Chapter 6

Information Processing

Ex 6.1

Question 1.
A tetromino is a shape obtained by ...... squares together.

Solution:
4

Question 2.
Draw a tetromino which passes symmetry ....

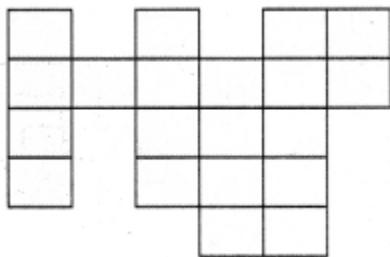**Solution:**

Question 3.
Complete the table.

Solution:

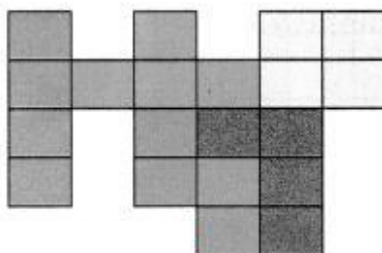| S.No.	Tetro Minoes	Rotation of Tetrominoes°			
		90°	180°	270°	360°
1					
2					
3					

Question 4.
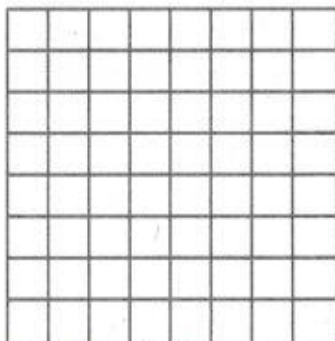Shade the figure completely, by using five tetrominoes shapes only once.

Solution:

Using the five tetrominoes , , , , and , we get the shaded figure as follows.
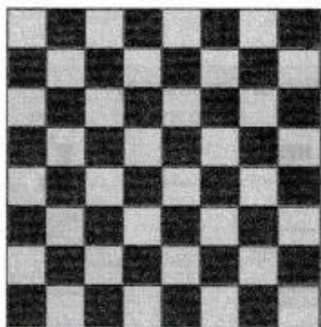

Question 5.

Using the given tetromino shaded in two different ways (   ), fill the grid in such a way that, no two adjacent boxes have the same colour.
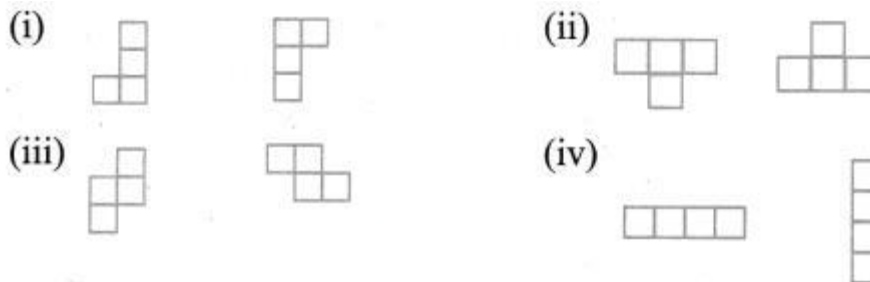

Solution:

More possible ways are the
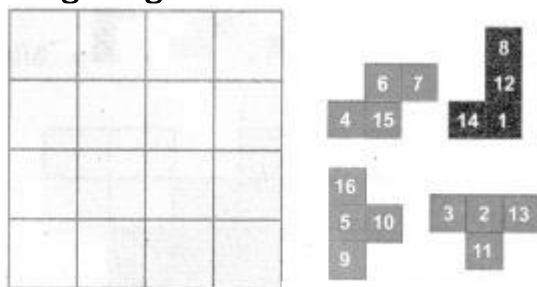
Question 6.
Match the tetrominoes of same type.

(i)

(ii)

(iii)

(iv)

Solution:

(i)

(ii)

(iii)

(iv)

Question 7.
Using the given tetrominoes with numbers, compute the 4 × 4 magic square.

Solution:

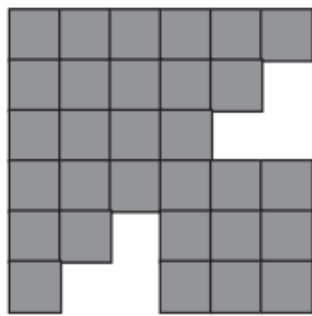| 16	3	2	13
5	10	11	8
9	6	7	12
4	15	14	1

(more possible ways are these)
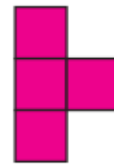
Ex 6.2

Miscellaneous Practice Problems

Question 1.
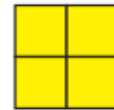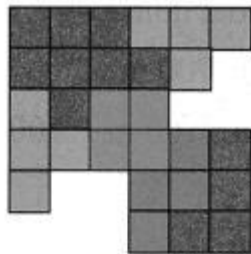Make a model of a fish using the given tetromino shapes
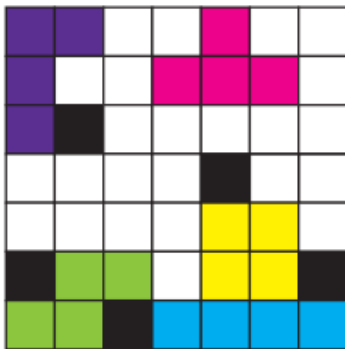

