Cubes

Model-1

Directions (1 - 4): Read the following information carefully to answer the given questions. 125 small but identical cubes are put together to form a large cube. This large cube is now painted on all its faces.

1. How many small cubes have no face painted at all?

   1) 125   2) 25   3) 81   4) 27   5) None of these

2. How many small cubes have exactly one face painted?

   1) 36   2) 32   3) 54   4) 27   5) None of these

3. How many small cubes have exactly two faces painted?

   1) 24   2) 36   3) 8   4) 25   5) None of these

4. How many small cubes have exactly three faces painted?

   1) 16   2) 32   3) 24   4) 8   5) None of these

Directions (5 - 10): A cube is cut into 64 equal cubes. Now from each side of the original cube, 2nd and 3rd small cubes are removed. Now the whole thing is painted black

5. No of cubes which are not painted

   1) 64   2) 8   3) 26   4) 16   5) None of these

6. No of cubes which are painted 1 face?

   1) 2   2) 8   3) 0   4) 32   5) None of these

7. No of cubes which are painted 2 faces?

   1) 0   2) 48   3) 2   4) 1   5) None of these

8. No of cubes which are painted 3 faces?

   1) 36   2) 24   3) 16   4) 28   5) None of these

9. No of cubes which are painted in more than 3 faces

   1) 16   2) 32   3) 24   4) 8   5) None of these

10. What is the least number of cuts required to cut a cube into 24 identical pieces?

   1) 6   2) 8   3) 4   4) 12   5) None of these

Model-2

Directions (11 - 15): Study the information carefully and answer the questions below

There is a cube in which one pair of opposite faces is painted red, a second pair of opposite is painted blue and third pair of opposite faces green. This cube is now cut into 216 smaller but identical cubes.

11. How many small cubes are there to with no red paint at all?

    1) 36   2) 144   3) 216   4) 72   5) None of these

12. How many small cubes are there without any face painted?

    1) 16   2) 32   3) 64   4) 125   5) 81

13. How many small cubes are there with at least two different colours on their faces?

    1) 56   2) 160   3) 72   4) 64   5) None of these

14. How many small cubes are there with only one red and green on their faces?

    1) 16   2) 32   3) 24   4) 8   5) None of these

15. How many small cubes show only green or only blue on their faces?

    1) 16   2) 32   3) 24   4) 64   5) None of these

Directions (16 -19): Study the information carefully and answer the questions below

I. The length, breadth and height of a rectangular piece of wood are 15cm, 13cm and 14cm respectively.

II. Two adjacent sides of 14cm × 13cm and 13cm × 15cm are colored in red

III. Two adjacent sides of 14cm × 13cm and 13cm × 15cm are colored in blue

IV. Opposite sides of 14cm × 15cm are colored in yellow

V. Now the piece will be cut in such a way that maximum number of cubes of 1cm × 1cm × 1cm will be more

16. How many cubes shall have all three colors?

    1) 4   2) 8   3) 12   4) 16   5) None

17. How many cubes shall have only one color?

    1) 862   2) 884   3) 873   4) 888   5) None

18. Which of the following statements is not true?

    1) There will be eleven such cubes which have only two surfaces coloured and in which both of them are coloured red.

2) There will be eleven such cubes which have only two surfaces coloured and in which both of them are coloured blue.

3) There will be eleven such cubes which have only two surfaces coloured and in which both of them are coloured yellow.

4) There will be twenty-two such cubes which have only two surfaces coloured and in which one is red and the other is blue.

5) There will be fifty such cubes which have only two surfaces coloured and in which one is red and the other is yellow.

19. Which of the following statements is/are true?

I. There will be fifty such cubes which have only two surfaces coloured and in which one is blue and the other is yellow.

II. Four hundred and twenty cubes consist of yellow colour.

III. Three hundred and sixty-four cubes consist of blue colour.

IV. Three hundred and sixty-four cubes consist of red colour.

    1) All I, II, III & IV   2) Only I, II and III   3) Only II, III and IV

    4) Only I and III   5) None of these

20. A cube, painted yellow on all faces is cut into 27 small cubes of equal size. How many small cubes are painted on one face only?

    1) 1   2) 6   3) 8   4) 12   5) None of these

Answers

1 – 4	2 – 3	3 – 1	4 - 4	5 – 2	6 – 3	7 – 1	8 – 2	9 – 1	10 - 1
11 – 2	12 - 3	13 - 1	14 - 1	15 - 4	16 - 1	17 - 2	18 - 3	19 - 5	20 -2