## Similarities

Which picture on the right belongs to the group on the left? Circle the letter.

## Example



a

b

(C)

d

e

## Analogies

Which of the five pictures on the right goes with the third one to make a pair like the two on the left? Circle the letter.

## Example



## Matrices

Which picture on the right best fits into the space in the grid? Circle the letter.

## Example



C

d

e

## Hidden pictures

In which picture on the right is the picture on the left hidden? Circle the letter.

## Example



b

c

d

e

## Odd ones out

Which picture is the odd one out? Circle the letter.

## Example


a

b

c

d

(e)

## Reflected pictures

Which picture on the right is a reflection of the picture on the left? Circle the letter.

## Example


a

b

C

d

e

## Codes

What is the code of the final picture? Circle the letter.

## Example


RP

DP

DS

DR RS RP DS PS $a$ b $d$ e

## Combined pictures

Which picture on the right can be made by combining the first two pictures? Circle the letter.

## Example

$$
+\square=-\square
$$

a

b

c

d

e

## Nets of cubes

Which cube can be made exactly from the net? Circle the letter.
Example


a

b

c

d

e

Which net can be made exactly from the cube? Circle the letter.

## Example



a

b

c

(d)

e

## Series

Which picture on the right fits in the empty space? Circle the letter.
Example
$\uparrow \downarrow$

a


c

d

e
Q. 1-5 Similarities

Which picture on the right belongs to the group on the left? Circle the letter.


## Q. 6-10 Odd ones out

Which picture is the odd one out? Circle the letter.
6


7

a b c d e
${ }^{8} \leftrightarrow 1 H \leqslant 4>2$
$\begin{array}{llll}a & b & c & d\end{array} \quad$ e
9

a b
c
10

a b

b

c

d
e


## Q. 11-15 Hidden pictures

In which picture on the right is the picture on the left hidden? Circle the letter.

| 11 [ | - | T | 戓 | $E$ | $\dagger$ | 11 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | a | b | C | d | e |  |
| 12 |  | $\triangle$ | $\square$ |  | $\square$ |  |
|  | a | b | C | d | e | 12 |
| $13 \square$ | $\square$ | $\square$ | 8 |  | $\theta$ |  |
|  | a | b | C | d | e | 13 |
| 14 |  | $\nabla$ | $S$ |  | $\Delta$ |  |
|  | a | b | C | d | e | 14 |
| $15 \bigcirc \sim$ | $\bigcirc$ | ¢ ${ }_{\text {d }}$ | 0 | () | 8 |  |
|  | a | b | c | d | e | 15 |

## Q. 16-20 Analogies

Which of the five pictures on the right goes with the third one to make a pair like the two on the left? Circle the letter.

| 16 |  | is to | 1 | as | N | is to | $\nabla$ | $\square$ | $4$ | $\sqrt{*}$ | $N^{4}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | a | b | C | d | e | 16 |
| 17 |  | is to | $\bigcirc$ |  | $\square$ | is to | $\begin{aligned} & \mathrm{O}_{\bigcirc} \\ & 0 \end{aligned}$ | $\begin{aligned} & \mathrm{O}_{0}^{\mathrm{O}} \\ & \mathrm{O}_{\mathrm{O}} \end{aligned}$ | $\begin{aligned} & \mathrm{OO} \\ & 0 \mathrm{O} \\ & 00 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\mathrm{O}_{0}^{\mathrm{O}}$ |  |
|  |  |  |  |  |  |  | a | b | c | d | e | 17 |
| 18 | $X$ | is to | $\not \angle$ | as | $\nexists$ | is to | $x$ | $x$ | $\not x$ | $X$ | $\nVdash$ |  |
|  |  |  |  |  |  |  | a | b | c | d | e | 18 |

$\square$

Which of the five pictures on the right goes with the third one to make a pair like the two on the left? Circle the letter.

19

a

b


C


C

d
b

.

d
d

e

a
Q. 21-25 Matrices

Which picture on the right best fits into the space in the grid? Circle the letter.
21


22


23


24

$\square$

Which picture on the right best fits into the space in the grid? Circle the letter.
25


a

b

c

d

e

## Q. 26-30 Codes

What is the code of the final picture? Circle the letter.