= 3 times
= 2 times
= 1 time
= 1 time

Complete the given rectangle using the given tetromino shapes.
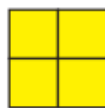
Solution:

Question 2.
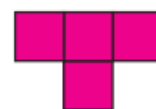Complete the given rectangle using the given tetromino shapes.
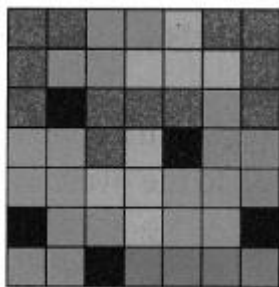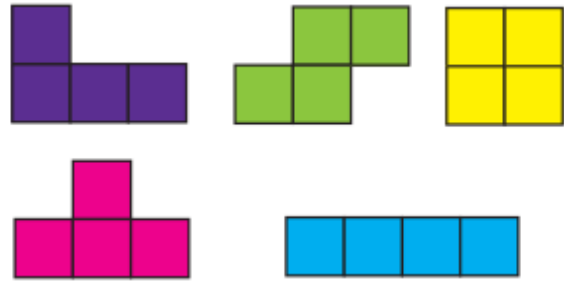

= 1 time
= 3 times
= 3 times
= 2 times
= 2 times

Solution:

Question 3.
Shade the figure completely, by using five Tetromino shapes only once.

Solution:

Question 4.

Using the given tetrominoes with numbers on it complete the 4 × 4 magic square?

Solution:

16	3	2	13
5	10	11	8
9	6	7	12
4	15	14	1

Question 5.

Find the shortest route to Vivekanandar Memorial Hall from the Mandapam using the given map.

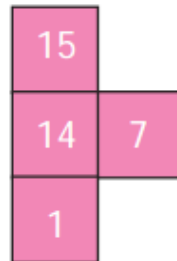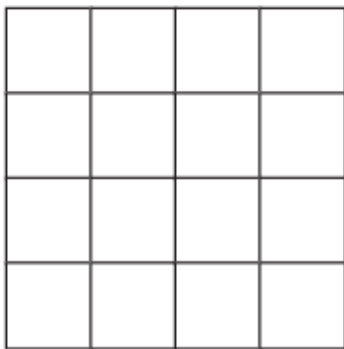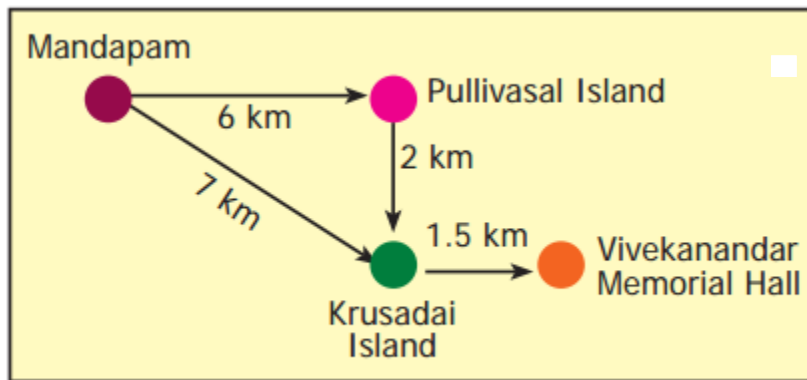**Solution:**
Possible routes from Mandapam to Vivekandar Memorial are

route 1:
(a) Mandapam → Pullivasal Island → Krusadai Island → Vivekanandar Memorial Hall.
Distance = 6 Km + 2 Km + 1.5 Km = 9.5 Km

route 2:
(b) Mandapam → Krusadai Island → Vivekanandar Memorial Hall.
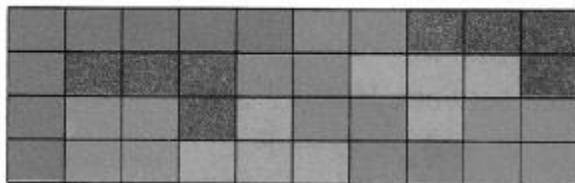Distance = 7 Km + 1.5 Km = 8.5 Km
8.5 km < 9.5 km
∴ Shortest route : Mandapam → Krusadai Island → Vivekanandar Memorial Hall.

