

CHAPTER – 10

DEDUCTIONS

In a number of competitive exams there will be a few questions on "deductions". Typically, here each question consists of two statements – on the basis of which a deduction has to be made. The answer has to be chosen from the given four (or five) choices and that will be the deduction made.

(If no conclusion can be drawn or the answer is not obtained, then the choice has to be marked which will normally be worded as "none of the above").

These questions can be answered by representing the given statements by Venn Diagrams. However, here we will look at arriving at the deduction by using some simple rules.

First, let us look at some basic terms used in the rules and understand what they mean.

The two statements given in the question are called 'premises' and the answer, the conclusion.

e.g. All dogs are cats -- (i)
All cats are pigs -- (ii)

These two statements are called 'premises.'
Conclusion : All dogs are pigs.

The premises normally start with the words All, No, Some and Some - Not.

The word "All" has its synonyms as – Every, Any, Each, whereas the word "Some" can also be replaced by Many, Few, A little, Most of, Much of, More, etc. These words are referred to as qualifiers (also termed as quantifiers).

A premise consists of a subject and a predicate wherein the first term [e.g. "dogs" in statement (i)] is the subject and the second term [e.g. "cats" in statement (i)] the predicate. Similarly, in statement (ii), "cats" is called the subject and "pigs" is the predicate.

The word that occurs in both the premises is known as the 'middle term' ("cat" in the example, given above). The answer or "conclusion" should consist of the other two words ("dogs" and "pigs" in the above example) and the middle term should not appear in the answer.

The premises can be divided into

- (a) Universal statements and
- (b) Particular statements

This classification of the premises into the above categories is dependent on the qualifier used in the premise. For example, the statements where "All" is used are called Universal statements and the statements where "Some" is used are called Particular statements.

Premises can also be divided into

- (i) Positive (affirmative) statements and
- (ii) Negative statements.

If there is a negative term like "not" or "no" in the statement, it is called a negative premise. Otherwise it is called a positive premise or an affirmative statement.

The combination of the two different categories of classifications leads to four different premises as given in Table I below.

TABLE I

	Affirmative	Negative
Universal	All A	No E
Particular	some; many I	some not; many not O

The subject or the predicate can be either distributed or not distributed in the given premise.

The subject and the predicate are either distributed (✓) or not distributed (×) depending on what kind of a statement it is (particular affirmative etc.). Table II shows the distribution pattern of the subject and the predicate.

TABLE II

	Subject	Predicate
Universal affirmative	✓	×
Universal negative	✓	✓
Particular affirmative	×	×
Particular negative	×	✓

Note: ✓ indicates distributed.
x indicates undistributed.

RULES FOR DEDUCTIONS

- [1] Every deduction should contain three and only three distinct terms.
- [2] The middle term must be distributed at least once in the premises.
- [3] If one premise is negative, then the conclusion must be negative.
- [4] If one premise is particular, then the conclusion must be particular.
- [5] If both the premises are negative, no conclusion can be drawn.
- [6] If both the premises are particular, no conclusion can be drawn.
- [7] No term can be distributed in the conclusion, if it is not distributed in the premises.

We take examples of each type and look at them in detail.

Example - I

All dogs are cats. -- (i)
All cats are pigs. -- (ii)

As the first statement is a Universal affirmative statement, the subject (dogs) has to be distributed (✓) and the predicate (cats) is not distributed (×). As the second statement is also Universal affirmative, the subject cat is distributed (✓) and the predicate pigs is not distributed (×). The above answer/logic is arrived at on the basis of Table II.

The middle term ("cats" is the middle term as it occurs in both the premises) is distributed once in the premises. Hence it satisfies Rule [2]. As "dogs" is distributed in the premise and "pigs" is undistributed in the deduction also, they should appear accordingly. The type of statement that satisfies both of them is Universal affirmative statement, i.e. a statement with "All". Hence the answer will be

All dogs are pigs.

The answer cannot be 'All pigs are dogs', because Rule [7] states that no term can be distributed in the conclusion if it is not distributed in the premises. As "pigs" is not distributed in the premise, it cannot be distributed in the conclusion (because if we take "All pigs are dogs", then the subject "pigs" will be distributed). Hence, the conclusion "All pigs are dogs." is wrong.

