

General Intelligence & Reasoning

PRACTICE BOOK

for

Junior Engineer

**Logical
Reasoning**

**Analytical
Reasoning**

**Non-verbal
Reasoning**

SECTION

A

Comprehensive Theory
with Solved Examples

SECTION

B

5 **MOCK**
TESTS

*Also useful for various Public Sector Examinations
& other Competitive Examinations*



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General Intelligence and Reasoning : Practice Book for Junior Engineer

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General Intelligence & Reasoning

Section

A

Comprehensive Theory

with

Solved Examples





LEARNING Objectives

After completion of this chapter, you should have a thorough understanding of the following:

- Word analogy
- Number analogy
- Methods of solving
- Kinds of questions which are asked in SSC-JE
- Letter analogy
- Mixed analogy



INTRODUCTION to the topic

Questions on analogy test the ability of a candidate to understand the relationship between two given elements and apply the same relationship to find the one asked in the question.

With respect to preparation for the SSC-JE Examination, Analogies has been seen to be one of the most important topics in the General Intelligence and Reasoning part of SSC-JE with a total of 9 questions in the last conducted exam. This chapter will give you a clear understanding of the definitions and the concepts, and help you develop a keen insight about different kinds of analogies asked in the SSC-JE.



TYPE OF QUESTIONS

Question asked from this topic are based on concepts:

Questions based on related Words | Questions based on related Set of numbers |

Questions based on related English alphabets | Miscellaneous Questions

ANALOGIES OR SIMILARITY

If the relationship between one pair of words is similar to another pair of words then we say that both the pair of words are analogous to each other. In simple words, the relationship between two words must be same for other words associated with them too.

NOTE : In this section we have to analyze the relationship between two given pairs and find the relationship between other two pairs among which one is given in the question and other one will be present in the options.

TYPES OF ANALOGY

Analogy can be categorized into following two types:

- Words Analogy
- Number Analogy

Word analogy again can be reclassified into following two sections:

- Meaningful Words
- Non-Meaningful Words

1. Kinds of Word Relationship

First find the relationship between the two given words and once you find that, go for finding the similar relationship word for the asked word from the given options.

2. Opposite Relationship

If two given pairs are opposite in meaning to each other, similar kind of relationship has to be chosen for the question pair from the given options.

For example: Kinetic : Potential

3. Synonymous Relationship

The two words of the question pairs are similar in meaning and that relationship has to be found among the words given in the answer choice word pair.

For example: Huge : Big

4. Cause and Effect

Here if one word will be the cause then other will be its effect.

For example: Fire : Death

5. Worker and Article Relationship

Here the relationship is about the maker or producer with its production.

For example: Writer : Novel

6. Worker and Tool Relationship

Relationship is among a particular class of people and the tools used by them.

For example: Student : Pen

7. Tool and Object Relationship

It describes the relationship between the tool and its corresponding object.

For example: Paint : Wall

8. Number Analogy

There will be certain relationship among the first two numbers. We have to find that and accordingly solve the question.

Ex.1 4 : 8 :: 16 : ?

- (a) 21 (b) 19
(c) 32 (d) 51

Sol. (c)

Here either $4 + 4 = 8$ or $4 \times 2 = 8$. Following the similar fashion, our answer should be either $16 + 4 = 20$ or $16 \times 2 = 32$.

As 20 is not there but 32 is there, hence it is the correct answer.

SOLVED EXAMPLES

Analogies or Similarity

Q.1 In the following question, select the related word from the given alternatives.

Square : Four :: ? : ?

- (a) Rectangle : Five (b) Hexagon : Seven
(c) Rhombus : Six (d) Triangle : Three

Sol. (d)

Square has four sides.

Similarly, triangle has three sides.

Q.2 In the following question, select the related letter pair from the given alternatives.

TRAP : YWFU :: FROG : ?

- (a) KHLG (b) KWTL
(c) WKLH (d) FGHL

Sol. (b)

$$\begin{array}{ccc}
 T \xrightarrow{+5} Y & & F \xrightarrow{+5} K \\
 R \xrightarrow{+5} W & & R \xrightarrow{+5} W \\
 A \xrightarrow{+5} F & \therefore & O \xrightarrow{+5} T \\
 P \xrightarrow{+5} U & & G \xrightarrow{+5} L
 \end{array}$$

Q.3 In the following question, select the related letters from the given alternatives.

FAN : MZU :: LIP : ?

