Logic

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Practice Exercises

Direction (1 - 30): In each of the following questions, two statements are given followed by two, three or four conclusions numbered I, II, III and IV. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

1. Statements: Some birds are aquatic animals. All fish are aquatic animals.

Conclusions:

I. Some birds are fish.	
II. Some fish are birds.	

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either I or II follows
- (d) Neither I nor II follows
- (e) Both I and II follows
- **2. Statements:** All parrots are birds. All birds are animals.

Conclusions:

I. All parrots are animals	
II. All animals are birds	

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either I or II follows
- (d) Neither I nor IS follows
- (e) Both I and II follows
- **3. Statements:** All fruits are plant products. All mangoes are fruits.

Conclusions:

I. All mangoes are plant products	
II. Some fruits are mangoes	

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either I or II follows
- (d) Neither I nor II follows
- (e) Both I and II follow

 Statements: All stars are sun. All sun are moons, Conclusions:

- I. All moons are stars
- II. Some moons are stars
- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either conclusion I or II follows
- (d) Neither conclusion I nor II follows
- 5. Statements: All books are papers. All papers are grasses.

Conclusions:

I. Some grasses are books II. Some grasses are papers

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either conclusion I or II follows
- (d) Neither conclusion I nor II follows
- (e) Both conclusions I and II follow
- Statements: All stars are celestial objects. Ail moons are celestial objects.
 Conclusions:

I. All stars are moons II. All moons are stars

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either conclusion I or II follows
- (d) Neither conclusion S nor II follows
- (e) Both I and II follows
- **Statements:** All rivers are water. All lakes are water.

Conclusions:

- I. All rivers are lakes
- II. Some lakes are rivers
- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either conclusion I or II follows
- (d) Neither conclusion I nor II follows
- (e) Both I and II follows

7.

8. Statements: All boats are ships. All balloons are ships.

Conclusions:

I. Some boats are balloons
II. Some ships are balloons

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either conclusion I or II follows
- (d) Neither conclusion I nor II follows
- 9. Statements: All animals eat. All animals move. Conclusions:

I. All those who eat and move are animals	
II. All those who eat can move	

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either conclusion I or II follows
- (d) Neither conclusion I nor II follows
- (e) Both I and II follows
- **10. Statements:** All schools have a building. A is a school.

Conclusions:

I. A has a building.

II. Places other than schools do not have buildings.

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either I or II follows
- (d) Neither I nor II follows
- (e) Both 1 and II follows
- **11. Statements:** Some living things are animals. Some animals are plants.

Conclusions:

I. All plants are either animals or living things. II. Some plants are animals.

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either I or II follows
- (d) Neither I nor II follows
- (e) Both I and II follows

12. Statements: All farmers are soldiers. Some soldiers are athletes.Conclusions:

I. Some athletes are farmers.	
II. No athlete is farmer.	

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either I or II follows
- (d) Neither I nor II follows
- (e) Both I and II follows
- **13. Statements:** Some cars are busses. X is a car. **Conclusions:**

I. X is not a bus. II. X is a bus.

- (a) Only conclusion I follows
- (b) Only conclusion IS follows
- (c) Either I or II follows
- (d) Neither I nor II follows
- (e) Both land IE follows
- 14. Statements: All fish live in water. X does not live in water

Conclusions:

I. X is not fish.

II. Living in water is not essential to be a fish.

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either I or II follows
- (d) Neither I nor II follows
- (e) Both I and II follows

15. Statements: All bottles are glasses. Some plastics are not bottles.

Conclusions:

- I. All glasses are plastics.II. Some plastics are not glasses.
- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either I or II follows
- (d) Neither I nor II follows
- (e) Both I and II follows

16. Statements: Many ants are flies. All flies are insects.

Conclusions:

I.	Some ants are insects.
II.	No fly is an ant.

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either I or II follows
- (d) Neither I nor II follows
- (e) Both I and II follows
- **17. Statements:** All watches are machines. Some machines are mobiles.

Conclusions:

I. Some watches are mobiles.
II. Some mobiles are machines.

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either I or II follows
- (d) Neither I nor II follows
- (e) Both I and II follow
- **18. Statements:** Some balls are red. Some bats are red.

Conclusions:

I. Some red are bats.	
II. Some red are balls.	

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either I or II follows
- (d) Neither I nor II follows
- (e) Both I and II follows
- **19. Statements:** Some men are educated. Educated persons prefer small families.

