

## EduSahara™ Learning Center Assignment

**Grade : Class X, ICSE**

**Chapter : Graphical Representation of Statistical Data**

**Name : Cumulative Frequency Distribution**

Construct a frequency distribution table from the following cumulative frequency distribution

1.

| Class-Interval | Cumulative Frequency |
|----------------|----------------------|
| 38 - 45        | 13                   |
| 46 - 53        | 24                   |
| 54 - 61        | 39                   |
| 62 - 69        | 51                   |
| 70 - 77        | 62                   |
| 78 - 85        | 68                   |
| 86 - 93        | 78                   |

(i)

| Class-Interval | 38 - 45 | 46 - 53 | 54 - 61 | 62 - 69 | 70 - 77 | 78 - 85 | 86 - 93 |
|----------------|---------|---------|---------|---------|---------|---------|---------|
| Frequency      | 13      | 11      | 15      | 9       | 11      | 6       | 10      |

(ii)

| Class-Interval | 38 - 45 | 46 - 53 | 54 - 61 | 62 - 69 | 70 - 77 | 78 - 85 | 86 - 93 |
|----------------|---------|---------|---------|---------|---------|---------|---------|
| Frequency      | 13      | 15      | 11      | 12      | 11      | 6       | 10      |

(iii)

| Class-Interval | 38 - 45 | 46 - 53 | 54 - 61 | 62 - 69 | 70 - 77 | 78 - 85 | 86 - 93 |
|----------------|---------|---------|---------|---------|---------|---------|---------|
| Frequency      | 13      | 11      | 15      | 12      | 11      | 6       | 10      |

(iv)

| Class-Interval | 38 - 45 | 46 - 53 | 54 - 61 | 62 - 69 | 70 - 77 | 78 - 85 | 86 - 93 |
|----------------|---------|---------|---------|---------|---------|---------|---------|
| Frequency      | 13      | 11      | 11      | 12      | 11      | 6       | 10      |

(v)

| Class-Interval | 38 - 45 | 46 - 53 | 54 - 61 | 62 - 69 | 70 - 77 | 78 - 85 | 86 - 93 |
|----------------|---------|---------|---------|---------|---------|---------|---------|
| Frequency      | 13      | 10      | 15      | 12      | 11      | 6       | 11      |

Construct a frequency distribution table from the following cumulative frequency distribution

2.

| Class-Interval | Cumulative Frequency |
|----------------|----------------------|
| 11 - 20        | 13                   |
| 20 - 29        | 25                   |
| 29 - 38        | 40                   |
| 38 - 47        | 54                   |
| 47 - 56        | 69                   |

(i)

| Class-Interval | 11 - 20 | 20 - 29 | 29 - 38 | 38 - 47 | 47 - 56 |
|----------------|---------|---------|---------|---------|---------|
| Frequency      | 13      | 12      | 12      | 14      | 15      |

(ii)

| Class-Interval | 11 - 20 | 20 - 29 | 29 - 38 | 38 - 47 | 47 - 56 |
|----------------|---------|---------|---------|---------|---------|
| Frequency      | 13      | 16      | 15      | 14      | 15      |

(iii)

| Class-Interval | 11 - 20 | 20 - 29 | 29 - 38 | 38 - 47 | 47 - 56 |
|----------------|---------|---------|---------|---------|---------|
|                |         |         |         |         |         |

|                  |    |    |    |    |    |
|------------------|----|----|----|----|----|
| <b>Frequency</b> | 13 | 15 | 15 | 14 | 12 |
|------------------|----|----|----|----|----|

(iv)

|                       |         |         |         |         |         |
|-----------------------|---------|---------|---------|---------|---------|
| <b>Class-Interval</b> | 11 - 20 | 20 - 29 | 29 - 38 | 38 - 47 | 47 - 56 |
| <b>Frequency</b>      | 13      | 12      | 15      | 14      | 15      |

(v)

|                       |         |         |         |         |         |
|-----------------------|---------|---------|---------|---------|---------|
| <b>Class-Interval</b> | 11 - 20 | 20 - 29 | 29 - 38 | 38 - 47 | 47 - 56 |
| <b>Frequency</b>      | 13      | 15      | 12      | 14      | 15      |

Following are the ages (in years) of patients getting medical treatment in a hospital. Identify the cumulative frequency of the given grouped data.