- (a) FGA (b) KRO
(c) ANP (d) TSQ

Sol. (b)

$$\begin{array}{ccc}
 F \xrightarrow{27-6} U & & L \xrightarrow{27-12} O \\
 A \xrightarrow{27-1} Z & \therefore & I \xrightarrow{27-9} R \\
 N \xrightarrow{27-14} M & & P \xrightarrow{27-16} K
 \end{array}$$

Q.4 In the following question, select the related number from the given alternatives.

46 : 24 :: 54 : ?

- (a) 30 (b) 24
(c) 20 (d) 36

Sol. (c)

$$\begin{array}{ccc}
 46 & \xrightarrow{4 \times 6} & 24 \\
 54 & \xrightarrow{5 \times 4} & 20
 \end{array}$$

Q.5 In the following question, select the related number from the given alternatives.

11 : 24 :: 23 : ?

- (a) 42 (b) 36
(c) 54 (d) 58

Sol. (b)

$$\begin{array}{l}
 11 + 13 = 24 \\
 23 + 13 = 36
 \end{array}$$

Q.6 Bird : Wing :: Fish : ?

- (a) Gill (b) Fin
(c) Tail (d) Scale

Sol. (b)

Wing is the organ for movement of Bird. Similarly, Fin is the organ for movement of Fish.

Q.7 48 : 122 :: 168 : ?

- (a) 215 (b) 225
(c) 290 (d) 292

Sol. (c)

As,

$$\begin{array}{ccc}
 48 & : & 122 \\
 \downarrow & & \downarrow \\
 (7^2 - 1) & & (7 + 4)^2 + 1
 \end{array}$$

Similarly,

$$\begin{array}{ccc}
 168 & : & 290 \\
 \downarrow & & \downarrow \\
 (13^2 - 1) & & (13 + 4)^2 + 1
 \end{array}$$

Q.8 Touch is related to feel, in the same way Hear is related to

- (a) Listen (b) Noise
(c) Loudness (d) Vibrate

Sol. (a)

As, touch and feel are synonyms, similarly hear and listen are synonyms.

Q.9 Dictionary : Words :: ? : Date

- (a) Day (b) Girlfriend
(c) Almanac (d) Plam

Sol. (c)

As, Dictionary contains words, similarly Almanac contains date.

Q.10 East : North-West :: North : ?

- (a) West (b) South-East
(c) North-East (d) South-West

Sol. (d)

As, we move 135° anticlockwise from East direction we get North-West direction.

Similarly, when we move 135° anticlockwise from North direction we get South-West direction.

Q.11 27 : 9 :: 125 : ?

- (a) 5 (b) 12
(c) 25 (d) 45

Sol. (c)

$$\begin{array}{ccc}
 \text{As, } 27 & 9 & \text{Similarly, } 125 & \boxed{25} \\
 \downarrow & \downarrow & \downarrow & \downarrow \\
 3^3 & 3^2 & 5^3 & 5^2
 \end{array}$$

Q.12 14 : 49 :: 18 : ?

- (a) 56 (b) 59
(c) 63 (d) 85

Sol. (c)

$$As, (14 \div 2) \times 7 = 7 \times 7 = 49$$

$$\text{Similarly, } (18 \div 2) \times 7 = 9 \times 7 = 63$$

Q.13 The numbers in each group are related in a certain way. Choose the correct number from among the alternatives that will replace the question mark.

$$(3 [9] 6) (7 [25] 12) (11 [?] 15)$$

- (a) 28 (b) 16
(c) 32 (d) 36

Sol. (b)

$$As, 6 - 3 = 3 \Rightarrow 3^2 = 9 \text{ (Middle number)}$$

$$\text{and } 12 - 7 = 5 \Rightarrow 5^2 = 25 \text{ (Middle number)}$$

$$\text{Similarly, } 15 - 11 = 4 \Rightarrow 4^2 = 16 \text{ (Middle number).}$$



PRACTICE QUESTIONS

Q.1 In the following question, select the related word pair from the given alternatives.

Rain : Clouds :: ? : ?

- (a) Rice : Food
(b) Grey : Colour
(c) Heat : Sun
(d) Snow : Mountains

Q.2 In the following question, select the related word from the given alternatives.

Cactus : Plant :: Rice : ?

- (a) Basmati (b) Crop
(c) White (d) Rabi

Q.3 In the following question, select the related letters from the given alternatives

LERI : PJVN :: MONT : ?

- (a) WRTY (b) QTRY
(c) RITY (d) RQYB

Q.4 In the following question, select the related letters from the given alternatives.

SAT : WEX :: MET : ?

- (a) AQL (b) IYX
(c) FHY (d) QIX

Q.5 In the following question, select the related number from the given alternatives.

38 : 53 :: 53 : ?

