# अध्याय 16

# शृंखला
## Series

*शृंखला के अन्तर्गत प्रश्नों में दो प्रकार की आकृतियाँ होती हैं एक प्रश्न आकृति तथा दूसरी उत्तर आकृति। प्रश्न आकृतियाँ एक निश्चित क्रम के अनुसार एक शृंखला बनाती हैं। इन तीन या चार प्रश्न आकृतियों की अवस्थिति के बीच सम्बन्ध होता है और इसी सम्बन्ध के कारण शृंखला का निर्माण होता है। आपको यह ज्ञात करना होता है कि उत्तर आकृतियों में से वह कौन-सी आकृति है, जो प्रश्न आकृतियों की नियमित शृंखला को बनाए रख सकती हैं?*

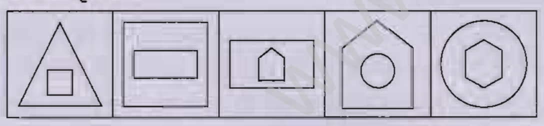
### इन्हें स्मरण रखें!

*लुप्त/शृंखला को जारी रखने वाली आकृति का पता लगाने के लिए निम्नलिखित सम्बन्धों की जानकारी होना आवश्यक है*

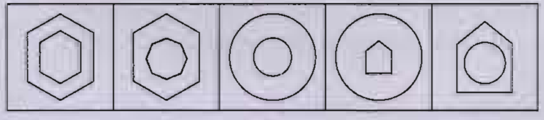
**रूप एवं आकार** (Shape and Size) रूप एवं आकार से सम्बन्धित प्रश्नों में आकृतियाँ छोटी से बड़ी, बड़ी से छोटी, दाएँ से ब.ाँ, बाएँ से दाएँ, ऊपर से नीचे, नीचे से ऊपर दक्षिणावर्त दिशा में या वामावर्त दिशा में एवं सभी सम्भव दिशाओं में सीधे रूप में या उलटते-पलटते हुए अथवा दर्पण प्रतिबिम्ब बनाते हुए परिवर्तित होती रहती हैं। इन परिवर्तनों के क्रम में आकृतियाँ एक नया रूप भी धारण कर सकती हैं।

**जैसे**

**प्रश्न आकृतियाँ**



**उत्तर आकृतियाँ**



(1) (2) (3) (4) (5)

प्रश्न आकृतियों का ध्यानपूर्वक अवलोकन करने के बाद आप पाते हैं कि प्रत्येक अगली आकृति में सबसे अन्दर की छोटी आकृति अगले में बड़ी हो जाती है तथा उसके अन्दर एक नयी आकृति छोटे आकार में आ जाती है। आगे यही क्रम जारी रहता है, तो उत्तर आकृति (2) प्राप्त होगी।

**चिह्नाकृतियाँ** (Signing Figures) चिह्नाकृतियों से सम्बन्धित प्रश्नों में ज्यामितीय (**जैसे** त्रिभुज, चतुर्भुज, वर्ग, आयत, पंचभुज, षष्टभुज, वृत्त आदि), त्रिकोणमितीय (**जैसे** θ,), गणितीय (**जैसे** +, −, ×, ÷, =, ≠ आदि), अंग्रेजी अक्षर (**जैसे** A, B, C, D ...... आदि) तथा अन्य अर्थहीन छोटी आकृतियाँ (**जैसे** $, #, ? आदि) सभी सम्भव दिशाओं में घूमती हैं। आकृतियाँ परिवर्तन के क्रम में एक नया रूप भी धारण कर सकती हैं।

**जैसे**

**प्रश्न आकृतियाँ**

| | | | | |
|---|---|---|---|---|
| VIJAY | SVIJA | RSVIJ | ARSVI | DARSV |

**उत्तर आकृतियाँ**

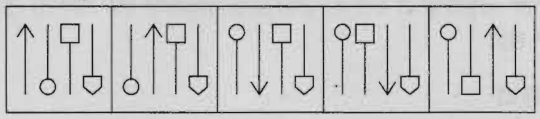
| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| YAJIV | AJIVS | JIVSR | LDARS | JVSIR |

प्रश्न आकृतियों का ध्यानपूर्वक अवलोवन करने के बाद आप पाते हैं कि प्रत्येक अगली आकृति में सभी अक्षर एक स्थान दाएँ सरक जाते हैं तथा सबसे बाएँ एक नया अक्षर आ जाता है। आगे यही क्रम जारी रहता है, तो उत्तर आकृति (4) प्राप्त होगी।

**रेखाकृतियाँ** (Lining Figures) रेखाकृतियों से सम्बन्धित प्रश्नों में रेखाकृतियाँ आपस में स्थान परिवर्तन करते हुए, नवीनता ग्रहण करते हुए ऊपर नीचे होते हुए, दाएँ-बाएँ होते हुए, उल्टी-सीधी होते हुए दक्षिणावर्त या वामावर्त दिशा में स्थान परिवर्तन करते हुए अपने गतिपथ पर गतिमान होती हैं।

**जैसे**

**प्रश्न आकृतियाँ**



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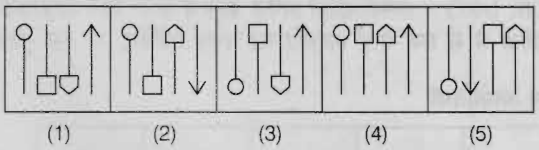
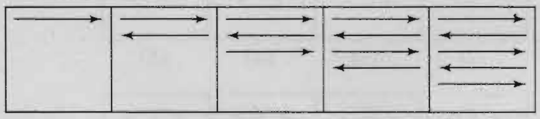


प्रश्न आकृतियों का ध्यानपूर्वक अवलोकन करने के बाद आप पाते हैं कि बाईं ओर से प्रारम्भ होकर एक बार दो-दो रेखाकृतियाँ परस्पर स्थान परिवर्तन करती हैं तथा दूसरी बार अपने स्थान पर उलट जाती हैं। आगे यही क्रम जारी रहता है, तो उत्तर आकृति (1) प्राप्त होगी।

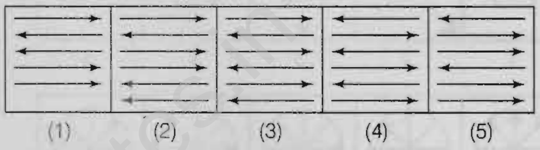
**समान्तर एवं असमान्तर** (Parallel and Non-parallel) समान्तर एवं असमान्तर से सम्बन्धित प्रश्नों में रेखाओं, आकृतियों, चित्रों, डिजाइनों, में समान्तर एवं असमान्तर का गुण विद्यमान होता है।

**जैसे**

**प्रश्न आकृतियाँ**



**उत्तर आकृतियाँ**

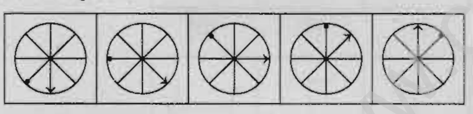


प्रश्न आकृतियों का ध्यानपूर्वक अवलोकन करने के बाद आप पाते हैं कि प्रत्येक अगली आकृति में नीचे की ओर विपरीत दिशा में एक तीर का डिजाइन और बढ़ जाता है। आगे यही क्रम जारी रहता है, तो उत्तर आकृति (3) प्राप्त होगी।

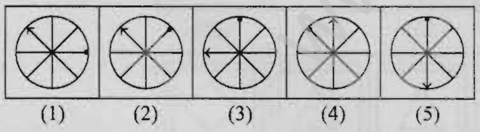
## साधित उदाहरण

**निर्देश** (प्र.सं. 1 और 2) *निम्नलिखित प्रत्येक प्रश्न में पाँच प्रश्न आकृतियाँ तथा पाँच उत्तर आकृतियाँ दी गई हैं। पाँचों प्रश्न आकृतियाँ एक शृंखला बनाती हैं। उत्तर आकृतियों में से एक ऐसी आकृति का चयन कीजिए, जो इस शृंखला को जारी रखें।*