3.

|                        |         |         |         |         |         |
|------------------------|---------|---------|---------|---------|---------|
| <b>Age (in years)</b>  | 10 - 20 | 21 - 31 | 32 - 42 | 43 - 53 | 54 - 64 |
| <b>No. of Patients</b> | 66      | 86      | 15      | 84      | 21      |

(i)

|                       |                             |
|-----------------------|-----------------------------|
| <b>Age (in years)</b> | <b>Cumulative Frequency</b> |
| 10 - 20               | 66                          |
| 21 - 31               | 152                         |
| 32 - 42               | 167                         |
| 43 - 53               | 251                         |
| 54 - 64               | 272                         |

(ii)

|                       |                             |
|-----------------------|-----------------------------|
| <b>Age (in years)</b> | <b>Cumulative Frequency</b> |
| 10 - 20               | 66                          |
| 21 - 31               | 152                         |
| 32 - 42               | 167                         |
| 43 - 53               | 251                         |
| 54 - 64               | 272                         |

(iii)

|                       |                             |
|-----------------------|-----------------------------|
| <b>Age (in years)</b> | <b>Cumulative Frequency</b> |
| 10 - 20               | 66                          |
| 21 - 31               | 152                         |
| 32 - 42               | 172                         |
| 43 - 53               | 256                         |
| 54 - 64               | 277                         |

(iv)

|                       |                             |
|-----------------------|-----------------------------|
| <b>Age (in years)</b> | <b>Cumulative Frequency</b> |
| 10 - 20               | 66                          |
| 21 - 31               | 87                          |
| 32 - 42               | 102                         |
| 43 - 53               | 186                         |
| 54 - 64               | 272                         |

(v)

|                       |                             |
|-----------------------|-----------------------------|
| <b>Age (in years)</b> | <b>Cumulative Frequency</b> |
| 10 - 20               | 66                          |
| 21 - 31               | 81                          |
| 32 - 42               | 167                         |
| 43 - 53               | 251                         |
| 54 - 64               | 272                         |

Following are the ages (in years) of patients getting medical treatment in a hospital. Identify the cumulative frequency of the given grouped data.

4.

|                        |         |         |         |         |         |         |
|------------------------|---------|---------|---------|---------|---------|---------|
| <b>Age (in years)</b>  | 20 - 25 | 25 - 30 | 30 - 35 | 35 - 40 | 40 - 45 | 45 - 50 |
| <b>No. of Patients</b> | 48      | 64      | 64      | 55      | 66      | 67      |

(i)

|                       |                             |
|-----------------------|-----------------------------|
| <b>Age (in years)</b> | <b>Cumulative Frequency</b> |
| 20 - 25               | 48                          |
| 25 - 30               | 112                         |
| 30 - 35               | 176                         |
| 35 - 40               | 228                         |
| 40 - 45               | 294                         |
| 45 - 50               | 361                         |

(ii)

|                       |                             |
|-----------------------|-----------------------------|
| <b>Age (in years)</b> | <b>Cumulative Frequency</b> |
| 20 - 25               | 48                          |
| 25 - 30               | 112                         |
| 30 - 35               | 176                         |
| 35 - 40               | 231                         |
| 40 - 45               | 297                         |
| 45 - 50               | 364                         |

|       |                       |                             |      |                       |                             |
|-------|-----------------------|-----------------------------|------|-----------------------|-----------------------------|
| (iii) | <b>Age (in years)</b> | <b>Cumulative Frequency</b> | (iv) | <b>Age (in years)</b> | <b>Cumulative Frequency</b> |
|       | 20 - 25               | 48                          |      | 20 - 25               | 48                          |
|       | 25 - 30               | 115                         |      | 25 - 30               | 112                         |
|       | 30 - 35               | 179                         |      | 30 - 35               | 173                         |
|       | 35 - 40               | 234                         |      | 35 - 40               | 228                         |
|       | 40 - 45               | 300                         |      | 40 - 45               | 294                         |
|       | 45 - 50               | 364                         |      | 45 - 50               | 361                         |

Following are the daily wages (in rupees) of labourers working in a factory. Identify the cumulative frequency of the given grouped data.