Example - II

All cats are dogs. -- (i)
All cats are pigs. -- (ii)

Statement (i) is Universal affirmative and hence the subject "cats" is distributed and the predicate "dogs" is not distributed as per Table II.

Statement (ii) is also Universal affirmative and hence the subject "cats" is distributed and the predicate "pigs" is not distributed as per Table II.

Here, the middle term "cats" ("cats" is the middle term as it is occurring in both the premises) is distributed; hence we can draw a conclusion.

The answer should contain the terms "dogs" and "pigs" and both the terms are not distributed. Referring to Table II, we find that this is possible only in Particular affirmative [the conclusion cannot start with the qualifier 'All' as the subject in "All" should be distributed]. According to Rule 7, a term cannot be distributed in the conclusion if it is not distributed in the premises. So the answer will be

Some dogs are pigs.
or
Some pigs are dogs.

Example - III

All dogs are cats. -- (i)
All pigs are cats. -- (ii)

Statement (i) is a Universal affirmative and hence the subject "dogs" is distributed and the predicate "cats" is not distributed. In statement (ii), which is also a Universal affirmative, the subject "pigs" is distributed and the predicate "cats" is not distributed. This is arrived at on the basis of Table II.

The middle term "cats" ["cats" is the middle term as it occurs in both the statements] is not distributed in either of the two statements. From Rule [2], which states that the middle term should be distributed at least once in the premises for drawing a conclusion, we cannot draw any conclusion in this case.

Example - IV

All cats are dogs. -- (i)
Some cats are pigs. -- (ii)

The first statement is a Universal affirmative premise and hence the subject "cats" is distributed and the predicate "dogs" is not distributed (×). The second statement is Particular affirmative and hence both the subject "cats" and the predicate "pigs" are not distributed (×) as per Table II. As we have a particular premise, the conclusion should also be a particular one as per Rule [4]. The middle term is distributed, hence we can draw a conclusion. So the answer will be

Some dogs are pigs.
or
Some pigs are dogs.

Example - V

All dogs are cats. -- (i)
No cats are pigs. -- (ii)

As the first premise is a Universal affirmative, the subject (dogs) is distributed and the predicate (cats) is not distributed. In the second premise, which is a Universal negative, the first term (cats) and the second term (pigs) are both distributed (as per Table II). As the middle term is distributed at least once in the premises, Rule [2] is satisfied and hence we can draw a conclusion.

From Rule [3], which states that if one of the premises is negative the conclusion should be negative, the conclusion should be negative and as both the terms "dogs" and "pigs" are distributed, the conclusion should be a Universal negative statement. Hence the answer will be
No dogs are pigs.
or
No pigs are dogs.

Example - VI

All dogs are cats. -- (i)
Some cats are pigs. -- (ii)

Since the first statement is a Universal affirmative, "dogs" is distributed and "cats" is not distributed. Since the second statement is a Particular affirmative, "cats" is not distributed and "pigs" is also not distributed (as per Table II).

In the above given example, no conclusion can be drawn, as Rule [2] states that the middle term ("cats" in the above example as it occurs in both the premises) should be distributed at least once in the premises, which is not satisfied.

Example - VII

All dogs are cats. -- (i)
Some cats are not pigs. -- (ii)

The first statement is a Universal affirmative and hence the subject (dogs) is distributed and the predicate (cats) is not distributed.

The second statement is a Particular negative and hence the subject (cats) is not distributed and the predicate (pigs) is distributed (Table II).

But as the middle term (cats) is not distributed at least once in the premises, Rule [2] is not satisfied and hence we cannot draw any conclusion.

Example - VIII

All cats are dogs. -- (i)
Some cats are not pigs. -- (ii)

The first statement is a Universal affirmative and hence "cats" is distributed and "dogs" is not distributed. The second statement is a Particular negative and hence "cats" is not distributed and "pigs" is distributed (as per Table II).

Here, the middle term (cats) is distributed and hence we can draw a conclusion.

The conclusion should be Particular negative as Rule [3] states that if a premise is negative, the conclusion should also be negative. Also Rule [4] states that if a premise is Particular, the conclusion should also be Particular. Hence, the conclusion should be a Particular negative.

