1.4 PROCEDURE TO DRAW FIXTURES: KNOCK-OUT (BYE AND SEEDING) AND LEAGUE (CYCLIC AND STAIRCASE)

Essential Points for a Knock-out Tournament

To prepare the fixtures for a knock-out tournament is a significant step. The following points must be taken into consideration while preparing fixtures.

1. The total number of teams participating in the tournament.
2. The total number of byes.
3. The number of teams in each half or quarter.
4. The number of byes to be given in each half or quarter.
5. The total number of rounds.
6. The total number of matches.

Method of Preparing Fixture in a Knock-out Tournament

In a knock-out tournament, the total number of matches can be calculated by subtracting one from the total number of teams. For example, if 8 teams are participating in the tournament, then the number of total matches will be, 8 –1 = 7. It means that there will be only 7 matches in the tournament. These teams, i.e., 8 teams should be divided into two halves. It is possible only if the total number of teams is the power of 2 such as 2, 4, 8, 16, 32 and 64, etc. It is very easy to draw the fixtures in such a case. The total number of teams is divided into equal halves and then matches are decided by draw of lots. If the total number of teams is not the power of 2 such as 3, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, etc., then byes are given. The teams, which are given byes, do not play in the first round. Byes are given in the first round because of which the number of teams playing in the later rounds is reduced to a power of 2. In fact, a bye refers to a dummy team that does not play in the first round but participates in the second round. The number of byes in a fixture is the actual difference between the number of teams participating in the tournament and the next highest number which is the power of 2.

Example 1: How many byes will be given if 15 teams are participating in a tournament?

Solution: Total number of teams = 15

Next highest number of power of two = 16

Difference between the total number of teams and the next highest ~
in power of 2 = 16–15 =1

Hence, 1 bye will be given.

Example 2: How many byes will be given if 19 teams are participating in ḥe upper half

Solution: Total number of teams = 19

Next highest number, which is in power of 2 = 32

Difference = 32–19 = 13

Hence, 13 byes will be given.

Method of Calculating Teams in Each Half

If the number of teams is in the power of 2, it becomes easy to divide thḷ III) will have 1 halves. But if the number of teams is not in the power of 2, the following pḷ following table.

$$\text{Upper Half} = \frac{\text{Total number of teams} + 1}{2}$$

It means $\frac{N+1}{2}$, where 'N' is the total number of teams.

$$\text{Lower Half} = \frac{\text{Total number of tearms} - 1}{2}$$

It means $\frac{N-1}{2}$, where 'N' is the total number of teams.

Example 1: How many teams will be kept in the upper half and the lower half if 11 teams are participating in a tournament?

Solution: Total number of teams = 11

$$\text{Teams in the upper half} = \frac{N+1}{2} = \frac{11+1}{2} = \frac{12}{2} = 6 \text{ teams}$$

$$\text{Teams in the lower half} = \frac{N-1}{2} = \frac{11-1}{2} = \frac{10}{2} = 5 \text{ teams}$$

Example 2: How many byes will be given in total in the upper half and the lower half if the total number of teams is 11?

Solution: Total number of teams = 11

Next highest power of 2 = 16

Difference = 16 − 11 = 5 Byes

$$\text{Number of byes in the upper half} = \frac{NB-1}{2} = \frac{5-1}{2} = \frac{4}{2} = 2 \text{ byes}$$

[NB stands for the total number of byes]

$$\text{Number of byes in the lower half} = \frac{NB+1}{2} = \frac{5+1}{2} = \frac{6}{2} = 3 \text{ byes}$$

