PRACTICE **MOCK**

Inequalities

Concept, Examples, Tricks, & Questions for Practice

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Understanding Inequalities

The prelims of nearly all banking exams have questions on inequalities. And this is what makes it an important topic for preparation. If you check the analysis of Prelims of popular banking exams, you can clearly see that there are generally 4-5 questions on this topic. Being ready with this topic is important for your preparation. This is a test of coming up with correct conclusions from the given options. In the questions of inequalities, you are provided with some statements with some relationship between them. These relationships can be <, >, ≤, ≥, = & ≠. You are then provided with some conclusions and are asked which of the conclusion correctly follow from the given statements. Let's first refresh the meaning of these symbols so that there isn't any confusion.

Statement	Meaning
a < b	a is less than b
a ≤ b	a is less than or equal to b
a = b	a is equal to b
a ≥ b	a is greater than or equal to b
a > b	a is greater than b
a ≠ b	a isn't equal to b

Please keep in mind that only those conclusions will be true which are definitely true in the given statements. If you're not sure about the relationship asked in the given question or the data is insufficient, you need to answer accordingly. Also the fact that combining statements will help you in answering the questions quickly and easily. When combining statements, use the common terms. We'll show you examples with explanations below:

RRB Clerk 2020 Prelims- Inequalities Examples

In these questions, a relationship between different elements is shown in the statements. The statements are followed by two conclusions. Give answer

(a) If only conclusion I is true.

(b) If only conclusion II is true.

(c) If either conclusion I or II is true.

(d) If neither conclusion I nor II is true.

(e) If both conclusions I and II are true

Statements: $L > I = N > P; I \geq R > K; N \leq E < Z$

Inequalities- Example 1

Conclusion I: $E > P$

Conclusion II: $R < L$

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Solution:

Let's have a look at the statements. It is obvious that there are multiple statements with some common terms. Let's start with the first statement.

$L > I = N > P$

The next statement is I ≥ R > K. The common term is I

So we can put the second statement beneath the first statement in this way:

L > I = N > P

    I ≥ R > K

Going further, the third statement is N ≤ E < Z which has only N as the common term. This statement can also be written as Z > E ≥ N. So the three statements can be written as below:

Z > E ≥ N

L > I = N > P

    I ≥ R > K

Once the three statements have been rearranged, let's look at the first conclusion, E > P.

E is obviously greater than or equal to N which is greater than P. There are two scenarios here.

If E is greater than N and N is greater than P, E will obviously be greater than P.

If E equals to N and N is greater than P, E will again be greater than P.

In both the scenarios, E > P, so the conclusion I holds good.

Conclusion II is R < L which can also be written as L > R.

In the given statement, it is obvious that L > I and I ≥ R. Once again, there will be two scenarios:

If L > I and I > R, obviously L > R.

If L > I and I = R, once again L > R.

Both the conclusions are true and therefore option (e) is the answer.

Inequalities- Example 2

Conclusion I: K > N

Conclusion II: I < Z

Solution:

Referring to the diagram, we know that I ≥ R > K and since I = N, I can be replaced by N. So the statement becomes N ≥ R > K which implies N > K. So conclusion I is not true.

For conclusion II we know that Z > E ≥ N and since I = N, therefore Z > E ≥ I which implies that Z > I. So the second conclusion is true. Therefore option (b) is the answer.

Combining Statements

Check the option (c) in the above question. It says, If either conclusion I or II is true. This will only hold true if conclusion I and conclusion II have the same terms. For instance. in the above example, if there is are two conclusions given below:

Inequalities- Example 3

Conclusion I: Z > L

Conclusion II: L ≥ Z

Solution:

By looking at the statements-diagram, we know that the common term between Z and L is N and both are greater than N but between Z and L which one is greater is indeterminable. Now, look at both the conclusions once again. One thing is for sure: either Z > L or Z ≤ L. So option (c) is the correct answer.

RRB Clerk 2020 Prelims- Tips & Tricks for Inequalities Questions

- In case there are 2 inequalities, the relationship between the 2 inequalities can be established only if they have a common term. For example, in P ≥ Q & Q > R, we can easily conclude that P ≥ R.
- Either and or cases only takes place in complementary pairs and we can not combine 2 elements with common elements in which no relationship is established. For example, in P ≥ Q, Q ≤ S the relationship between P & S can't be ascertained.
- If there are similar signs between 2 or more elements, the relationship between the elements can be easily established. For example, in P ≤ Q < R ≤ S, the relationship between different elements can be easily identified.
- If similar signs are not there between 2 or more elements, the relationship between them can not be established. Be extra careful while dealing with such questions. For example, in P ≥ R < S ≥ T, the relationship can't be ascertained between P & S, P & T and R & T.