In Particular negative, we know that the subject is not distributed and the predicate is distributed.

The terms "dogs" and "pigs" should come in the conclusion. Also, since "dogs" is not distributed in the premise, it cannot be distributed in the conclusion, as per Rule [7].

As per the above reasoning, only "pigs" can be the predicate in the conclusion and hence "dogs" will be the subject.

Thus the answer will be - Some dogs are not pigs.

Example - IX

No dogs are cats. -- (i)
No cats are pigs. -- (ii)

We cannot draw any conclusion, as Rule [5] states that if both the premises are negative, we cannot draw any conclusion.

Example - X

No dogs are cats.
Some cats are not pigs.

As both the premises are negative, hence, as per Rule [5], we cannot draw any conclusion.

(Please note that the first premise is a Universal negative and hence the subject (dogs) is distributed and the predicate (cats) is also distributed as per Table II.

The second statement is a Particular negative and hence the subject (cats) is not distributed and the predicate (pigs) is distributed as per Table II).

Example - XI

Some cats are not pigs. -- (i)
Some cats are dogs. -- (ii)

As the first premise is a Particular negative, the subject (cats) is not distributed and the predicate (pigs) is distributed. In the second premise, both the subject and the predicate (cats and dogs respectively) are not distributed, since the premise is a Particular affirmative (as per Table II).

No conclusion can be drawn, as both the premises are particular as per Rule [6].

Example - XII

Some cats are not dogs. -- (i)
Some cats are not pigs. -- (ii)

We cannot get an answer from the two premises, as Rule [5] states that from two negative premises, no conclusion can be drawn. Also, Rule [6] states that from two particular premises, no conclusion can be drawn.

Exercise – 10(a)

Directions for questions 1 to 10: Each question below has four groups of three statements each. Read the statements carefully and identify the group / groups where the third statement logically follows the first two statements in the group.

1. (P) Some leaves are not petals.
No plant is a petal.
Some leaves are plants.
(Q) Some novels are dictionaries.
All dictionaries are diaries.
Some diaries are novels.
(R) Some loans are big. All investments are big.
Some loans are investments.
(S) All teachers are hardworking. All hardworking are intelligent. Some teachers are intelligent.
(A) P and Q (B) Q and R
(C) P and S (D) Q and S
2. (P) All spades are black. Some black are clubs.
Some spades are clubs.
(Q) Some papers are magazines. All magazines are good. Some papers are good.
(R) No pen is yellow. Some pencils are yellow.
Some pencils are not pens.
(S) Some biscuits are cream. All cream is butter.
All biscuits are butter.
(A) P and S (B) Q and S
(C) Q and R (D) P and Q
3. (P) All politicians are actors. Some actors are bad. Some politicians are bad.
(Q) No chair is a table. All tables are benches.
No chair is a bench.
(R) Some puzzles are tough. All tough are men.
Some men are puzzles.
(S) No man is perfect. All women are perfect.
No man is a woman.
(A) P and R
(B) R and S
(C) P and S
(D) None of these
4. (P) Some bags are books. Some books are long.
Some bags are long.
(Q) All players are fit. Some men are fit.
Some players are men.
(R) Some chairs are gold. All gold are shine.
Some chairs are shine.
(S) Some shoes are black. No boots are black.
Some shoes are not boots.
(A) P and Q (B) P and R
(C) R and S (D) None of these
5. (P) Some waters are clean. Some clothes are not clean. Some clothes are water.
(Q) All bread are jam. Some sauce is jam.
Some bread are sauce.
(R) All food items are spicy. No curry is spicy.
No curry is food.
(S) No tall person is handsome. Some who are dark are handsome. Some who are dark are not tall.
(A) R and S (B) P and R
(C) P and S (D) Q and S
6. (P) No apple is a grape. All grapes are sour.
No apple is sour.
(Q) All students are naughty. All girls are students. All girls are naughty.
(R) All boys are rough. All who are rough are free.
All boys are free.
(S) Some clues are hard. No clue is tricky.
Some which are hard are not tricky.
(A) P and R (B) P and Q
(C) Q and R (D) Q, R and S
7. (P) Some changes are acceptable. No bad is acceptable. No change is bad.
(Q) Some days are long. No day is great.
Some great are not long.
(R) All hens are pigs. No dog is a pig. No hen is a dog.
(S) All jails are strong. No strong is big. All jails are big.
(A) Only P (B) Only Q
(C) Only R (D) Only S
8. (P) All girls are beautiful. All who are beautiful are soft. All girls are soft.
(Q) Some deer are fast. No lion is fast. Some deer are not lions.
(R) Some plaits are long. All plaits are black.
Some which are black are long.
(S) Some dreams are weird. All weird are girls.
Some girls are dreams.
(A) P and Q (B) Q and R
(C) R and S (D) All the statements
9. (P) No curse is good. All blessings are good.
No curse is a blessing.
(Q) Some trains are fast. All trains are quick.
Some fast trains are quick.
(R) Some points are lines. Some clues are not points. Some lines are not clues.
(S) All one's are two's. some two's are three's.
No one is a three.
(A) P and R (B) Q and R
(C) P and Q (D) Q and S
10. (P) Some which are hot are not cool. All ice are cool. Some ice are not hot.
(Q) Some birds fly. All planes fly. Some birds are planes.
(R) All actors are directors. No director is a producer. No producer is an actor.
(S) No king is a queen. All queens are powerful.
Some kings are not powerful.
(A) P and Q (B) P and R
(C) Q and R (D) None of these