Conclusions:

II. Some men prefer small families.

- (a) Only conclusion I follows
- (b) Only conclusion II follows
- (c) Either I or II follows
- (d) Neither I nor II follows
- (e) Both I and II follows

- Statements: All computers are mobiles. No mobile is telephone,
 Conclusions:
 - I. No computer is telephone. II. No telephone is mobile.
 - (a) Only conclusion I follows
 - (b) Only conclusion II follows
 - (c) Esther I or II follows
 - (d) Neither I nor II follows
 - (e) Both I and II follow
- Statements: All pens are pencils. All pencils are papers.
 Conclusions:

I. All pens are papers»
II. All papers are pens.
III. All pencils are pens.
IV. Some papers are pens.

- (a) None follows
- (b) Only I and IV follow
- (c) Only II and 111 follow
- (d) All follow
- (e) Only I, II and III follow
- 22. Statements: All animals are consumers. All animals are carnivores.Conclusions:

I. Either all carnivores are consumers or all consumers are carnivores.

II. Some consumers are carnivores.

III. Generally carnivores are consumers.

- (a) Only I follows(c) Only II follows
- (b) Only I and III follow
- (d) None follows
- (e) All follow
- **23. Statements:** Some marbles are sandstones. No sandstone is a loadstone,

Conclusions:

I. No marbles is a loadstone.
II. Some marbles are not loadstone,
III. Some sandstones are marbles.
IV. No sandstone is a marble.

- (a) None follows
- (b) Only I and III follow
- (c) Only Hand III follow
- (d) Only either I or IV follows
- (e) All follow
- 24. Statements: Some mathematicians are physicists. Some physicists are geologists. Conclusions:
 - I. No mathematician is a geologist. II. All physicists are geologists.
 - III. Some geologists are mathematicians.
 - IV. No physicist is a mathematician.
 - (a) Only either I or IV follows
 - (b) Only either I or II follows
 - (c) None follows
 - (d) Only either I or III follows
 - (e) All follow
- **25. Statements:** All rats are cats. Some cats are lions.

Conclusions:

I. Some rats are lions.
II. Some lions are rats.
III. Some lions are cats.
IV. Some cats are rats.

- (a) None follows
- (b) Only I and II follow
- (c) Only II and III follow
- (d) Only III and IV follow
- (e) All follow
- **26. Statements:** All lions are cats. All cats are carnivores.

Conclusions:

I. Some cats are lions.
II. No cat is lion.
III. Some carnivores are lions.
IV. All carnivores are lions.

(a) None follows.(b) Only I follows.(c) Only I and II follow.(d) Only I and III follow(e) All follow

- 27. Statements: Some books are papers. Some papers are red.Conclusions:
 - I. Some books are red.II. Some red are books.III. All red are papers.IV. All papers are books.
 - (a) None follows
 - (b) All follow
 - (c) Only I and III follow
 - (d) Only II and IV follow
 - (e) Only I, Il and III follow
- **28. Statements:** Some horses are mammals. Some mammals are dogs.

Conclusions:

I. Some dogs are horses.
II. Some mammals are horses.
III. No horse is dog.
IV. Some dogs are mammals.

- (a) Only II and III follow
- (b) Only I and IV follow
- (c) Only either III or IV, and I follow
- (d) Only II and IV and either I or III follow.
- (e) All of follow
- 29. Statements: Some birds have beaks. Some birds have wings.Conclusions:

I. Every bird has either beak or wing.
II. Some birds have neither wing nor beak.
III. Some birds have beaks as well as wings.
IV. No bird has beak as well as wing.

- (a) Only I and II follow
- (b) Only II and III follow
- (c) Only II and IV follow
- (d) Either III or IV follows
- (e) All of follow
- Statements: Some mangoes are apples. No apple is orange,
 Conclusions:

I. Some apples are mangoes.
II. Some oranges are mangoes.
III. Some mangoes are not oranges.
IV. All oranges are mangoes.

(a) Only I follows(b) Only II and III follow(c) Only I and III follow(d) Only I and II follow(e) All of follow

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

Explanations

1. Explanation:

Option (d) is correct. The first premise is an I type proposition. So, the middle term "aquatic animals' forming the predicate is not distributed. The second premise is an A type proposition. So, the middle term 'aquatic animals' forming the predicate is not distributed. Since the middle term is not distributed even once in the premises, no definite conclusion follows.

2. Explanation

Option (a) is correct. Since both the premises are universal and affirmative, the conclusion must be universal affirmative. However, conclusion II being an A-type proposition, distributes the term "animals'. Since the term 'animals' is distributed in conclusion II without being distributed in any of the premises, so conclusion II cannot follow.

3. Explanation

Option (e) is correct. Since both the premises are universal and affirmative, the conclusion must be universal affirmative and should not contain the middle term. So I follows. II is the converse of the second premise, so it also holds.

4. Explanation

Option (b) is correct. Since both the premises are universal and affirmative, the conclusion must be universal affirmative and should not contain the middle term. So, it follows that 'All stars are moons'. II is the converse of this conclusion and so it holds. Since the term moons are distributed in I without being distributed in any of the premises, so I does not follow.

