. 5) None of these
6. 2) L is the daughter of K and is the niece of her uncle N
7. 1) Maternal Uncle
8. 3) Grandmother
9. 1) Grand-aunt
- 10.2)  $A * B / C * D - E$

- 1. I.  $20a^2 + 51a + 28 = 0$**   
**II.  $15b^2 - 61b + 56 = 0$**   
 1 : if  $a > b$   
 2 : if  $a < b$   
 3 : if  $a \geq b$   
 4 : if  $a \leq b$   
 5 : if  $a = b$  or the relation between  $a$  and  $b$  cannot be established.
- 2. I.  $2a^2 - 11a + 12 = 0$**   
**II.  $35b^2 - 18b - 8 = 0$**   
 1 : if  $a > b$   
 2 : if  $a < b$   
 3 : if  $a \geq b$   
 4 : if  $a \leq b$   
 5 : if  $a = b$  or the relation between  $a$  and  $b$  cannot be established.
- 3. I.  $28a^2 + 25a - 8 = 0$**   
**II.  $5b^2 - 13b - 6 = 0$**   
 1 : if  $a > b$   
 2 : if  $a < b$   
 3 : if  $a \geq b$   
 4 : if  $a \leq b$   
 5 : if  $a = b$  or the relation between  $a$  and  $b$  cannot be established.
- 4. I.  $12a^2 - a - 6 = 0$**   
**II.  $8b^2 - 26b + 15 = 0$**   
 1 : if  $a > b$   
 2 : if  $a < b$   
 3 : if  $a \geq b$   
 4 : if  $a \leq b$   
 5 : if  $a = b$  or the relation between  $a$  and  $b$  cannot be established.
- 5. I.  $32a^2 + 52a + 15 = 0$**   
**II.  $8b^2 + 38b + 35 = 0$**   
 1 : if  $a > b$   
 2 : if  $a < b$   
 3 : if  $a \geq b$   
 4 : if  $a \leq b$   
 5 : if  $a = b$  or the relation between  $a$  and  $b$  cannot be established.
- 6. I.  $6x^2 - 71x + 195 = 0$**   
**II.  $12y^2 - 97y + 195 = 0$**   
 1 : if  $x \geq y$   
 2 : if  $x \leq y$   
 3 : if  $x > y$   
 4 : if  $x < y$   
 5 : if  $x = y$  or relationship cannot be established
- 7. I.  $56x^2 - 127x + 72 = 0$**   
**II.  $6y^2 - 17y + 12 = 0$**



- 1 : if  $x \geq y$
- 2 : if  $x \leq y$
- 3 : if  $x > y$
- 4 : if  $x < y$
- 5 : if  $x = y$  or relationship cannot be established

**8. I.  $3x^2 - 47x + 184 = 0$**

**II.  $3y^2 - 38y + 119 = 0$**

- 1 : if  $x \geq y$
- 2 : if  $x \leq y$
- 3 : if  $x > y$
- 4 : if  $x < y$
- 5 : if  $x = y$  or relationship cannot be established

**9. I.  $20x^2 - 119x + 176 = 0$**

**II.  $18y^2 - 123y + 209 = 0$**

- 1 : if  $x \geq y$
- 2 : if  $x \leq y$
- 3 : if  $x > y$
- 4 : if  $x < y$
- 5 : if  $x = y$  or relationship cannot be established

**10.I.  $63x^2 - 275x + 300 = 0$**

**II.  $18y^2 - 85y + 100 = 0$**

- 1 : if  $x \geq y$
- 2 : if  $x \leq y$
- 3 : if  $x > y$
- 4 : if  $x < y$
- 5 : if  $x = y$  or relationship cannot be established

ANSWER:

1.

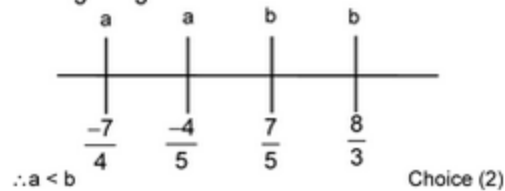
## Solution

$$\begin{aligned}\text{I. } & 20a^2 + 51a + 28 = 0 \\ \Rightarrow & 20a^2 + 16a + 35a + 28 = 0 \\ \Rightarrow & 4a(5a + 4) + 7(5a + 4) = 0 \\ \Rightarrow & (4a + 7)(5a + 4) = 0\end{aligned}$$

$$\therefore a = \frac{-7}{4} \text{ (or) } \frac{-4}{5}$$

$$\begin{aligned}\text{II. } & 15b^2 - 61b + 56 = 0 \\ \Rightarrow & 15b^2 - 40b - 21b + 56 = 0 \\ \Rightarrow & 5b(3b - 8) - 7(3b - 8) = 0 \\ \Rightarrow & (5b - 7)(3b - 8) = 0\end{aligned}$$

$$\therefore b = \frac{7}{5} \text{ (or) } \frac{8}{3}$$



2.