RRB Clerk 2020 Prelims- Questions for Practice

Question 1: In the question, relationship between some elements is shown in the statements (s). These statements are followed by two conclusions. Read the statements and give answer.

Statements: A ≤ B ≥ E > F; B ≤ G < J < K

Conclusions:

I. K > F

II. G ≥ A

a. Only conclusion I is true

b. Only conclusion II is true

c. Either conclusion I or II is true

d. Neither conclusion I nor II is true

e. Both conclusions I and II are true

Answer: e

Solution:

Given statement: A ≤ B ≥ E > F; B ≤ G < J < K

On combining statements, we get,

A ≤ B ≤ G < J < K and F < E ≤ B ≤ G < J < K

Conclusions:

I. K > F: True (As, F < E ≤ B ≤ G < J < K, so, K > F)

II. G ≥ A: True (As, A ≤ B ≤ G < J < K, so, G ≥ A)

Hence, option e.

Question 2: In the question, relationship between some elements is shown in the statements (s). These statements are followed by two conclusions. Read the statements and give answer.

Statements: C ≥ D ≤ H ≤ L; H < M ≤ P > Q

Conclusions:

I. P < C

II. D < Q

a. Only conclusion I is true

b. Only conclusion II is true

c. Either conclusion I or II is true

d. Neither conclusion I nor II is true

e. Both conclusions I and II are true

Answer: d

Solution:

Given statement: C ≥ D ≤ H ≤ L; H < M ≤ P > Q

On combining statements, we get,

D ≤ H< M ≤ P

Conclusions:

I. P < C: False (As, D ≤ H< M ≤ P, we cannot establish the exact relation between P and C)

II. D < Q: False (As, D ≤ H< M ≤ P, we cannot establish the exact relation between D and Q)

Hence, option d.

Question 3: In the question, relationship between some elements is shown in the statements (s). These statements are followed by two conclusions. Read the statements and give answer.

Statements: L > M ≥ P = Q; P > S > T ≤ U

Conclusions:

I. Q > T

II. L < U

a. Only conclusion I is true

b. Only conclusion II is true

c. Either conclusion I or II is true

d. Neither conclusion I nor II is true

e. Both conclusions I and II are true

Answer: a

Solution:

Given statement: L > M ≥ P = Q; P > S > T ≤ U

On combining statements, we get,

L > M ≥ P = Q > S > T

Conclusions:

I. Q > T: True (As, L > M ≥ P = Q > S > T, so, Q > T)

II. L < U: False (As, L > M ≥ P = Q > S > T, we cannot establish the exact relation between L and U)

Hence, option a.

Question 4: In the question given below, relationship between some elements is shown in the statements (s). These statements are followed by two conclusions. Read the statements and give answer.

Statements: U ≥ Y > W = F; J > W ≥ D ≥ Q < E

Conclusions:

I. E > U

II. Y > Q

III. D ≤ U

a. Only conclusion II is true.

b. Both conclusions I and II are true.

c. All the conclusions are true.

d. Both conclusions I and III are true.

e. None is true.

Answer: a

Solution:

Given statements: U ≥ Y > W = F; J > W ≥ D ≥ Q < E

On combining, we get

U ≥ Y > W ≥ D ≥ Q < E

Conclusions:

I. E > U: False (As U ≥ Y > W ≥ D ≥ Q < E, the exact relation between E and U cannot be determined)

II. Y > Q: True (As Y > W ≥ D ≥ Q, so Y > Q)

III. D ≤ U: False (As U ≥ Y > W ≥ D, so U > D)

Hence, option a.

Question 5: In the question given below, relationship between some elements is shown in the statements (s). These statements are followed by two conclusions. Read the statements and give answer.

Statements: K = D > B; F < D = X; T ≤ G ≤ B

Conclusions:

I. T < K

II. K = X

III. F > G

a. Only conclusion II is true.

b. Only conclusion I is true.

c. Both conclusions II and III are true.

d. Both conclusions I and II are true.

e. None is true.