- (a) 72 (b) 68
(c) 79 (d) 87

Q.6 In the following question, select the related number from the given alternatives.

9 : 81 :: 11 : ?

- (a) 78 (b) 93
(c) 121 (d) 146

Q.7 In the following question, select the related word pair from the given alternatives.

Car : Tyre :: ? : ?

- (a) House : Room (b) Labour : Salary
(c) Camera : Photo (d) House : People

Q.8 In the following question, select the related letters from the given alternatives.

ROCK : VSGO :: BELT : ?

- (a) AKLM (b) FIPX
(c) FCXT (d) ERPX

Q.9 In the following question, select the related letters from the given alternatives.

LS : HO :: TQ : ?

- (a) FM (b) PM
(c) CL (d) TF

Q.10 In the following question, select the related number from the given alternatives.

11 : 121 :: 15 : ?

- (a) 289 (b) 343
(c) 225 (d) 217

Q.11 Find the 2nd number of the 2nd pair:

9876 : 7654 :: 4673 : ?

- (a) 2637 (b) 2451
(c) 235 (d) None of these

Q.12 Find a pair that is similar to 3 : 15

- (a) 1 : 2 (b) 5 : 45
(c) 11 : 65 (d) 2 : 14

Q.13 Rca : aCR :: Rrb : ?

- (a) JBr (b) bRR
(c) RRp (d) McA

Q.14 3754 : 5976 :: 7563 : ?

- (a) 2857 (b) 9785
(c) 2367 (d) None of these

Q.15 Find a pair that is similar to: 11 : 77

- (a) 1 : 2 (b) 13 : 143
(c) 11 : 65 (d) 2 : 14

ANSWER KEY Practice Questions

1. (c) 2. (b) 3. (b) 4. (d) 5. (b)
 6. (c) 7. (a) 8. (b) 9. (b) 10. (c)
 11. (b) 12. (a) 13. (b) 14. (b) 15. (b)

Solutions of Practice Questions

1. (c)
Clouds give Rain. Similarly, Sun gives Heat.
2. (b)
Cactus is a plant. Similarly, Rice is a crop.
3. (b)
- | | | |
|------------------------|----|------------------------|
| $L \xrightarrow{+4} P$ | :: | $M \xrightarrow{+4} Q$ |
| $E \xrightarrow{+5} J$ | | $O \xrightarrow{+5} T$ |
| $R \xrightarrow{+4} V$ | | $N \xrightarrow{+4} R$ |
| $I \xrightarrow{+5} N$ | | $T \xrightarrow{+5} Y$ |
4. (d)
- | | | |
|------------------------|----|------------------------|
| $S \xrightarrow{+4} W$ | :: | $M \xrightarrow{+4} Q$ |
| $A \xrightarrow{+4} E$ | | $E \xrightarrow{+4} I$ |
| $T \xrightarrow{+4} X$ | | $T \xrightarrow{+4} X$ |
5. (b)
- | | | |
|---------------------------------------|----|---------------------------------------|
| $38 : 53$ | :: | $53 : 68$ |
| \downarrow
$38 + 15 \rightarrow$ | | \downarrow
$53 + 15 \rightarrow$ |
6. (c)
- | | | |
|-----------------------------------|----|------------------------------------|
| $9 : 81$ | :: | $11 : 121$ |
| \downarrow
$9^2 \rightarrow$ | | \downarrow
$11^2 \rightarrow$ |
7. (a)
Cars have Tyres.
Similarly, Houses have Rooms.

8. (b)

$R \xrightarrow{+4} V$::	$B \xrightarrow{+4} F$
$O \xrightarrow{+4} S$		$E \xrightarrow{+4} I$
$C \xrightarrow{+4} G$		$L \xrightarrow{+4} P$
$K \xrightarrow{+4} O$		$T \xrightarrow{+4} X$

9. (b)

$L \xrightarrow{-4} H$::	$T \xrightarrow{-4} P$
$S \xrightarrow{-4} O$		$Q \xrightarrow{-4} M$

10. (c)

$11 : 121$::	$15 : 225$
\downarrow 11^2		\downarrow 15^2

11. (b)

The relationship between 1st & 2nd group is $x : (x - 2222)$. So the correct answer is (b).

12. (a)

The 1st number is multiplied by the next prime number to obtain the 2nd number. So the correct answer is 1:2.

13. (b)

The order of the letters of the 1st group is reversed and the middle small letter is replaced by a capital letter to obtain the 2nd group. So the correct answer is option (b).

14. (b)

The relationship between 1st & 2nd group is $x : (x + 2222)$. So the correct answer is (b).