**1. प्रश्न आकृतियाँ**

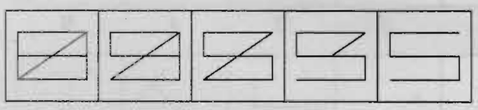


**उत्तर आकृतियाँ**

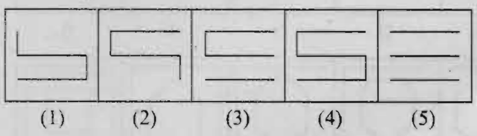


**हल** (*1*) प्रश्न आकृति की प्रत्येक अगली आकृति में तीर वामावर्त दिशा में तथा पिन दक्षिणावर्त दिशा में एक स्थान आगे बढ़ते हैं।

**2. प्रश्न आकृतियाँ**



**उत्तर आकृतियाँ**



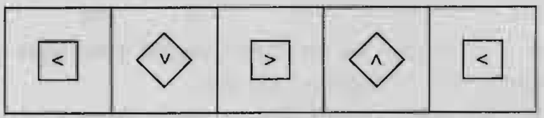
**हल** (*2*) प्रश्न आकृति की प्रत्येक अगली आकृति में एक बार आकृति के निचले भाग से तथा अगली बार आकृति के ऊपरी भाग से एक रेखा लुप्त हो जाती है।

# अभ्यास प्रश्न

**निर्देश** (प्र.सं. 1-98) *निम्नलिखित प्रत्येक प्रश्न में पाँच प्रश्न आकृतियाँ तथा पाँच उत्तर आकृतियाँ दी गयी हैं। पाँचों प्रश्न आकृतियाँ एक निश्चित शृंखला बनाती हैं। उत्तर आकृतियों में से एक ऐसी आकृति का चयन कीजिए, जो इस शृंखला को जारी रखे।*

**प्रश्न आकृतियाँ** / **उत्तर आकृतियाँ**

**1.**



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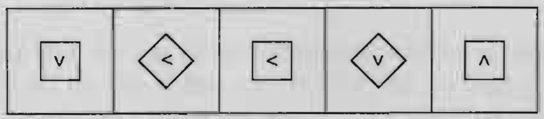

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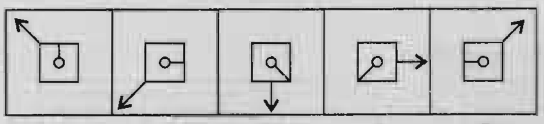
**2.**



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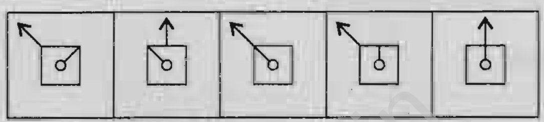

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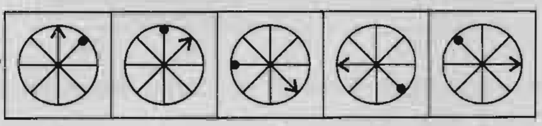

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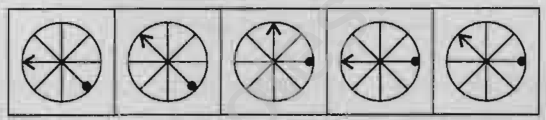

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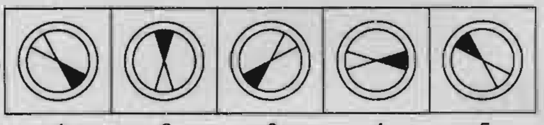

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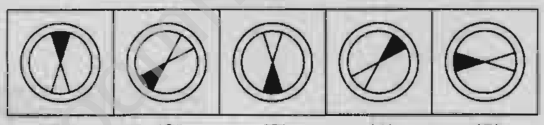

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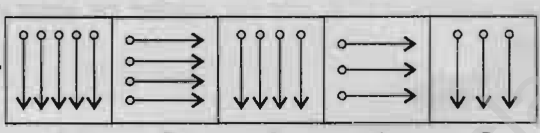
**5.**



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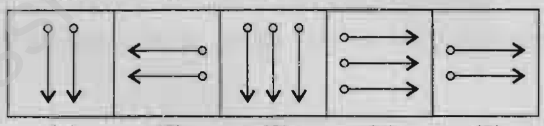

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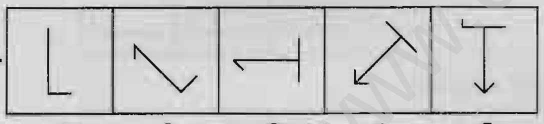

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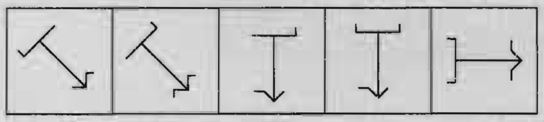

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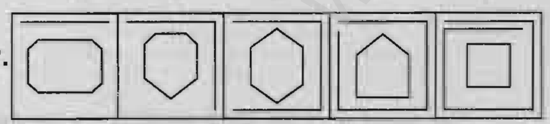

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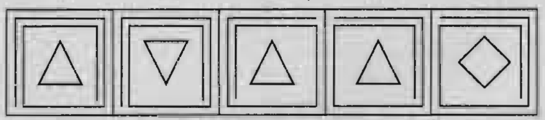

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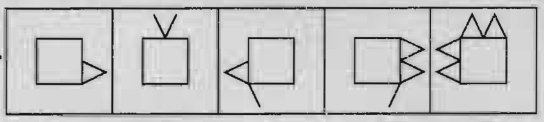

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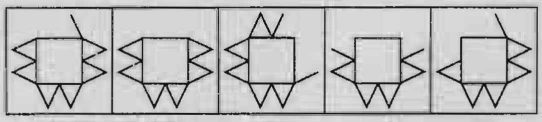

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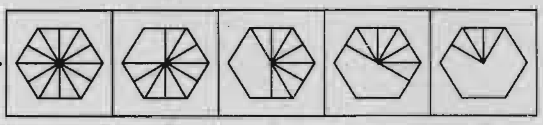

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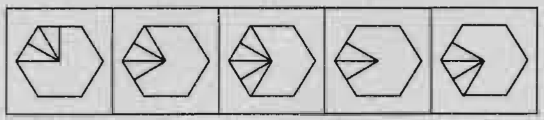

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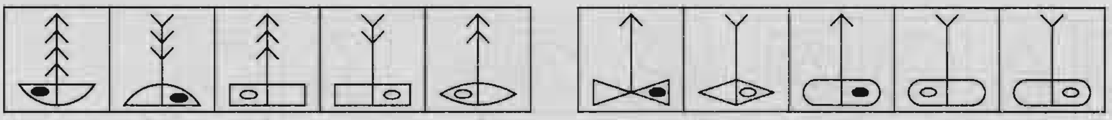
**10.** 

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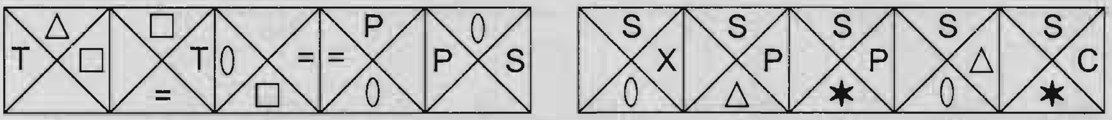
**11.** 