5.

| <b>Wages (in rupees)</b> | 200 - 240 | 241 - 281 | 282 - 322 | 323 - 363 | 364 - 404 | 405 - 445 |
|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>Labourers</b>         | 17        | 1         | 10        | 5         | 12        | 19        |

|     |                          |                             |      |                          |                             |
|-----|--------------------------|-----------------------------|------|--------------------------|-----------------------------|
| (i) | <b>Wages (in rupees)</b> | <b>Cumulative Frequency</b> | (ii) | <b>Wages (in rupees)</b> | <b>Cumulative Frequency</b> |
|     | 200 - 240                | 17                          |      | 200 - 240                | 17                          |
|     | 241 - 281                | 27                          |      | 241 - 281                | 18                          |
|     | 282 - 322                | 28                          |      | 282 - 322                | 25                          |
|     | 323 - 363                | 33                          |      | 323 - 363                | 30                          |
|     | 364 - 404                | 45                          |      | 364 - 404                | 42                          |
|     | 405 - 445                | 64                          |      | 405 - 445                | 61                          |

|       |                          |                             |      |                          |                             |
|-------|--------------------------|-----------------------------|------|--------------------------|-----------------------------|
| (iii) | <b>Wages (in rupees)</b> | <b>Cumulative Frequency</b> | (iv) | <b>Wages (in rupees)</b> | <b>Cumulative Frequency</b> |
|       | 200 - 240                | 17                          |      | 200 - 240                | 17                          |
|       | 241 - 281                | 18                          |      | 241 - 281                | 18                          |
|       | 282 - 322                | 28                          |      | 282 - 322                | 28                          |
|       | 323 - 363                | 33                          |      | 323 - 363                | 37                          |
|       | 364 - 404                | 45                          |      | 364 - 404                | 49                          |
|       | 405 - 445                | 64                          |      | 405 - 445                | 68                          |

|     |                          |                             |
|-----|--------------------------|-----------------------------|
| (v) | <b>Wages (in rupees)</b> | <b>Cumulative Frequency</b> |
|     | 200 - 240                | 17                          |
|     | 241 - 281                | 36                          |
|     | 282 - 322                | 46                          |
|     | 323 - 363                | 51                          |
|     | 364 - 404                | 63                          |
|     | 405 - 445                | 64                          |

Following are the daily wages (in rupees) of labourers working in a factory. Identify the cumulative frequency of the given grouped data.

6.

| <b>Wages (in rupees)</b> | 300 - 340 | 340 - 380 | 380 - 420 | 420 - 460 | 460 - 500 | 500 - 540 |
|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>Labourers</b>         | 11        | 15        | 2         | 18        | 4         | 4         |

|     |                          |                             |      |                          |                             |
|-----|--------------------------|-----------------------------|------|--------------------------|-----------------------------|
| (i) | <b>Wages (in rupees)</b> | <b>Cumulative Frequency</b> | (ii) | <b>Wages (in rupees)</b> | <b>Cumulative Frequency</b> |
|     | 300 - 340                | 11                          |      | 300 - 340                | 11                          |

|           |    |
|-----------|----|
| 340 - 380 | 15 |
| 380 - 420 | 17 |
| 420 - 460 | 35 |
| 460 - 500 | 39 |
| 500 - 540 | 54 |

|           |    |
|-----------|----|
| 340 - 380 | 13 |
| 380 - 420 | 28 |
| 420 - 460 | 46 |
| 460 - 500 | 50 |
| 500 - 540 | 54 |

(iii)

| Wages (in rupees) | Cumulative Frequency |
|-------------------|----------------------|
| 300 - 340         | 11                   |
| 340 - 380         | 26                   |
| 380 - 420         | 28                   |
| 420 - 460         | 41                   |
| 460 - 500         | 45                   |
| 500 - 540         | 49                   |