BC


FB


HA
RT


PK


ZS


NK

PS

a b c d e

JG FK SG JC SK a b c d e


HE RD MA HD MT
a b c d e

## = <br> TS NM ZK ZM NS

a b c d e

30


GB


RD


SB


QW


GH


RB GD GW QD RW
$\square$
Q. 31-35 Combined pictures

Which picture on the right can be made by combining the first two pictures? Circle the letter.

| 31 | $\bigcirc$ | + | $\square$ | $=$ | 吅 | (0) | $\bigcirc 9$ | $\square$ | $\square$ | 31 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | a | b | c | d | e |  |
| 32 | $\square$ | + | $8$ | $=$ |  |  | $\square$ | \# | 4 |  |
|  |  |  |  |  | a | b | c | d | e | 32 |
| 33 | $\square$ | + | $\checkmark$ | $=$ | $\square$ |  | $\sqrt{\square}$ | 4 | - |  |
|  |  |  |  |  | a | b | c | d | e | 33 |
| 34 | (2) | + | $\Delta$ | $=$ |  |  | $\Delta$ | Soss |  |  |
|  |  |  |  |  | a | b | c | d | e | 34 |
| 35 | $\square$ | + | $N$ | $=$ | $B$ |  |  |  | $\square$ |  |
|  |  |  |  |  | a | b | c | d | e | 35 |

## Q. 36-40 Nets of cubes

Which net can be made exactly from the cube? Circle the letter.


MARK $\square$

Which cube can be made exactly from the net? Circle the letter.

| $38$ | $\begin{gathered} \triangle \\ \text { a } \end{gathered}$ | $\Delta$ <br> b | $\uparrow$ <br> C | d | $\sqrt{\pi}$ <br> e |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $39$ | a | b | C | d | $\begin{aligned} & \bigcirc \\ & \mathrm{e} \end{aligned}$ |
| $40$ |  | b | C | d | e |

Q. 41-45 Series

Which picture on the right fits in the empty space? Circle the letter.

$\square$
Q. 46-50 Reflected pictures

Which picture on the right is a reflection of the picture on the left? Circle the letter.


MARK $\square$
$\square$

| Sample Paper |  |  |
| :---: | :---: | :---: |
|  |  | Each picture contains an arrow turning in an anticlockwise direction. |
|  | c | Each is a rotation of the same picture. |
| 3 | b | Each picture contains a five-sided shape. |
| 4 | e | Each picture contains an arrow pointing down. |
| 5 | b | Each is a rotation of the same picture. |
| 6 | a | The others are all rotations of the same picture. |
| 7 | b | The others are all rotations of the same picture. |
| 8 | d | The others are all rotations of the same picture. |
| 9 | e | The others are all rotations of the same picture. |
| 10 | d | The others are all rotations of the same picture. |
| 11 | b | '' |
| 12 | a | $\nabla$ |
| 13 | a | $\square$ |
| 14 | b | $\nabla$ |
| 15 | c | (b) |
| 16 | c | reflection in the vertical mirror line |
| 17 | d | same number of circles as sides of shape |
| 18 | a | reflection in the vertical mirror line |
| 19 | b | reflection in the vertical mirror line |
| 20 | a | rotation $180^{\circ}$ |

## Sample Paper - continued

21 b rotating $90^{\circ}$ clockwise
a rotating $90^{\circ}$
anticlockwise
c reflected corners
e rotating $90^{\circ}$ clockwise
b reflected corners
a first letter - arrow direction second letter - number of sides
27 c first letter - colour of arc second letter - type of star
28 c first letter - colour of rectangle second letter - position of oval
29 d first letter - number of lines second letter - thickness of line
30 e first letter - fill pattern second letter - number of sides


36 e
37 e
38 a
39 c
If in doubt about the nets of cubes, copy them onto a piece of paper and fold them.

## Sample Paper - continued

41 b rotating $90^{\circ}$ clockwise
42 c colour lightens, number of sides increases by one
a alternating colour and number of sides
e lines rotate $45^{\circ}$ anticlockwise, number of sides increases by one
b four lines added to the previous pattern
b
a

d