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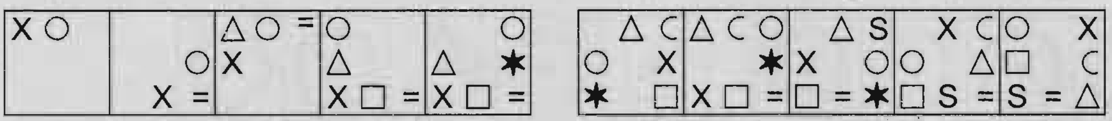
**12.** 

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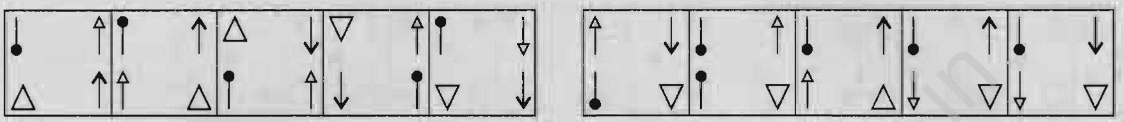
**13.** 

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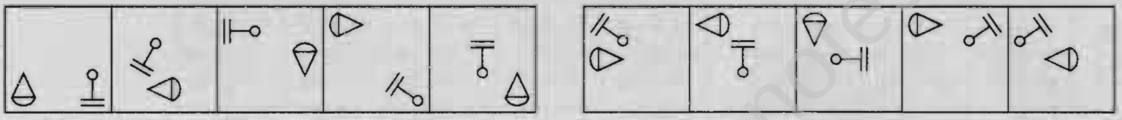
**14.** 

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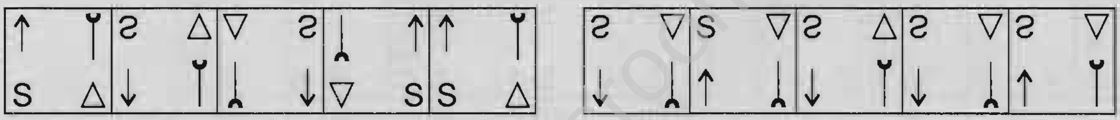
**15.** 

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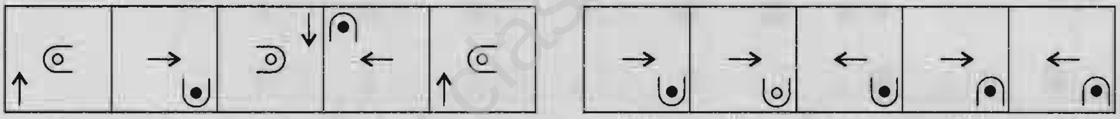
**16.** 

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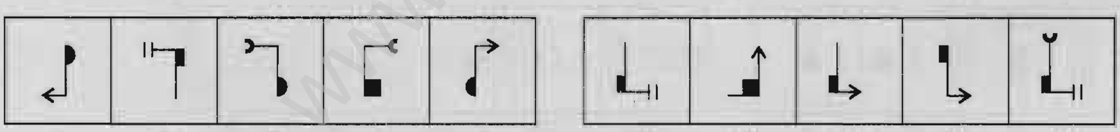
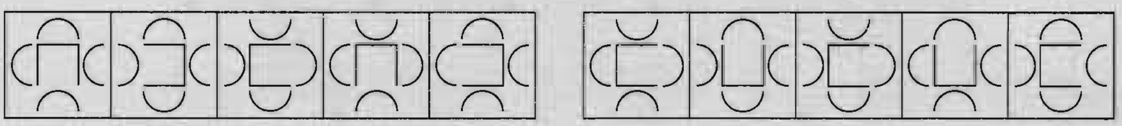
**17.** 

1 2 3 4 5 (1) (2) (3) (4) (5)

**18.** 

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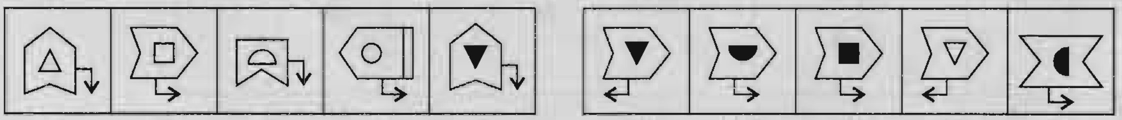
**19.** 

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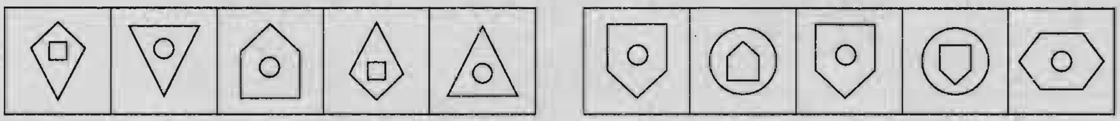
**20.** 

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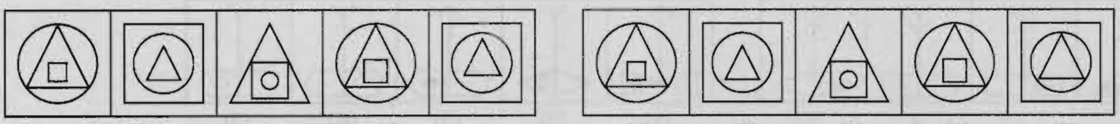

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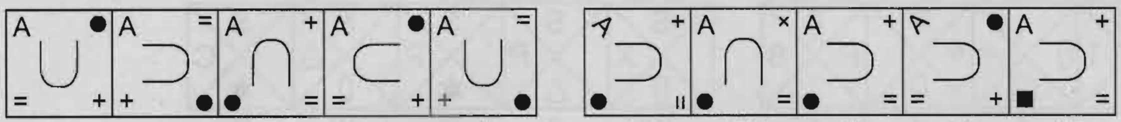

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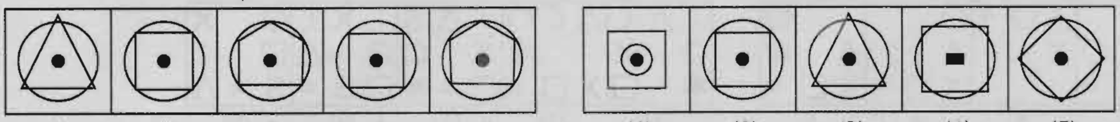

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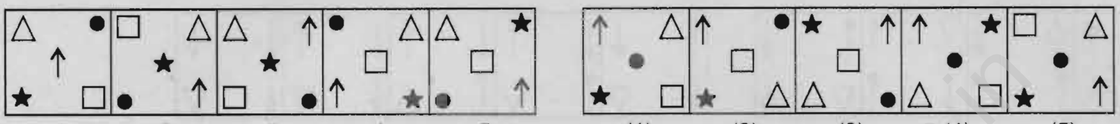

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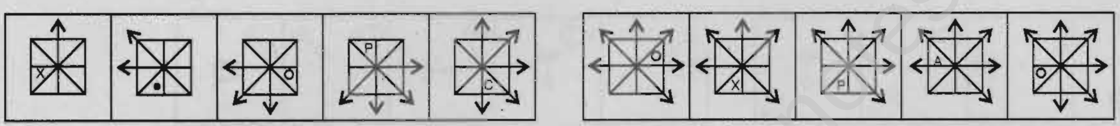

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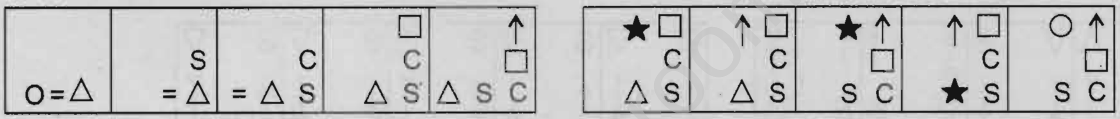