(iv)

| Wages (in rupees) | Cumulative Frequency |
|-------------------|----------------------|
| 300 - 340         | 11                   |
| 340 - 380         | 26                   |
| 380 - 420         | 30                   |
| 420 - 460         | 48                   |
| 460 - 500         | 52                   |
| 500 - 540         | 56                   |

(v)

| Wages (in rupees) | Cumulative Frequency |
|-------------------|----------------------|
| 300 - 340         | 11                   |
| 340 - 380         | 26                   |
| 380 - 420         | 28                   |
| 420 - 460         | 46                   |
| 460 - 500         | 50                   |
| 500 - 540         | 54                   |

Identify the cumulative frequency of the given grouped data.

7.

| class interval | 29 - 36 | 37 - 44 | 45 - 52 | 53 - 60 | 61 - 68 | 69 - 76 |
|----------------|---------|---------|---------|---------|---------|---------|
| frequency      | 24      | 6       | 8       | 24      | 18      | 22      |

(i)

| class interval | Cumulative Frequency |
|----------------|----------------------|
| 29 - 36        | 24                   |
| 37 - 44        | 30                   |
| 45 - 52        | 42                   |
| 53 - 60        | 66                   |
| 61 - 68        | 84                   |
| 69 - 76        | 106                  |

(ii)

| class interval | Cumulative Frequency |
|----------------|----------------------|
| 29 - 36        | 24                   |
| 37 - 44        | 32                   |
| 45 - 52        | 38                   |
| 53 - 60        | 62                   |
| 61 - 68        | 80                   |
| 69 - 76        | 102                  |

(iii)

| class interval | Cumulative Frequency |
|----------------|----------------------|
| 29 - 36        | 24                   |
| 37 - 44        | 30                   |
| 45 - 52        | 38                   |
| 53 - 60        | 65                   |
| 61 - 68        | 83                   |
| 69 - 76        | 105                  |

(iv)

| class interval | Cumulative Frequency |
|----------------|----------------------|
| 29 - 36        | 24                   |
| 37 - 44        | 46                   |
| 45 - 52        | 54                   |
| 53 - 60        | 78                   |
| 61 - 68        | 96                   |
| 69 - 76        | 102                  |

(v)

| class interval | Cumulative Frequency |
|----------------|----------------------|
| 29 - 36        | 24                   |
| 37 - 44        | 30                   |
|                |                      |

|         |     |
|---------|-----|
| 45 - 52 | 38  |
| 53 - 60 | 62  |
| 61 - 68 | 80  |
| 69 - 76 | 102 |

Identify the cumulative frequency of the given grouped data.

8.

| class interval | 15 - 21 | 21 - 27 | 27 - 33 | 33 - 39 | 39 - 45 | 45 - 51 | 51 - 57 |
|----------------|---------|---------|---------|---------|---------|---------|---------|
| frequency      | 17      | 9       | 5       | 19      | 12      | 24      | 7       |

(i)

| class interval | Cumulative Frequency |
|----------------|----------------------|
| 15 - 21        | 17                   |
| 21 - 27        | 26                   |
| 27 - 33        | 31                   |
| 33 - 39        | 50                   |
| 39 - 45        | 62                   |
| 45 - 51        | 86                   |
| 51 - 57        | 93                   |

(ii)

| class interval | Cumulative Frequency |
|----------------|----------------------|
| 15 - 21        | 17                   |
| 21 - 27        | 22                   |
| 27 - 33        | 31                   |
| 33 - 39        | 50                   |
| 39 - 45        | 62                   |
| 45 - 51        | 86                   |
| 51 - 57        | 93                   |

(iii)

| class interval | Cumulative Frequency |
|----------------|----------------------|
| 15 - 21        | 17                   |
| 21 - 27        | 26                   |
| 27 - 33        | 28                   |
| 33 - 39        | 47                   |
| 39 - 45        | 59                   |
| 45 - 51        | 83                   |
| 51 - 57        | 90                   |

(iv)

| class interval | Cumulative Frequency |
|----------------|----------------------|
| 15 - 21        | 17                   |
| 21 - 27        | 24                   |
| 27 - 33        | 29                   |
| 33 - 39        | 48                   |
| 39 - 45        | 60                   |
| 45 - 51        | 84                   |
| 51 - 57        | 93                   |

(v)

| class interval | Cumulative Frequency |
|----------------|----------------------|
| 15 - 21        | 17                   |
| 21 - 27        | 26                   |
| 27 - 33        | 31                   |
| 33 - 39        | 46                   |
| 39 - 45        | 58                   |
| 45 - 51        | 82                   |
| 51 - 57        | 89                   |

Find the cumulative frequency of class 64 - 71 .