Method of Fixing Byes

·al number of teams (in case of 11 teams) from 1 to 11 is written on a plain paper. ·s are drawn and the names of teams are written against their numbers. Then ·er of teams is divided into two halves. After that the byes are fixed in the ·r halves in the following order.
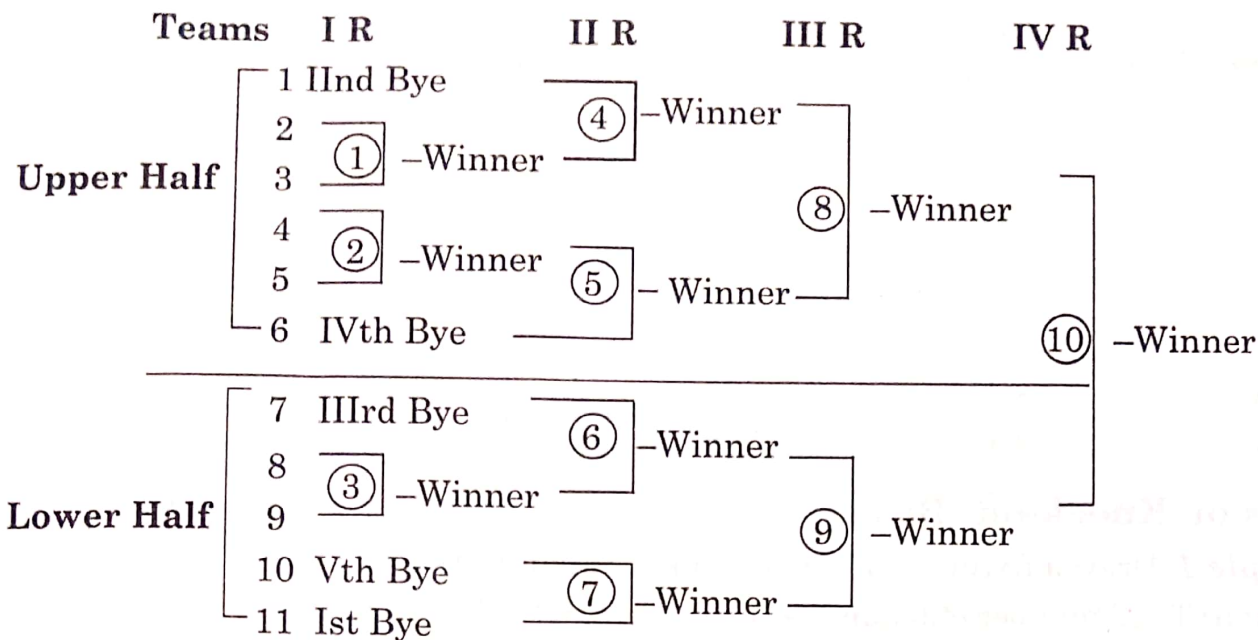
bye is given to the last team of the lower half.

Example: In nd bye is given to the first team of the upper half.

bye is given to the first team of the lower half.

bye is given to the last team of the upper half.

·e or byes will be given in the same order as described above.

·r of teams is 11, the following method is applied to fix the byes.

Teams	I R	II R	III R	IV R

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Teams      I R              II R           III R          IV R

        ┌ 1  IInd Bye
          2                  ④ –Winner ┐
Upper     3  ① –Winner ┘               │
Half      4                             ⑧ –Winner ┐
          5  ② –Winner ┐                           │
        └ 6  IVth Bye     ⑤ – Winner ┘              │
                                                    ⑩ –Winner
        ┌ 7  IIIrd Bye                              │
          8                ⑥ –Winner ┐              │
Lower     9  ③ –Winner ┘              │             │
Half     10  Vth Bye                  ⑨ –Winner ┘
        └ 11 Ist Bye       ⑦ –Winner ┘
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Number of Matches in a Knock-out Tournament

The number of matches in knock-out tournament is (N–1), where 'N' denotes the number of teams participating in a tournament. For example, if 11 teams are participating in a knock-out tournament, the number of matches will be as follows.

$$N - 1 = 11 - 1 = 10 \text{ matches}$$

Number of Rounds in a Knock-out Tournament

If the number of participating teams in the power of 2, (in case of 16 teams), the number of rounds will be $2 \times 2 \times 2 \times 2 = 4$ rounds.

If the number of participating teams is not in the power of 2, the number of rounds will be based on the next highest power of 2. Suppose, there are 10 teams, the next highest power of 2 is 16. The number of rounds will be $2 \times 2 \times 2 \times 2 = 4$ rounds. If the number of teams is 19, the number of rounds will be $2 \times 2 \times 2 \times 2 \times 2 = 5$ rounds, because the next highest power of 2 is 32.

Number of Teams in Each Quarter

If the number of teams is less, the teams are divided into upper half and lower half only. On the other hand, if the number of teams is more, teams are divided into upper and lower halves and these halves are further divided into two parts. It means that the upper half has two quarters, i.e., I quarter and II quarter and the lower half has III quarter and IV quarter. For determining the number of teams in each quarter, the total number of teams is divided by 4. If the remainder remains zero, there will be 4 quarters with equal number of teams. If the remainder remains 1, the first quarter will comprise 1 extra team, whereas, the remaining quarters will have equal number of teams. If the remainder remains 2, then each quarter (I and III) will have 1 extra team and the II and IV quarters will comprise the same number of teams. If the remainder remains 3, each quarter (I, II and III) will have 1 extra team. This procedure can be easily understood with the help of the following table.