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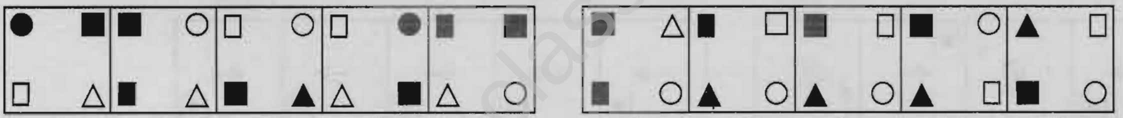

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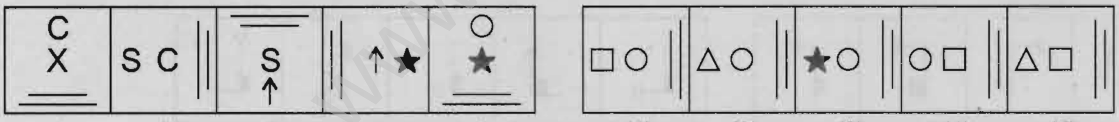

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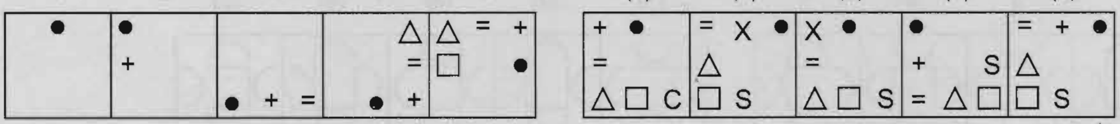

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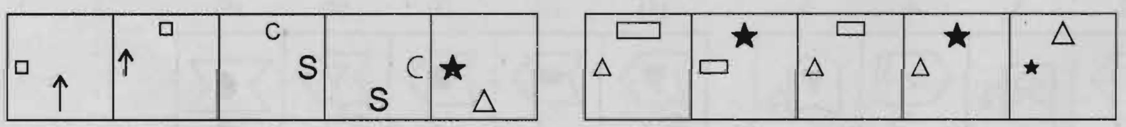

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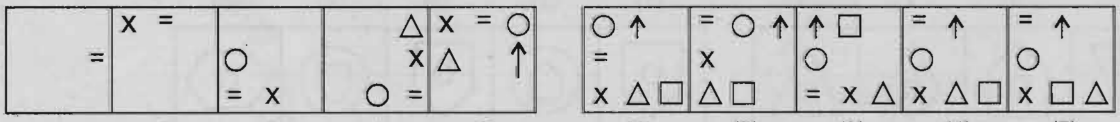

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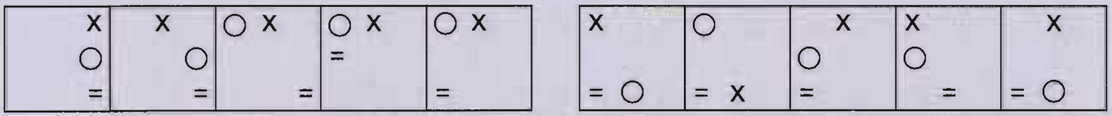

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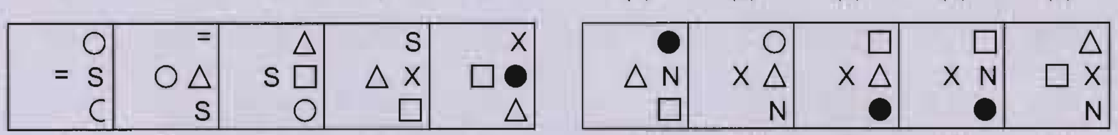

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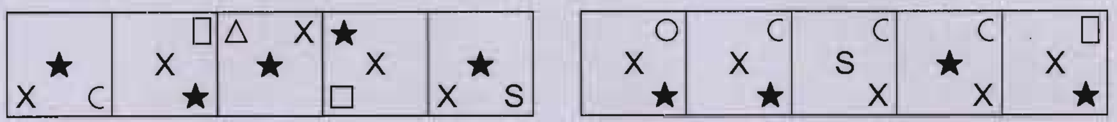
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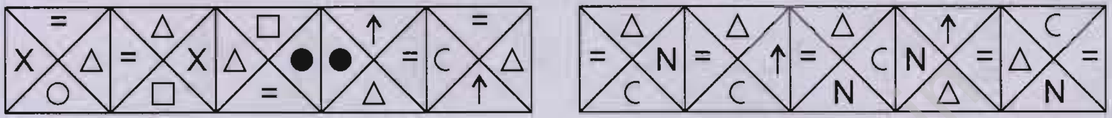
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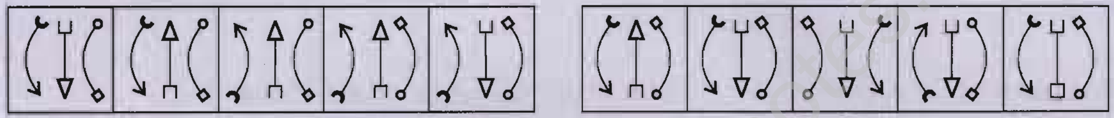
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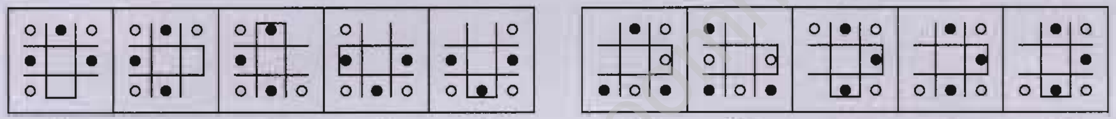
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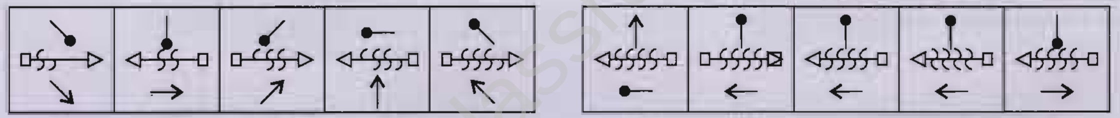
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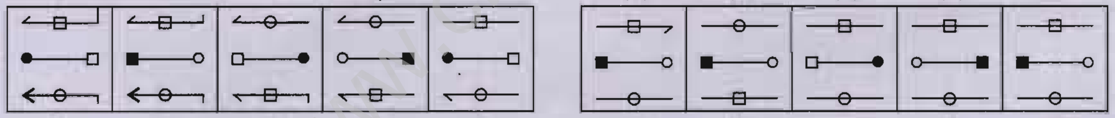
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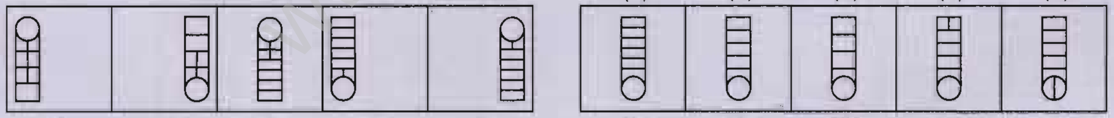
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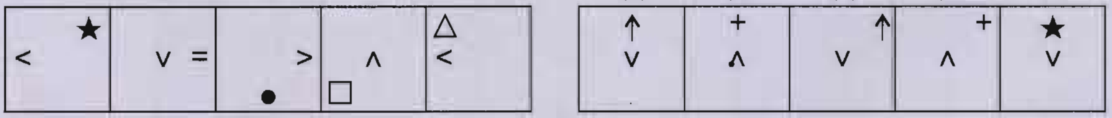
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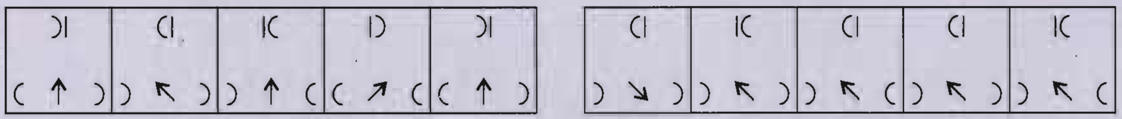
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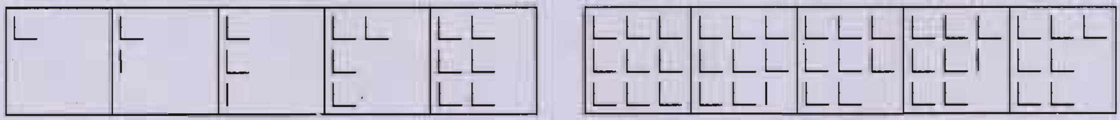
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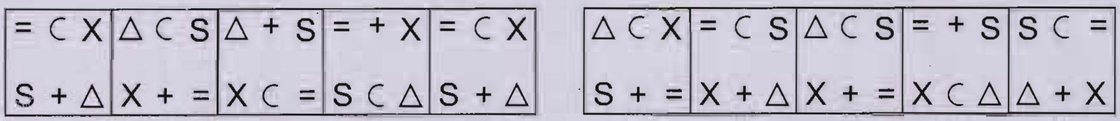