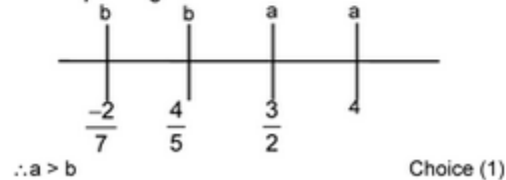
## Solution

$$\begin{aligned}\text{I. } & 2a^2 - 11a + 12 = 0 \\ \Rightarrow & 2a^2 - 8a - 3a + 12 = 0 \\ \Rightarrow & 2a(a - 4) - 3(a - 4) = 0 \\ \Rightarrow & (2a - 3)(a - 4) = 0\end{aligned}$$

$$\therefore a = \frac{3}{2} \text{ (or) } 4$$

$$\begin{aligned}\text{II. } & 35b^2 - 18b - 8 = 0 \\ \Rightarrow & 35b^2 - 28b + 10b - 8 = 0 \\ \Rightarrow & 7b(5b - 4) + 2(5b - 4) = 0 \\ \Rightarrow & (7b + 2)(5b - 4) = 0\end{aligned}$$

$$\therefore b = \frac{-2}{7} \text{ (or) } \frac{4}{5}$$



3.

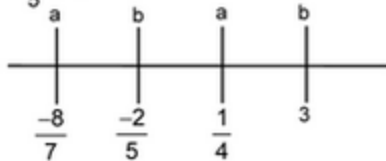
## Solution

$$\begin{aligned} \text{I. } & 28a^2 + 25a - 8 = 0 \\ \Rightarrow & 28a^2 - 7a + 32a - 8 = 0 \\ \Rightarrow & 7a(4a - 1) + 8(4a - 1) = 0 \\ \Rightarrow & (7a + 8)(4a - 1) = 0 \end{aligned}$$

$$\therefore a = \frac{-8}{7} \text{ (or) } \frac{1}{4}$$

$$\begin{aligned} \text{II. } & 5b^2 - 13b - 6 = 0 \\ \Rightarrow & 5b^2 - 15b + 2b - 6 = 0 \\ \Rightarrow & 5b(b - 3) + 2(b - 3) = 0 \\ \Rightarrow & (5b + 2)(b - 3) = 0 \end{aligned}$$

$$\therefore b = \frac{-2}{5} \text{ (or) } 3$$



$\therefore$  Relation between 'a' and 'b' cannot be established  
Choice (5)

4.

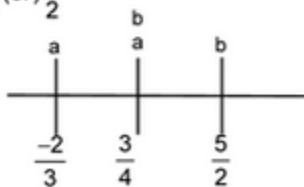
## Solution

$$\begin{aligned} \text{I. } & 12a^2 - a - 6 = 0 \\ \Rightarrow & 12a^2 - 9a + 8a - 6 = 0 \\ \Rightarrow & 3a(4a - 3) + 2(4a - 3) = 0 \\ \Rightarrow & (3a + 2)(4a - 3) = 0 \end{aligned}$$

$$\therefore a = \frac{-2}{3} \text{ (or) } \frac{3}{4}$$

$$\begin{aligned} \text{II. } & 8b^2 - 26b + 15 = 0 \\ \Rightarrow & 8b^2 - 20b - 6b + 15 = 0 \\ \Rightarrow & 4b(2b - 5) - 3(2b - 5) = 0 \\ \Rightarrow & (4b - 3)(2b - 5) = 0 \end{aligned}$$

$$\therefore b = \frac{3}{4} \text{ (or) } \frac{5}{2}$$



$\therefore a \leq b$

Choice (4)

5.

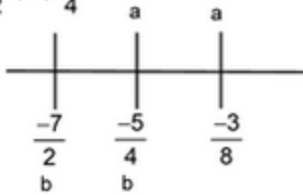
## Solution

$$\begin{aligned}
 \text{I. } & 32a^2 + 52a + 15 = 0 \\
 \Rightarrow & 32a^2 + 40a + 12a + 15 = 0 \\
 \Rightarrow & 8a(4a + 5) + 3(4a + 5) = 0 \\
 \Rightarrow & (8a + 3)(4a + 5) = 0
 \end{aligned}$$

$$\therefore a = \frac{-3}{8} \text{ (or) } \frac{-5}{4}$$

$$\begin{aligned}
 \text{II. } & 8b^2 + 38b + 35 = 0 \\
 \Rightarrow & 8b^2 + 10b + 28b + 35 = 0 \\
 \Rightarrow & 2b(4b + 5) + 7(4b + 5) = 0 \\
 \Rightarrow & (2b + 7)(4b + 5) = 0
 \end{aligned}$$

$$\therefore b = \frac{-7}{2} \text{ (or) } \frac{-5}{4}$$



$$\therefore a \geq b$$

Choice (3)

6.