Directions for questions 11 to 20: Each of the following questions consists of six statements followed by several options consisting of three statements put together in a specific order. Choose the option which indicates a valid argument in which the third statement is a conclusion drawn from the preceding two statements.

11. (L) All doctors are intelligent.
(M) All students are hardworking.
(N) All those who are hardworking are intelligent.
(P) All doctors are surgeons.

- (Q) All students are intelligent.
 (R) All surgeons are intelligent.
 (A) LPR (B) MNQ
 (C) LMN (D) None of these
12. (L) All gems are diamonds.
 (M) Some diamonds are not sapphires.
 (N) Some rubies do not glitter.
 (P) Some rubies are gems.
 (Q) No gem is a sapphire.
 (R) Some sapphires are not rubies.
 (A) PQN (B) LQM (C) PQR (D) NPQ
13. (L) All phones are telegrams.
 (M) No telegraph is a telegram.
 (N) Some telegrams are mails.
 (P) All mails are letters.
 (Q) Some mails are not telegraph.
 (R) All phones are mails.
 (A) MNQ (B) LNR (C) QPN (D) LMN
14. (L) All doors are wood.
 (M) Some wood are teak.
 (N) All keys are doors.
 (P) Some keys are iron.
 (Q) All doors are teak.
 (R) Some keys are wood.
 (A) LMQ (B) LNR (C) NPR (D) MNR
15. (L) All tables are plastic.
 (M) Some plastic are chairs.
 (N) Some chairs are iron.
 (P) All metals are iron.
 (Q) Some tables are not iron.
 (R) Some plastic are not iron.
 (A) RNM (B) LPQ (C) MNR (D) LQR
16. (L) All ants are small.
 (M) Some small are rats.
 (N) No elephant is small.
 (P) All big are elephants.
 (Q) Some elephants are rats.
 (R) No ant is an elephant.
 (A) MNQ (B) NQM
 (C) LNR (D) None of these
17. (L) All poets are authors.
 (M) Some poets are writers.
 (N) All authors are novelists.
 (P) No novelist is a poet.
 (Q) Some writers are novelists.
 (R) No poet is an author.
 (A) NPR (B) LRN (C) LPN (D) PMQ
18. (L) Every year is a leap year.
 (M) No leap year is a non-leap year.
 (N) All years are good.
 (P) Some non-leap years are not good.
 (Q) Some leap-years are good.
 (R) Some non-leap years are years.
 (A) LMR (B) NLQ (C) PNR (D) PNL
19. (L) Some batsmen are bowlers.
 (M) No bowler is an umpire.
 (N) All bowlers are fielders.
 (P) No batsman is an umpire.
 (Q) Some fielders are umpires.
 (R) Some batsmen are fielders.
 (A) MNQ (B) QRP (C) NLR (D) PML
20. (L) Some paints are not yellow.
 (M) Some yellow are green.
 (N) Some green are not red.
 (P) Some red are yellow.
 (Q) Some blue are green.
 (R) Some paint is not green.
 (A) LRM (B) PNQ
 (C) NMP (D) None of these
- Directions for questions 21 to 23:** Each of these questions consists of six statements followed by four sets of three statements each. Select as your answer the set in which the third statement logically follows the first two statements.
21. a. Few afflictions are austerities.
 b. Few situations are not austerities.
 c. Few adversities are austerities.
 d. Few situations are not afflictions.
 e. All Austerities are situations.
 f. Every adversity is an affliction.
 (A) dab (B) dea (C) aed (D) cfa
22. a. Passion is hobby.
 b. Zeal is passion.
 c. Few hobbies are passions.
 d. Few hobbies are not zeals.
 e. No passion is hobby.
 f. Few zeals are not passions.
 (A) abd (B) dfa (C) afc (D) bed
23. a. No agitation is ardor.
 b. Few ardors are not fervours.
 c. No fervour is ardor.
 d. Few ardors are agitations.
 e. All agitations are fervours.
 f. Many fervours are ardors.
 (A) eac (B) edf (C) dbc (D) bed
- Directions for questions 24 and 25:** These questions are based on the following statements.
 All booths are cabins.
 Some dens are not cabins.
 All hovels are booths.
24. Which of the following statement contradicts the conclusion of the above three statements?
 (A) All dens are hovels.
 (B) Some dens are hovels.
 (C) Some dens are not hovels.
 (D) No den is a hovel.
25. If few kraals are hovels, then which of the following is definitely false?
 (A) Few dens are not kraals.
 (B) Few kraals are not dens.
 (C) Few kraals are dens.
 (D) No kraal is a cabin.
- Directions for questions 26 and 27:** These questions are based on the following statements.
 Changes are ideas.
 No idea is a fancy.
 Most fancies are images.
26. Which of the following statement contradicts the conclusion of the above three statements?
 (A) Few images are changes
 (B) No image is change.
 (C) All changes are not images.
 (D) All images are changes.