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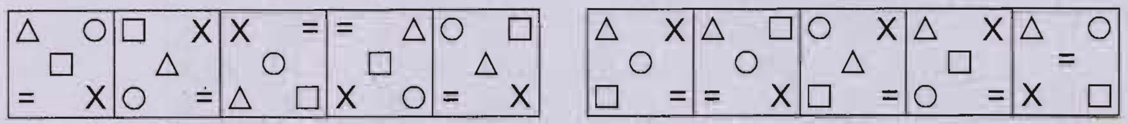

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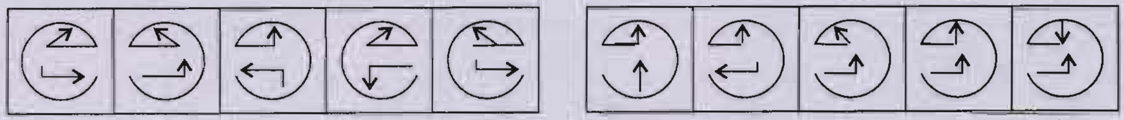

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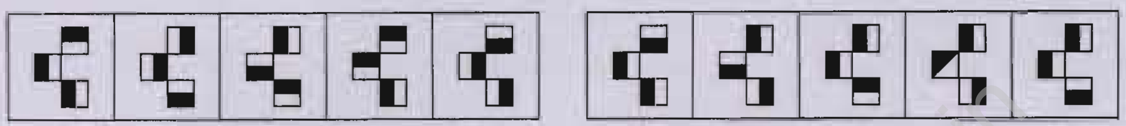

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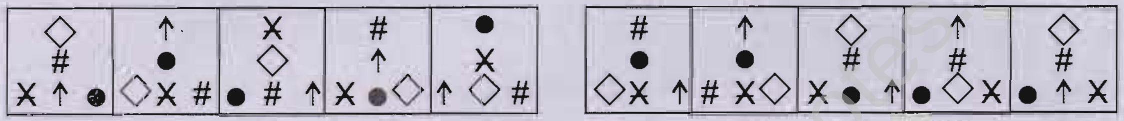

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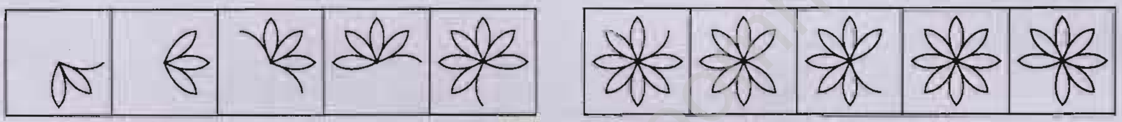

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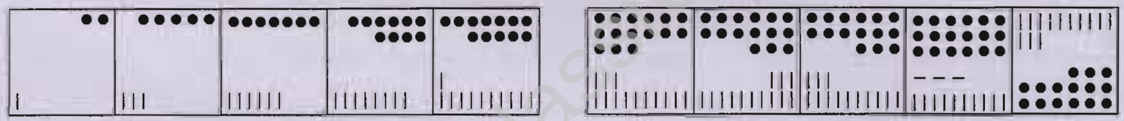

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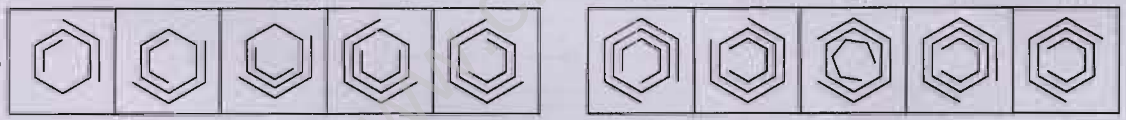

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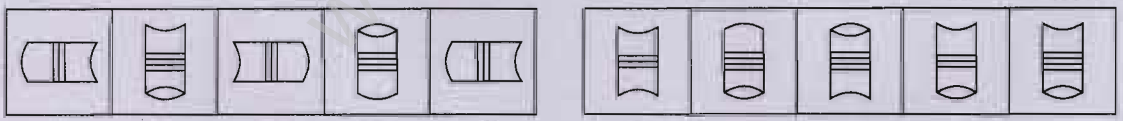

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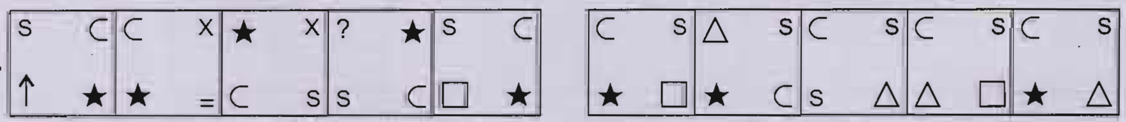

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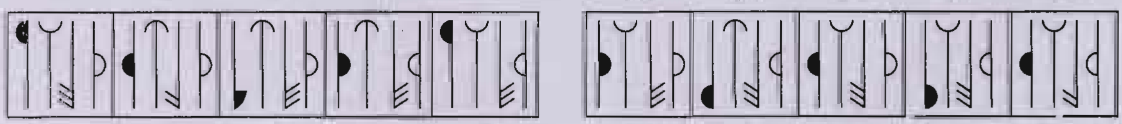

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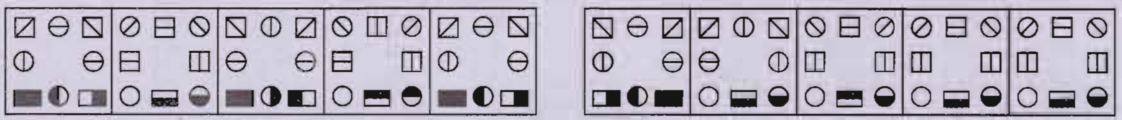
55. 

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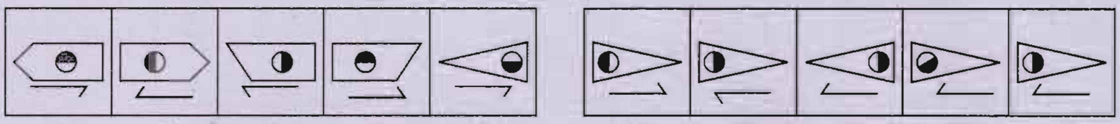
56. 