Challenge Problems

Question 6.
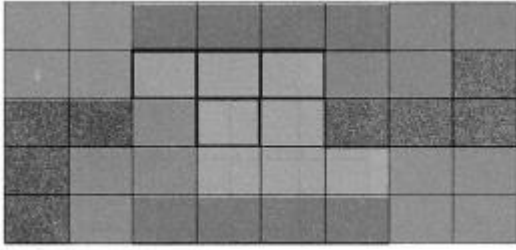Fill in 4 × 10 rectangle completely, using all the five tetrominoes twice.

Solution:

(more possible ways are there)

Question 7.
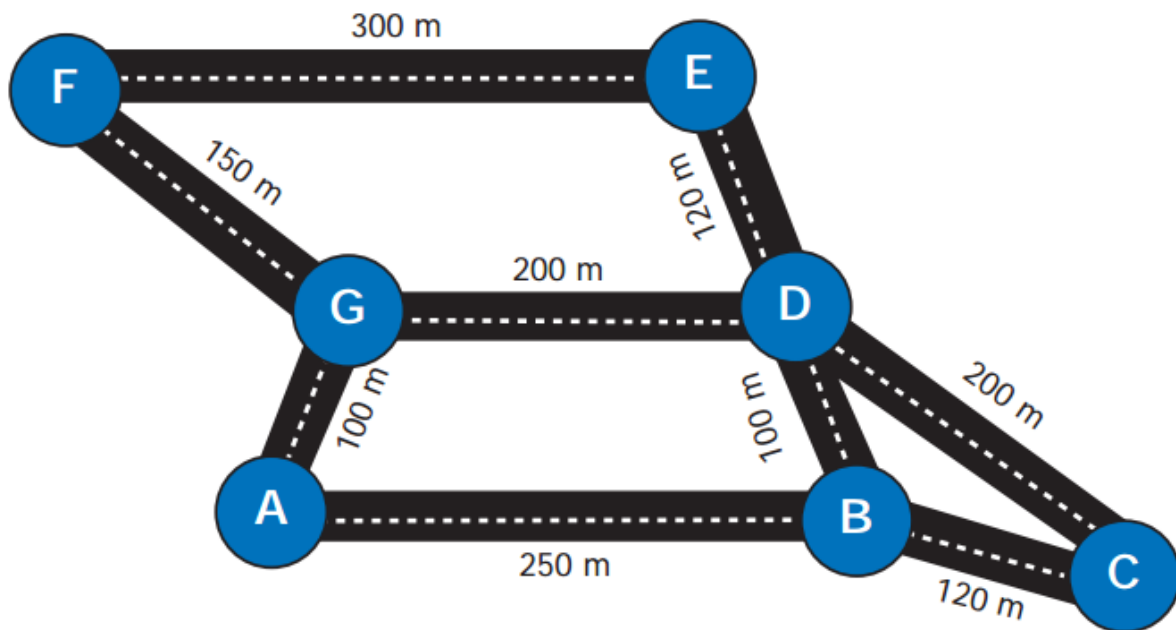Fill in 8 × 5 rectangle completely, using all the five tetrominoes twice.

Solution:

(more possible way are there)

Question 8.
Observe the picture and answer the following.
(i) Find all the possible routes from A to D.
(ii) Find the shortest distance between E and C.
(iii) Find all the possible routes between B and F with distance. Mention the shortest route.

Solution:
(i) All possible routes from A to D are :
(a) A → G → F → E → D
(b) A → G → D
(c) A → B → C → D
(d) A → B → D

(ii) Distance between E and C are
(a) Route 1: E → D → C
Distance: 120 m + 200 m = 320 m.
(b) Route 2: E → D → B → C
Distance = 120 + 100 m + 120 m

= 340 m.

∴ Shortest distance is 320 m.

(iii) All possible routes between B and F are :

(a) Route 1: B → A → G → F

Distance = 250 m + 100 m + 150 m = 600 m.

(b) Route 2: 2 → D → E → F

Distance = 100 m + 120 m + 300 m

= 520 m.

(c) Route 3: B → D → G → F

Distance = 100 m + 200 m + 150 m

= 450 m.

(d) Route 4: B → C → D → E → F

Distance = 120 m + 200 m + 120 m + 300 m

= 740 m.

We find that Route 3 is shortest.

ie B → D → G → F is the shortest route.