Session-8 (Cubes)

Q (1-5) 27 smaller but identical cubes have been put together to form a larger cube. This larger cube is now painted on all 6 faces.

1. How many of the smaller cubes have exactly one face painted?
   a. 4 b. 5 c. 6 d. 7
2. How many of the smaller cubes have exactly two faces painted?
   a. 10 b. 12 c. 14 d. 16
3. How many of the smaller cubes have no face painted at all?
   a. 4 b. 3 c. 2 d. 1
4. How many of the smaller cubes have at least two faces painted?
   a. 20 b. 12 c. 21 d. 19
5. How many of the smaller cubes have at most two faces painted?
   a. 20 b. 12 c. 21 d. 19

Q (6-9). A pair of opposite faces of a cube is painted yellow another pair of opposite faces orange and the remaining faces white. The cube is then cut in to 125 smaller but identical cubes.

6. How many of the smaller cubes have exactly one colour on them?
   a. 54 b. 52 c. 58 d. 56
7. How many of the smaller cubes have only white colour on them?
   a. 26 b. 22 c. 28 d. 18
8. How many of the smaller cubes have exactly two colours on them?
   a. 36 b. 32 c. 38 d. 32
9. How many of the smaller cubes have only white and orange on them?
   a. 12 b. 14 c. 18 d. 16

Q (10-13). A pair of opposite faces of a cube is painted yellow another pair of opposite faces orange and the remaining faces white. The cube is then cut in to 125 smaller but identical cubes.

10. How many of the smaller cubes have all the three colours on them?
    a. 6 b. 8 c. 10 d. 12
11. How many of the smaller cubes have no colour on them?
    a. 16 b. 29 c. 28 d. 27
12. How many of the smaller cubes have at least two colours on them?
    a. 46 b. 44 c. 40 d. 42
13. How many of the smaller cubes have at most two coloured faces on them?
    a. 119 b. 129 c. 117 d. 127

Q (14-18). A cube is cut in two equal parts along a plane parallel to one of its faces. One piece is then coloured red on the two larger faces and green on the remaining, while the other is coloured green on two smaller adjacent faces and red on the remaining. Each is then cut into 32 cubes of same size and mixed up.

14. How many cubes have only one coloured face each?
    a. 32 b. 8 c. 16 d. 0

15. What is the number of cubes with at least one green face each?
    a. 36 b. 32 c. 38 d. 48
16. How many cubes have two red and one green face on each?
    a. 0 b. 8 c. 16 d. 4
17. How many cubes have no coloured face at all?
    a. 32 b. 8 c. 16 d. None
18. How many cubes have each one red and another green?
    a. 0 b. 8 c. 16 d. 24