27. If change is an imagination, then which of the following is definitely true?
 (A) Few imaginations are images.
 (B) Few imaginations are not fancies.
 (C) Few images are not imaginations.
 (D) Few images are imaginations.

Directions for questions 28 to 30: These questions are based on the following statements.

Acumen is acuteness.
 Every idea is acumen.
 Few comprehensions are not acuteness.

28. Which of the following statements contradicts the conclusions of the above three statements?
 (A) Few ideas are not comprehensions.
 (B) No comprehension is idea.

- (C) Few ideas are comprehensions.
 (D) All comprehensions are ideas.

29. If apprehension is an idea, then which of the following can be false?

- (A) Few comprehensions are not apprehension.
 (B) Apprehension is acuteness.
 (C) Few apprehensions are acuteness.
 (D) Every acuteness is apprehension.

30. If Grasp is Comprehension, then which of the following is definitely false?

- (A) Acuteness is grasp. (B) Grasp is acumen.
 (C) Idea is grasp. (D) None of these.

Exercise – 10(b)

Directions for questions for 1 to 10: Each of these questions consists of six statements followed by several sets of three statements each. Select as your answer the set in which the statements are logically related.

1. (L) Every ball is round.
 (M) Some balls are rings.
 (N) All which are round are spheres.
 (P) All rings are round.
 (Q) Some rings are spheres.
 (R) Some rings are not spheres.
 (A) PML (B) NPL (C) PQL (D) QNP
2. (L) Some truths are lies.
 (M) No false is true.
 (N) Some false are truths.
 (P) All lies are false.
 (Q) Some lies are not false.
 (R) All false are wrong.
 (A) PQR (B) NQR (C) LPN (D) MQR
3. (L) Some teams are great.
 (M) No good is great.
 (N) Some teams are not good.
 (P) Some players are great.
 (Q) All players are good.
 (R) All players are teams.
 (A) PQM (B) RNQ (C) PRL (D) MPN
4. (L) Some women are old.
 (M) Some men are not old.
 (N) Some engineers are women.
 (P) All men are young.
 (Q) All engineers are old.
 (R) Some men are engineers.
 (A) NQL (B) PMR
 (C) LNR (D) None of these
5. (L) No cup is a saucer.
 (M) Some cups are not fly.
 (N) All cups are big.
 (P) Some saucers are flying.
 (Q) No saucer is big.
 (R) Some which fly are not cups.
 (A) LMP (B) RPL
 (C) NQL (D) Both (B) and (C)