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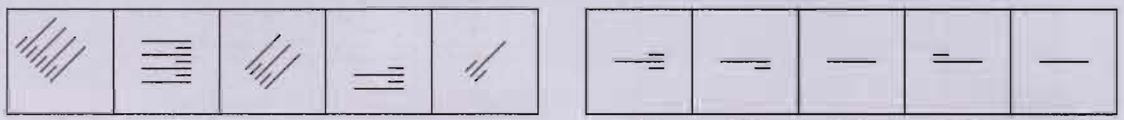
57. 

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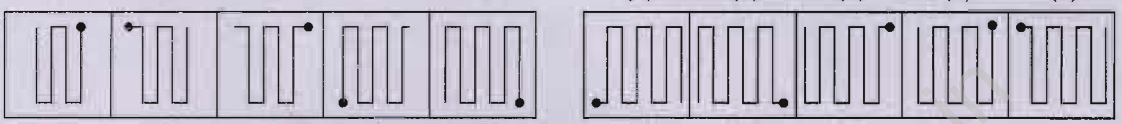
58. 

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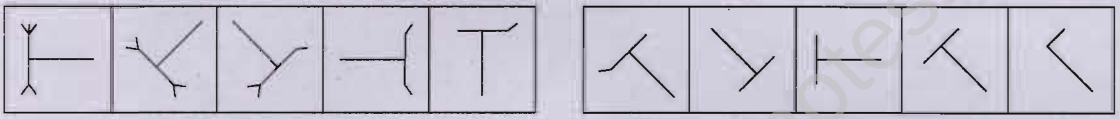
59. 

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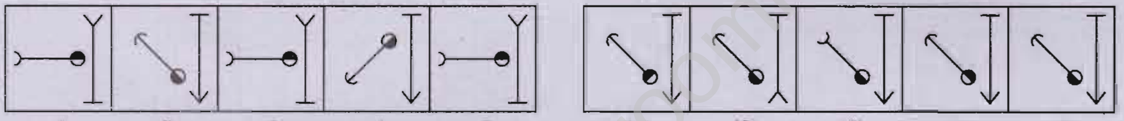
60. 

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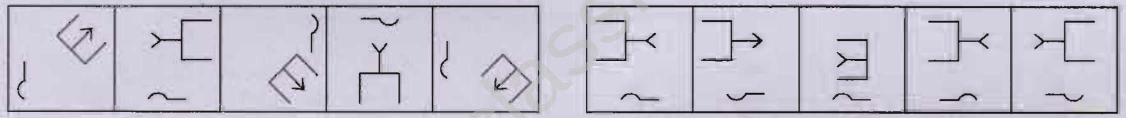
61. 

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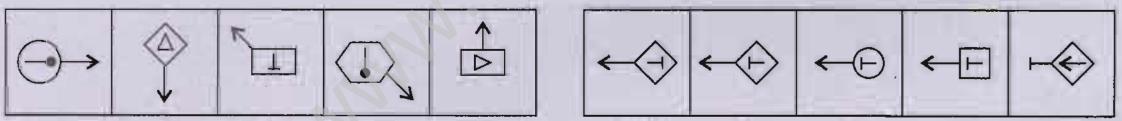
62. 

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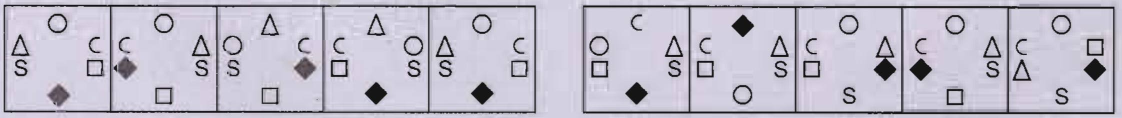
63. 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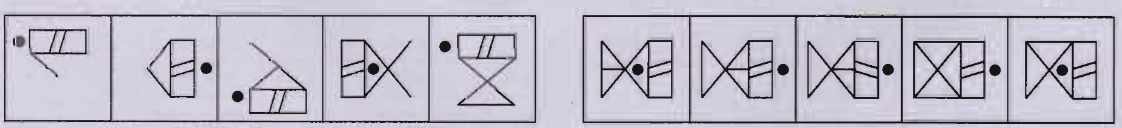
64. 

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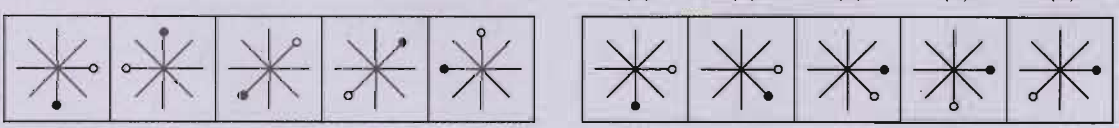
65. 

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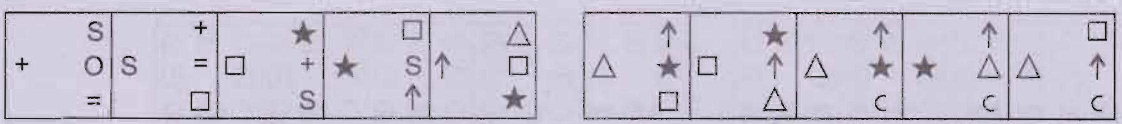

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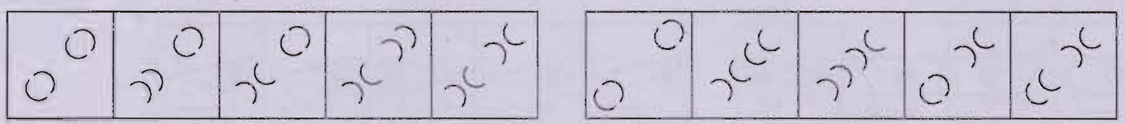

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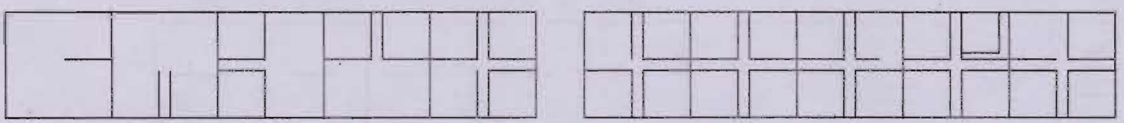

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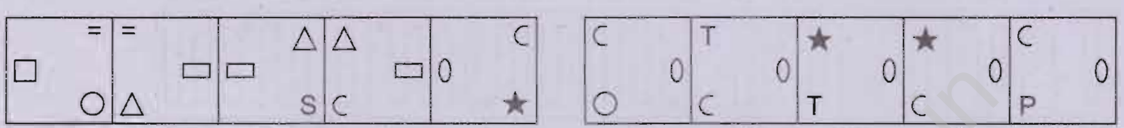

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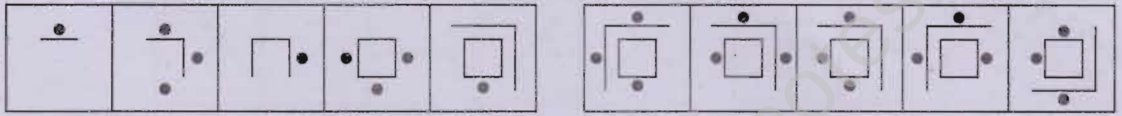

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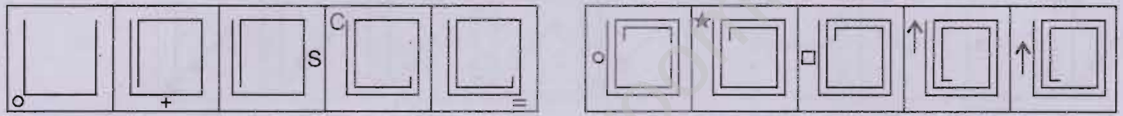

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72.