5. Explanation

Option (e) is correct. Since both the premises are universal and affirmative, the conclusion must be universal affirmative and should not contain the middle term. So, it follows that 'All books are grasses'. I is the converse of this conclusion and so it holds, II is the converse of the second premise and so it also holds.

6. Explanation

Option (d) is correct. Since the middle term - celestial objects- is not distributed even once in the premises, no definite conclusion can be drawn.

7. Explanation

Option (d) is correct. Since the middle term 'water- is not distributed even once in the premises, no definite conclusion can be drawn.

8. Explanation

Option (b) is correct. Since the middle term ships- is not distributed even once in the premises, no definite conclusion can be drawn. However II is the converse of the second premise so it holds.

9. Explanation

Option (d) is correct. Since the middle term 'animals- is distributed twice in the premises, the conclusion must be particular and should contain the middle term.

10. Explanation

Option (a) is correct. Since both the premises are universal and affirmative, the conclusion must be universal affirmative and should not contain the middle term. So, only I follows.

11. Explanation

Option (b) is correct. Since both the premises are particular, no definite conclusion follows. However, II is the converse of the second premise and thus it holds.

12. Explanation

Option (c) is correct. Since the middle term soldiers' is not distributed even once in the premises, no definite conclusion follows. However, I and II involve only the extreme terms and form a complementary pair. So, either I or II follows.

13. Explanation

Option (c) is correct. Since the middle term 'cars' is not distributed even once in the premises, no definite conclusion follows. However, S and II involve only the extreme term; and form a complementary pair. Thus, either I or II follows.

14. Explanation

Option (a) is correct. Since both the premises are universal and one premise is negative the conclusion must be universal negative and should not contain the middle term. So only I follows.

15. Explanation

Option (d) is correct. Clearly, the term 'glasses' is distributed in both the conclusions without being distributed in any of the premises. So, neither conclusion follows.

16. Explanation

Option (a) is correct. Since the first premise is particular, the conclusion must be particular and should not contain the middle term. Thus, only I follows.

17. Explanation

Option (b) is correct. Since the middle term 'machines' is not distributed even once in the premises, no definite conclusion follows. However, II is the converse of the second premise and so it holds.

18. Explanation

Option (e) is correct. Since both premises are particular, no definite conclusion follows. However, I is the converse of second premise, while II is the converse of the first premise. So, both of them hold.

19. Explanation

Option (b) is correct. Since one premise is particular, the conclusion must be particular and

should not contain the middle term. Thus, only II follows.

20. Explanation

Option (e) is correct. Since both the premises are universal and one premise is negative, the conclusion must be universal negative. Also, the conclusion should not contain the middle term. So, I follows. However, II is the converse of the second premise and thus it also holds,

21. Explanation

Option (b) is correct. Since both the premises are universal and affirmative, the conclusion must be universal affirmative and should not contain the middle term. So, it follows that "All pens are papers'. Thus, I follows. IV is the converse of this conclusion and so it also holds.

22. Explanation

Option (c) is correct. Since the middle term 'animals' is distributed twice in the premises, the conclusion cannot be universal. So, it follows that 'Some consumers are carnivores'. Thus, II holds.

23. Explanation

Option (c) is correct. Since one premise is particular and the other negative, the conclusion must be particular negative and should not contain the middle term. So, II follows. III is the converse of the first premise and thus it also holds.

24. Explanation

Option (d) is correct. Since both the premises are particular, no definite conclusion follows. However, I and III involve only the extreme terms and form a complementary pair. Thus, either I or ill follows.

25. Explanation

Option (d) is correct. Since the middle term 'cats' is not distributed even once in the premises, no definite conclusion follows. However, III is the converse of the second premise while IV is the converse of the first premise. So, both of them hold.

26. Explanation

Option (d) is correct. Clearly, it follows that 'All lions are carnivores'. S is the converse of the first

premise, while ill is the converse of the above conclusion. So, both I and III hold.

27. Explanation

Option (a) is correct. Since both the premises are particular, no definite conclusion follows.

28. Explanation

Option (d) is correct. Since both the premises are particular, no definite conclusion follow. However, I and III involve only the extreme terms and form a complementary pair. So, either I or III follows. II is the converse of the first premise while IV is the converse of the second premise. Thus, both of them hold.

29. Explanation

Option (d) is correct. Since both the premises are particular, no definite conclusion follows. However, III and IV form a complementary pair. Thus, either III or IV follows.

30. Explanation

Option (c) is correct. Since one premise is particular and the other negative, the conclusion must be particular negative and should not contain the middle term. Thus, III follows. I is the converse of the first premise and so it also holds.