6. (L) Some hexagons are not pentagons.
 (M) No square is a rectangle.
 (N) All rectangles are pentagons.
 (P) No pentagon is an octagon.
 (Q) Some hexagons are not rectangles.
 (R) Some quadrilaterals are not squares.
 (A) NPM (B) NQL
 (C) MNR (D) PQL
7. (L) Some cubes are prisms.
 (M) No prism is a pyramid.
 (N) No cube is a pyramid.
 (P) All prisms are pyramids.
 (Q) Some prisms are not pyramids.
 (R) All cubes are symmetrical.
 (A) NQR (B) PRN
 (C) LNP (D) LNQ
8. (L) Some chocolates are good.
 (M) Some fats are not good.
 (N) No chocolate is protein.
 (P) All proteins are good.
 (Q) No protein is a fat.
 (R) Some chocolates are proteins.
 (A) PNL (B) LPR
 (C) MPQ (D) None of these
9. (L) All grass is brass.
 (M) No brass is copper.
 (N) Some copper are metals.
 (P) All metals are gold.
 (Q) Some copper are not grass.
 (R) Some copper are gold.
 (A) LMQ
 (B) NPR
 (C) MNP
 (D) Both (A) and (B)
10. (L) No kite is a rhombus.
 (M) All rhombuses are quadrilaterals.
 (N) Some rectangles are squares.
 (P) All squares are quadrilaterals.
 (Q) No square is a rhombus.
 (R) Some quadrilaterals are not kites.
 (A) LMR
 (B) LNP
 (C) PQN
 (D) None of these

Directions for questions 11 to 13: Each question contains five or six statements followed by several sets of combinations of three. Choose the set in which the statements are logically related.

11. a. Some fishes are not whales.
b. Some sharks are not turtles.
c. Fish is not shark.
d. Turtle is fish.
e. Some whales are not turtles.
f. Whale is shark.
(A) bef (B) bcd (C) fca (D) def

12. a. A is not B.
b. C is D.
c. No D is C.
d. Some B are not A.
e. No A is C.
f. Some D are not A.
(A) adf (B) def
(C) bcd (D) bef

13. a. All Apples are Bananas.
b. Some Bananas are Oranges.
c. All Apples are Oranges.
d. No Grapes are Oranges.
e. Some Apples are not Oranges.
f. Some Grapes are not Apples.
(A) fed (B) bcd
(C) cde (D) abc

Directions for questions 14 to 17: Each question consists of five statements followed by several options consisting of three statements put together in a specific order. Choose the option which indicates a valid argument, that is, where the third statement is a conclusion drawn from the preceding two statements.

14. a. Rama is a boy.
b. Some boys do not play cricket.
c. No girl plays cricket.
d. Rama plays cricket.
e. All those who play cricket are boys.
(A) dca (B) ceb (C) abd (D) eda
15. a. All BPO companies employ young workers.
b. Company XYZ employs young workers.
c. Company XYZ is a BPO company.
d. Some BPO companies employ young workers.
e. Company XYZ employs only young workers.
(A) abc (B) cdb (C) acb (D) ace
16. a. All footballers are athletes.
b. All footballers are handsome.
c. David Beckham is handsome.
d. David Beckham is an athlete.
e. David Beckham is a footballer.
(A) ade (B) abc
(C) abe (D) None of the above
17. a. No model is ugly.
b. Arjun is not ugly.
c. Arjun is a model.
d. Arjun is not a model.
e. Arjun is ugly.
(A) acb (B) abc (C) ade (D) abe

Directions for questions 18 to 20: Each of the following questions has six statements followed by several sets of four statements. Identify the set in which the statements are logically consistent among themselves.