1 2 3 4 5 (1) (2) (3) (4) (5)

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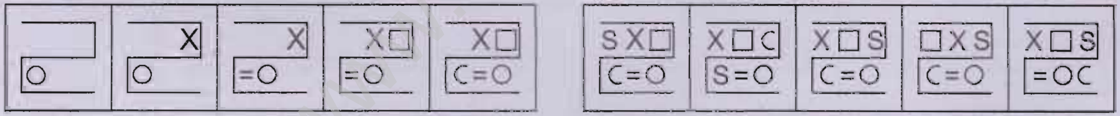

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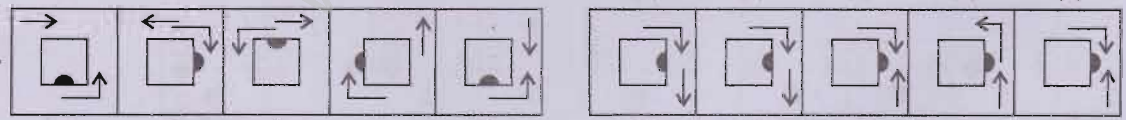

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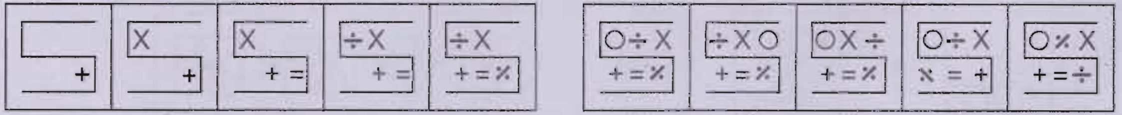

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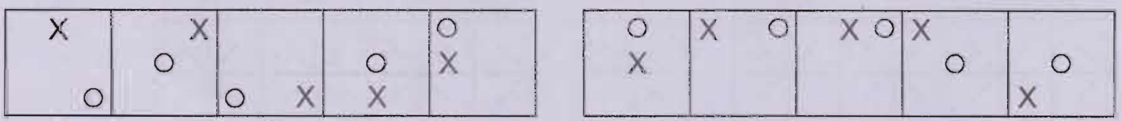

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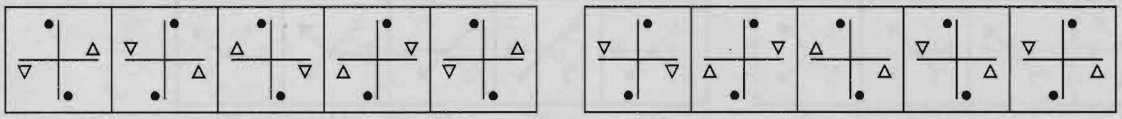
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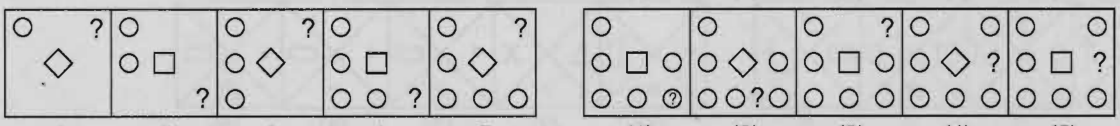
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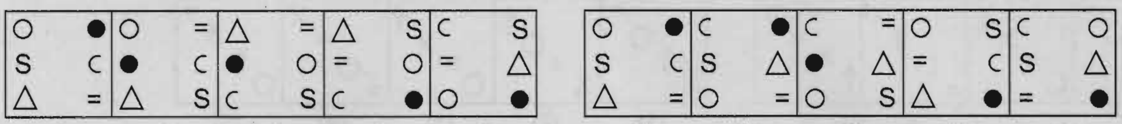
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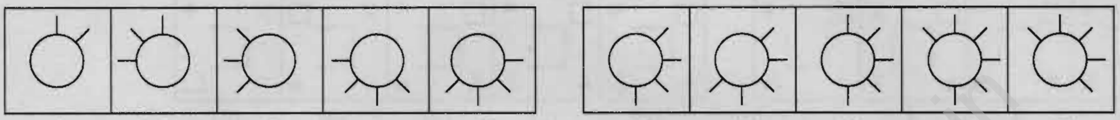
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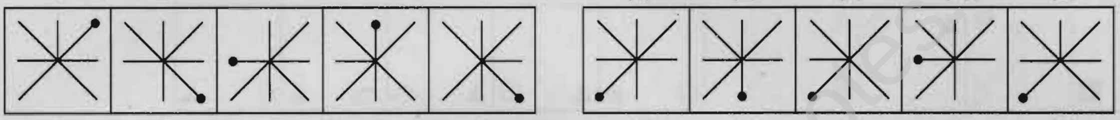
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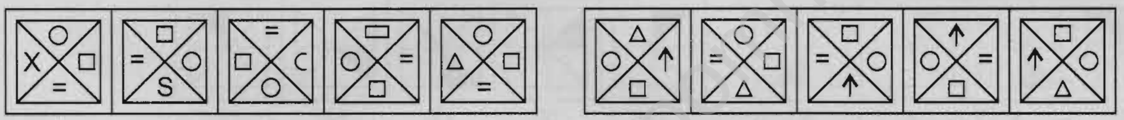
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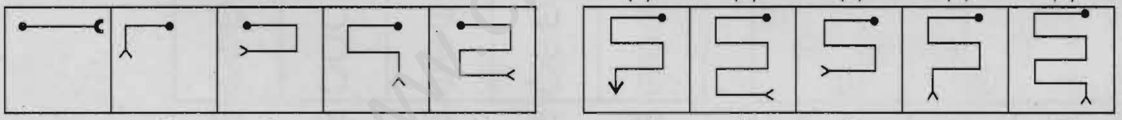
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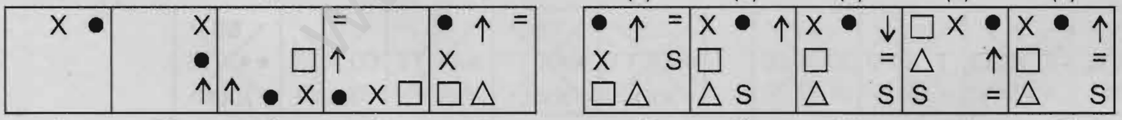
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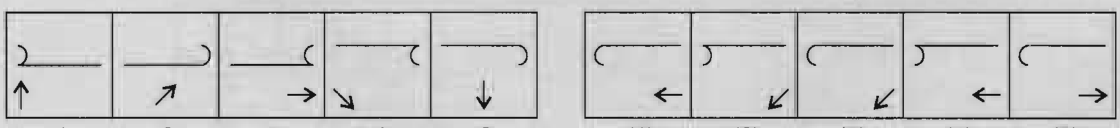
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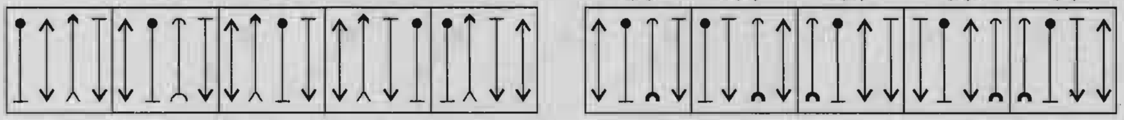
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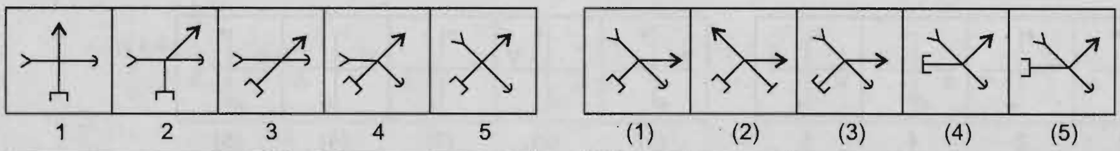