## Solution

$$\begin{aligned}
 \text{I: } & 6x^2 - 71x + 195 = 0 \\
 \Rightarrow & 6x^2 - 26x - 45x + 195 = 0 \\
 \Rightarrow & 2x(3x - 13) - 15(3x - 13) = 0 \\
 \Rightarrow & (2x - 15)(3x - 13) = 0 \\
 \Rightarrow & x = \frac{13}{3}, \frac{15}{2} \text{ -----(1)}
 \end{aligned}$$

$$\begin{aligned}
 \text{II: } & 12y^2 - 97y + 195 = 0 \\
 \Rightarrow & 12y^2 - 45y - 52y + 195 = 0 \\
 \Rightarrow & 3y(4y - 15) - 13(4y - 15) = 0 \\
 \Rightarrow & (3y - 13)(4y - 15) = 0 \\
 \Rightarrow & y = \frac{15}{4}, \frac{13}{3} \text{ -----(2)}
 \end{aligned}$$

From (1) and (2), we have  $x \geq y$

7.

## Solution

$$\begin{aligned}\text{I: } & 56x^2 - 127x + 72 = 0 \\ & \Rightarrow 56x^2 - 63x - 64x + 72 = 0 \\ & \Rightarrow 7x(8x - 9) - 8(8x - 9) = 0 \\ & \Rightarrow (7x - 8)(8x - 9) = 0 \\ & \Rightarrow x = \frac{9}{8}, \frac{8}{9} \text{-----(1)}\end{aligned}$$

$$\begin{aligned}\text{II. } & 6y^2 - 17y + 12 = 0 \\ & \Rightarrow 6y^2 - 9y - 8y + 12 = 0 \\ & \Rightarrow 3y(2y - 3) - 4(2y - 3) = 0 \\ & \Rightarrow (3y - 4)(2y - 3) = 0 \\ & \Rightarrow y = \frac{4}{3}, \frac{3}{2} \text{-----(2)}\end{aligned}$$

From (1) and (2), we have  $x < y$ .

8.

## Solution

$$\begin{aligned}\text{I: } & 3x^2 - 47x + 184 = 0 \\ & \Rightarrow 3x^2 - 23x - 24x + 184 = 0 \\ & \Rightarrow x(3x - 23) - 8(3x - 23) = 0 \\ & \Rightarrow (x - 8)(3x - 23) = 0 \\ & \Rightarrow x = \frac{23}{3}, 8 \text{-----(1)}\end{aligned}$$

$$\begin{aligned}\text{II: } & 3y^2 - 38y + 119 = 0 \\ & \Rightarrow 3y^2 - 17y - 21y + 119 = 0 \\ & \Rightarrow y(3y - 17) - 7(3y - 17) = 0 \\ & \Rightarrow (y - 7)(3y - 17) = 0 \\ & \Rightarrow y = \frac{17}{3}, 7 \text{-----(2)}\end{aligned}$$

From (1) and (2), we have  $x > y$ .

9.

## Solution

$$\begin{aligned}\text{I: } 20x^2 - 119x + 76 &= 0 \\ \Rightarrow 20x^2 - 55x - 64x + 176 &= 0 \\ \Rightarrow 5x(4x - 11) - 16(4x - 11) &= 0 \\ \Rightarrow (4x - 11)(5x - 16) &= 0 \\ \Rightarrow x &= \frac{11}{4}, \frac{16}{5} \text{-----(1)}\end{aligned}$$

$$\begin{aligned}\text{II: } 18y^2 - 123y + 209 &= 0 \\ \Rightarrow 18y^2 - 57y - 66y + 209 &= 0 \\ \Rightarrow 3y(6y - 19) - 11(6y - 19) &= 0 \\ \Rightarrow (6y - 19)(3y - 11) &= 0 \\ \Rightarrow y &= \frac{19}{6}, \frac{11}{3} \text{-----(2)}\end{aligned}$$

As  $\frac{11}{4} < \frac{19}{6} < \frac{16}{5} < \frac{11}{3}$ , we cannot establish the relationship between  $x$  and  $y$ . Choice (5)

10.