18. (P) All hats are red.
(Q) Some hats are blue.
(R) Some bags are brown.
(S) Some red are caps.
(T) All blue are caps.
(U) Some red are bags.
(A) PQST (B) PRTU (C) PSTU (D) QRTU
19. (P) Some dolls are cute.
(Q) Some dolls are big.
(R) All beautiful are cute.
(S) All girls are dolls.
(T) Some girls are beautiful.
(U) Some big are best.
(A) PRSU
(B) PRST
(C) RSTU
(D) None of these
20. (P) No king is powerful.
(Q) Some powerful are tyrants.
(R) All tyrants are cruel.
(S) Some tyrants are not bad.
(T) All kings are bad.
(U) Some cruel are not kings.
(A) PRSU (B) PRST
(C) RSTU (D) None of these

Directions for questions 21 to 30: Each of these questions consists of six statements followed by four sets of three statements each. Select as your answer the set in which the statements are logically related.

21. a. Few tufts are combs.
b. All crests are combs.
c. No crest is tuft.
d. All crests are tufts.
e. Few crests are not combs.
f. Few tufts are not combs.
(A) abd (B) abc (C) eda (D) bcf
22. a. Few straps are not curbs.
b. Some curbs are not chains.
c. All curbs are chains.
d. Many straps are chains.
e. Many chains are curbs.
f. Some straps are not chains.
(A) acf (B) abf (C) dae (D) afe
23. a. Few desks are not decks.
b. No slope is desk.
c. Few slopes are desks.
d. No desk is a deck.
e. No slope is decks.
f. All desks are slopes.
(A) cde (B) def (C) abe (D) bde
24. a. No dogma is a belief.
b. Few beliefs are dogmatic.
c. Some dogmatics are not dogmas.
d. Few dogmatics are dogmas.
e. Many beliefs are not dogmatic.
f. Some beliefs are dogmas.
(A) abd (B) ace (C) cba (D) bdf

25. a. No frontier is limit.
b. Few margins are not frontiers.
c. All margins are frontiers.
d. Few margins are frontiers.
e. No margin is limit.
f. Few limits are margins.
(A) eba (B) eac (C) adf (D) acf
26. a. Shed is not shelter.
b. Roof is protection.
c. Roof is shed.
d. Roof is shelter.
e. Some shelter is not protection.
f. Shed is protection.
(A) cda
(B) aef
(C) bcf
(D) None of these
27. a. Engineers are not doctors.
b. Some doctors are psychologists.
c. Some doctors are not professors.
d. Some engineers are professors.
e. No professor is a psychologist.
f. Some psychologists are not engineers.
(A) acd (B) def
(C) bfa (D) None of the above
28. a. All cricketers are footballers.
b. All footballers are magicians.
c. All magicians are cricketers.
d. Some cricketers are footballers.
e. Some footballers are magicians.
f. Some magicians are cricketers.
(A) abc (B) efb (C) bcd (D) def
29. a. Some RCs are not DCs.
b. All PCs are ACs.
c. Some ACs are not RCs.
d. Some ACs are not DCs.
e. Many RCs are PCs.
f. Some PCs are not DCs.
(A) ceb (B) fdb (C) afe (D) dba
30. a. Truss is not roof.
b. Truss is not timber.
c. Post is roof.
d. Timber is roof.
e. Post is not truss.
f. Timber is post.
(A) bfe (B) cae
(C) cdf (D) All the above

Key

Exercise – 10(a)

- | | | | | | |
|------|-------|-------|-------|-------|-------|
| 1. D | 6. D | 11. B | 16. C | 21. D | 26. D |
| 2. C | 7. C | 12. B | 17. A | 22. D | 27. B |
| 3. B | 8. D | 13. A | 18. B | 23. B | 28. D |
| 4. C | 9. C | 14. B | 19. C | 24. A | 29. D |
| 5. A | 10. D | 15. D | 20. D | 25. D | 30. D |

Exercise – 10(b)

- | | | | | | |
|------|-------|-------|-------|-------|-------|
| 1. D | 6. B | 11. C | 16. D | 21. A | 26. C |
| 2. C | 7. D | 12. D | 17. A | 22. A | 27. C |
| 3. C | 8. B | 13. D | 18. A | 23. B | 28. C |
| 4. A | 9. D | 14. D | 19. B | 24. C | 29. B |
| 5. D | 10. A | 15. C | 20. C | 25. B | 30. D |