15. (b)

The 1st number is multiplied by the previous prime number to obtain the 2nd number. So the correct answer is 13: 143.



General Intelligence & Reasoning

Section

B

5 **MOCK**
TESTS



Q.1 In the following question, select the related word from the given alternatives ?

Player : Team :: Minister : ?

- (a) Army (b) Troupe
(c) Council (d) Crowd

Q.2 Select the related number from the given alternatives:

1 : 8 :: ? : 64

- (a) 36 (b) 27
(c) 30 (d) 25

Q.3 Select the related letters from the given alternatives:

ZXVT : ACEG :: SQOM : ?

- (a) FHJL (b) HJLN
(c) JLMO (d) IKMO

Q.4 B is bother of A, whose only sister is mother of C. D is maternal grandmother of C. How is A related to D?

- (a) Mother (b) Daughter
(c) Son (d) Daughter or Son

Q.5 Pointing to a lady in a photograph, Meera said, "Her father's only son's wife is my mother-in-law". How is Meera's husband related to that lady in the photo?

- (a) Nephew (b) Uncle
(c) Son (d) Father

Q.6 If '+' means '-', '-' means 'x', 'x' means '÷' and '÷' means '+' then $2 \div 6 \times 6 \div 2 = ?$

- (a) 1 (b) 0
(c) 10 (d) 5

Q.7 Some symbols are represented by alphabets

as

+	-	×	÷	=	>	<
B	G	E	C	D	A	F

of the four

alternatives only one expression has the correct relationship. Identify that:

- (a) 18F 3B 6E 8G 4E 12
(b) 18C 3G 6B 8B 4D 12
(c) 18A 3E 6B 8G 4B 12
(d) 18C 3D 6B 8C 4G 12

Q.8 If 0, 1, 2, 3,, 9 is written as a, b, c, d,, j then find $dc \times f - (bf - d) \times d$

- (a) bcf (b) abe
(c) abb (d) bce

Q.9 Select the correct combination of mathematical signs to replace * signs and to balance the following equation :

$$(45 * 3) * 6 * 2 * 16$$

- (a) + × ÷ = (b) + ÷ × =
(c) = × - ÷ (d) + + - =

Q.10 Find the odd word from the given alternatives.

- (a) Tomcat (b) Baby
(c) Fawn (d) Cub

Q.11 Find the odd word from the given alternatives

- (a) Fire (b) Light
(c) Gas (d) Water

Q.12 Which of the following of the largest number?

- (a) 20% of 200 (b) 7% of 500
(c) 1300% of 3 (d) 600% of 7

Q.13 Find the odd letters from the given alternatives.

- (a) ECBY (b) RTUX
(c) GEDA (d) WUTQ

Answer Key

MOCK TEST - 01

Junior Engineer (JE)

1. (c) 2. (b) 3. (b) 4. (d) 5. (a) 6. (d) 7. (b) 8. (d) 9. (b)
 10. (b) 11. (d) 12. (d) 13. (b) 14. (c) 15. (c) 16. (c) 17. (b) 18. (b)
 19. (a) 20. (c) 21. (d) 22. (c) 23. (c) 24. (d) 25. (b) 26. (b) 27. (a)
 28. (a) 29. (d) 30. (c) 31. (c) 32. (b) 33. (c) 34. (c) 35. (b) 36. (a)
 37. (a) 38. (b) 39. (c) 40. (b) 41. (d) 42. (b) 43. (a) 44. (c) 45. (a)
 46. (d) 47. (b) 48. (c) 49. (c) 50. (b)

DETAILED
EXPLANATIONS

MOCK TEST - 01

Junior Engineer (JE)

1. (c)
 Second is the group of the first. A group of players is called a team. Similarly, a group of Ministers is called Council (of Minister).

2. (b)

$$(1)^3 = 1$$

$$(2)^3 = 8$$

Similarly,

$$(3)^3 = 27$$

$$(4)^3 = 64$$

3. (b)

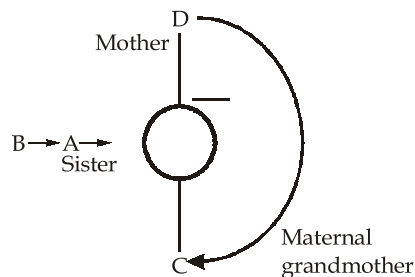
Z X V T
 ↓ ↓ ↓ ↓
 A C E G

Pairs of opposite letters.

Similarly,

S Q O M
 ↓ ↓ ↓ ↓
 H J L N

4. (d)



5. (a)

The wife of brother of woman in photograph is mother-in-law of Meera.