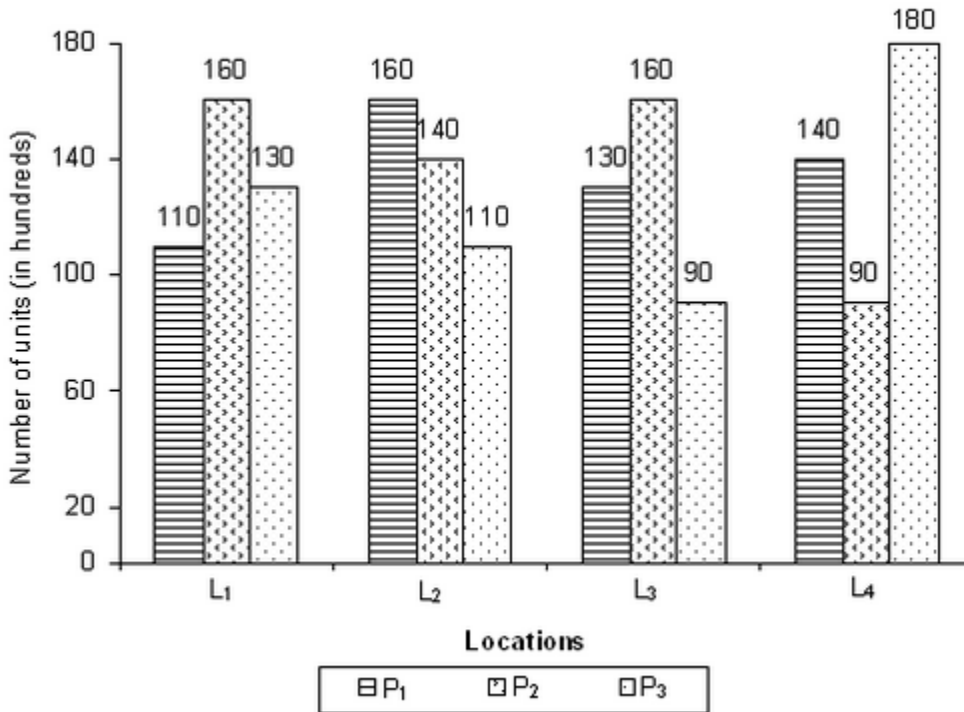
## Solution

$$\begin{aligned}\text{I. } 63x^2 - 275x + 300 &= 0 \\ \Rightarrow 63x^2 - 135x - 140x + 300 &= 0 \\ \Rightarrow 9x(7x - 15) - 20(7x - 15) &= 0 \\ \Rightarrow (9x - 20)(7x - 15) &= 0 \\ \Rightarrow x &= \frac{15}{7}, \frac{20}{9} \text{-----(1)}\end{aligned}$$

$$\begin{aligned}\text{II. } 18y^2 - 85y + 100 &= 0 \\ \Rightarrow 18y^2 - 45y - 40y + 100 &= 0 \\ \Rightarrow 9y(2y - 5) - 20(2y - 5) &= 0 \\ \Rightarrow (2y - 5)(9y - 20) &= 0 \\ \Rightarrow y &= \frac{20}{9}, \frac{5}{2} \text{-----(2)}\end{aligned}$$

From (1) and (2), we have  $x \leq y$ .

Number of units of three different products P1, P2 and P3, produced (units in hundreds) at four different locations (L1, L2, L3 and L4) of a factory the graph.



- What is the total number of units of P2 produced (in hundreds) in the four locations together?**

  - 1 : 540
  - 2 : 550
  - 3 : 510
  - 4 : 530
  - 5 : None of these
- What is the average number of units (in hundreds) of P1 produced per location?**

  - 1 : 135
  - 2 : 155
  - 3 : 165
  - 4 : 175
  - 5 : None of these
- In which location is the maximum number of units produced?**

  - 1 : L2
  - 2 : L1
  - 3 : L4 and L2
  - 4 : L3 and L1
  - 5 : None of these
- By what approximate percent is the number of units of P1 produced more than the number of units of P3 produced in the four locations together?**

  - 1 : 10.9%
  - 2 : 12.4%
  - 3 : 16.5%

4 : 18.7%

5 : 5.9%

5. **If the production cost of each of product P2 is Rs.430, then what is the total production cost of P2?**

1 : Rs.2,26,200

2 : Rs.2,36,500

3 : Rs.2,46,800

4 : Rs.2,56,400

5 : None of these

**ANSWER:**

1. **2 : 550**

2. **1 : 135**

3. **3 : L4 and L2**

4. **5 : 5.9%**

5. **5 :None of these**