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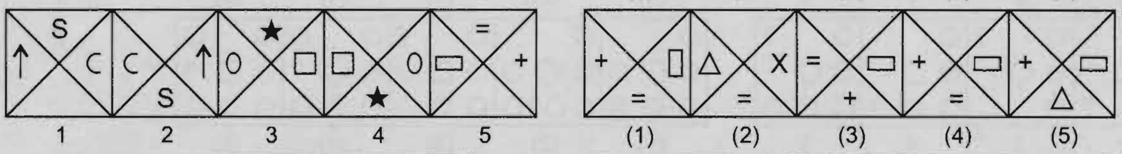

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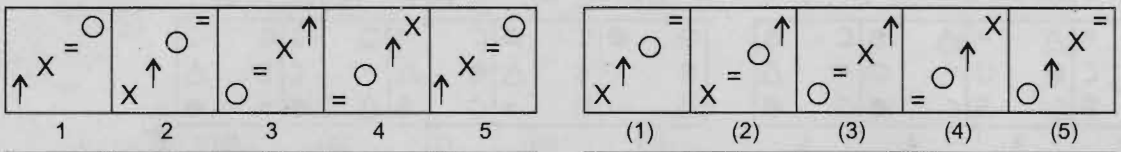

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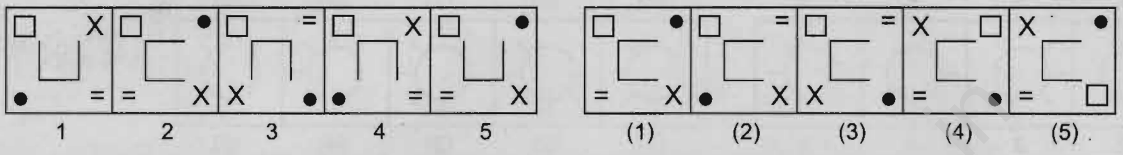

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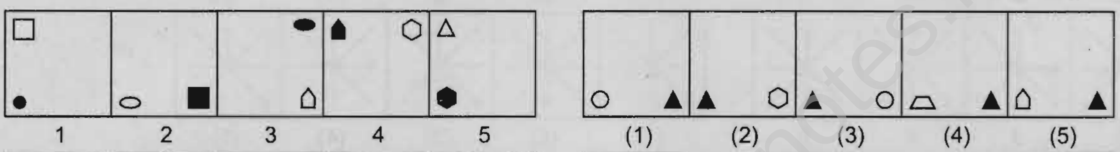

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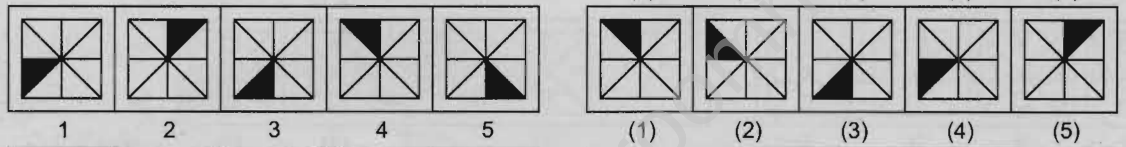

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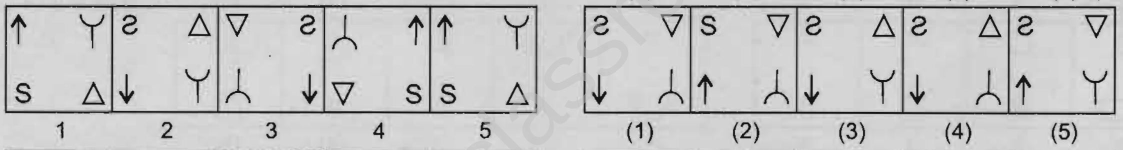

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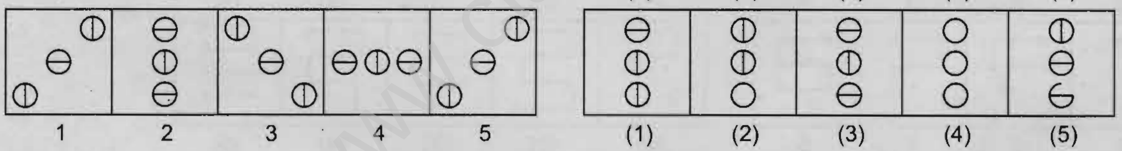

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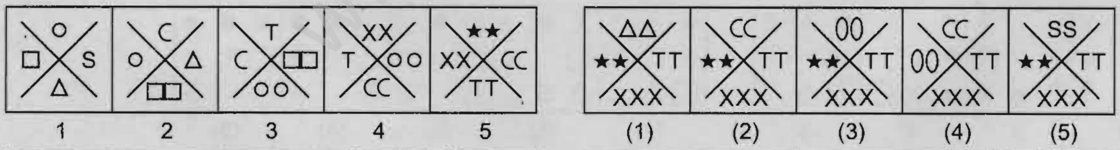

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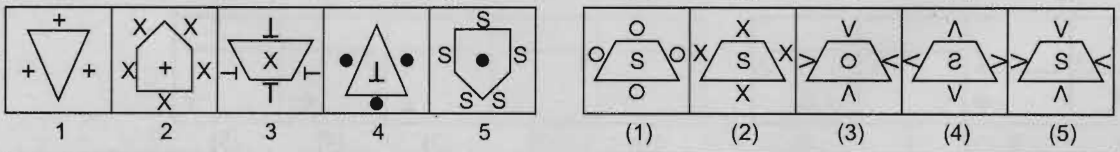

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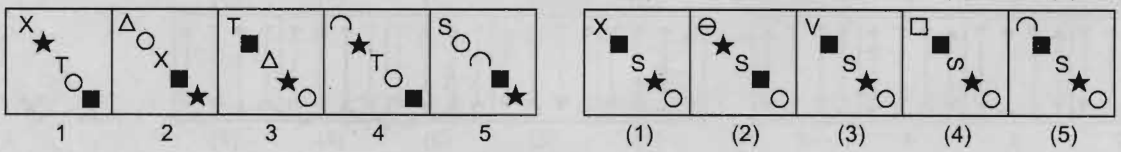

# उत्तरमाला

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| **11.** (3) | **12.** (3) | **13.** (5) | **14.** (5) | **15.** (3) | **16.** (1) | **17.** (1) | **18.** (2) | **19.** (3) | **20.** (3) |
| **21.** (2) | **22.** (3) | **23.** (2) | **24.** (1) | **25.** (4) | **26.** (3) | **27.** (3) | **28.** (2) | **29.** (5) | **30.** (4) |
| **31.** (1) | **32.** (5) | **33.** (4) | **34.** (1) | **35.** (3) | **36.** (2) | **37.** (4) | **38.** (3) | **39.** (3) | **40.** (1) |
| **41.** (1) | **42.** (4) | **43.** (2) | **44.** (3) | **45.** (1) | **46.** (4) | **47.** (3) | **48.** (5) | **49.** (2) | **50.** (3) |
| **51.** (4) | **52.** (5) | **53.** (5) | **54.** (5) | **55.** (4) | **56.** (5) | **57.** (5) | **58.** (1) | **59.** (4) | **60.** (5) |
| **61.** (1) | **62.** (2) | **63.** (4) | **64.** (2) | **65.** (4) | **66.** (3) | **67.** (5) | **68.** (2) | **69.** (5) | **70.** (3) |
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