Answer: d

Solution:

Given statements: K = D > B; F < D = X; T ≤ G ≤ B

On combining, we get

K = D > B ≥ G ≥ T; K = D = X

Conclusions:

I. T < K: True (As K = D > B ≥ G ≥ T, so T < K)

II. K = X: True (As K = D = X, so, K = X)

III. F > G: False (As F < D > B ≥ G, so the exact relation between F and G cannot be determined)

Hence, option d.

Question 6: In the question given below, relationship between some elements is shown in the statements (s). These statements are followed by two conclusions. Read the statements and give answer.

Statements: J > F = R > Q; Q > H ≥ K < C

Conclusions:

I. K < R

II. J > C

III. H ≤ F

a. Only conclusion I is true.

b. Both conclusion I and II are true.

c. All the conclusions are true.

d. Both conclusion I and III are true.

e. None is true.

Answer: a

Solution:

Given statements: J > F = R > Q; Q > H ≥ K < C

On combining, we get

J > F = R > Q > H ≥ K < C

Conclusions:

I. K < R: True (As R > Q > H ≥ K, so, R > K)

II. J > C: False (As J > F = R > Q > H ≥ K < C, the exact relation between J and C cannot be determined)

III. H ≤ F: False (As F = R > Q > H, so F > H)

Hence, option a.

Question 7: In the question given below, relationship between some elements is shown in the statements (s). These statements are followed by two conclusions. Read the statements and give answer.

Statements: C > V > E; O ≥ D > X < J ≤ E

Conclusions:

I. E < O

II. V > D

III. X ≤ C

a. Only conclusion III is true.

b. Both conclusion I and II are true.

c. All the conclusions are true.

d. Both conclusion I and III are true.

e. None is true.

Answer: e

Solution:

Given statements: C > V > E; O ≥ D > X < J ≤ E

On combining, we get

C > V > E ≥ J > X < D ≤ O

Conclusions:

I. E < O: False (As E ≥ J > X < D ≤ O, the exact relation between E and O cannot be determined)

II. V > D: False (As V > E ≥ J > X < D, the exact relation between V and D cannot be determined)

III. X ≤ C: False (As C > V > E ≥ J > X, so C > X)

Hence, option e.

Question 8: In the question below, relationship between some elements is shown in the statements (s). These statements are followed by two conclusions. Read the statements and given answer.

Statements: A ≥ Q = O > T; R = Q > K ≤ B < M

Conclusions:

I. K ≤ A

II. T > R

Only conclusion I is true

Only conclusion II is true

Either conclusion I or II is true

Neither conclusion I nor II is true

Both conclusions I and II are true

Answer: d

Solution: Given statement: A ≥ Q = O > T; R = Q > K ≤ B < M

On combining statements, we get,

A ≥ Q > K and R = Q = S > T

Conclusions:

I. K ≤ A: False (As, A ≥ Q > K,)

II. T > R: False (As, R = Q = O > T)

Hence, option d.

Question 9: In the question, relationship between some elements is shown in the statements (s). These statements are followed by two conclusions. Read the statements and given answer.

Statements: A = C < E ≤ D < F; G ≥ T > F

Conclusions:

I. G > E

II. T ≥ C

a. Only conclusion I is true

b. Only conclusion II is true

c. Either conclusion I or II is true

d. Neither conclusion I nor II is true

e. Both conclusions I and II are true

Answer: a

Solution: Given statement: G ≥ T > F > D ≥ E > C.

On combining statements, we get,

A = C < E ≤ D < F; G ≥ T > F.

Conclusions:

I. G > E: True (As, G ≥ T > F > D ≥ E > C)

II. T ≥ C: False (As, G ≥ T > F > D ≥ E > C)

Hence, option a.

Question 10: In the question, relationship between some elements is shown in the statements (s). These statements are followed by two conclusions. Read the statements and given answer.

Statements: G = K < I ≥ J; I < F < X; F < L ≤ M = Y

Conclusions:

I. X > G

II. Y > J

a. Only conclusion I is true

b. Only conclusion II is true

c. Either conclusion I or II is true

d. Neither conclusion I nor II is true

e. Both conclusions I and II are true

Answer: e

Solution: Given statement: G = K < I ≥ J; I < F < X; F < L ≤ M = Y

On combining statements, we get,

X > F > I > K = G and J ≤ I < F < L ≤ N = Y

Conclusions:

I. X > G: True (As, X > F > I > K = G)

II. Y > J: True (As, J ≤ I < F < L ≤ N = Y)

Hence, option e.

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