9.

| Class-Interval | 40 - 47 | 48 - 55 | 56 - 63 | 64 - 71 | 72 - 79 | 80 - 87 |
|----------------|---------|---------|---------|---------|---------|---------|
| Frequency      | 22      | 8       | 22      | 23      | 13      | 22      |

(i) 78 (ii) 73 (iii) 76 (iv) 74 (v) 75

10. Find the cumulative frequency of class 28 - 38 .

| Class-Interval | 18 - 28 | 28 - 38 | 38 - 48 | 48 - 58 | 58 - 68 | 68 - 78 | 78 - 88 | 88 - 98 |
|----------------|---------|---------|---------|---------|---------|---------|---------|---------|
|----------------|---------|---------|---------|---------|---------|---------|---------|---------|

|                  |    |    |   |    |    |    |   |    |
|------------------|----|----|---|----|----|----|---|----|
| <b>Frequency</b> | 13 | 25 | 7 | 20 | 24 | 10 | 7 | 14 |
|------------------|----|----|---|----|----|----|---|----|

(i) 35 (ii) 39 (iii) 38 (iv) 37 (v) 40

The following cumulative frequency table represents which of the following frequency distribution

11.

| <b>Class-Interval</b> | <b>Cumulative Frequency</b> |
|-----------------------|-----------------------------|
| 37 - 46               | 11                          |
| 46 - 55               | 25                          |
| 55 - 64               | 31                          |
| 64 - 73               | 44                          |
| 73 - 82               | 49                          |
| 82 - 91               | 63                          |

(i)

| <b>Class-Interval</b> | 37 - 46 | 46 - 55 | 55 - 64 | 64 - 73 | 73 - 82 | 82 - 91 |
|-----------------------|---------|---------|---------|---------|---------|---------|
| <b>Frequency</b>      | 11      | 14      | 10      | 13      | 5       | 14      |

(ii)

| <b>Class-Interval</b> | 37 - 46 | 46 - 55 | 55 - 64 | 64 - 73 | 73 - 82 | 82 - 91 |
|-----------------------|---------|---------|---------|---------|---------|---------|
| <b>Frequency</b>      | 11      | 6       | 14      | 13      | 5       | 14      |

(iii)

| <b>Class-Interval</b> | 37 - 46 | 46 - 55 | 55 - 64 | 64 - 73 | 73 - 82 | 82 - 91 |
|-----------------------|---------|---------|---------|---------|---------|---------|
| <b>Frequency</b>      | 11      | 14      | 6       | 13      | 5       | 14      |

(iv)

| <b>Class-Interval</b> | 37 - 46 | 46 - 55 | 55 - 64 | 64 - 73 | 73 - 82 | 82 - 91 |
|-----------------------|---------|---------|---------|---------|---------|---------|
| <b>Frequency</b>      | 11      | 14      | 6       | 15      | 5       | 14      |

The following cumulative frequency table represents which of the following frequency distribution

12.

| <b>Class-Interval</b> | <b>Cumulative Frequency</b> |
|-----------------------|-----------------------------|
| 21 - 27               | 89                          |
| 27 - 33               | 79                          |
| 33 - 39               | 68                          |
| 39 - 45               | 53                          |
| 45 - 51               | 37                          |
| 51 - 57               | 21                          |
| 57 - 63               | 8                           |

(i)

| <b>Class-Interval</b> | 21 - 27 | 27 - 33 | 33 - 39 | 39 - 45 | 45 - 51 | 51 - 57 | 57 - 63 |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|
| <b>Frequency</b>      | 10      | 11      | 18      | 16      | 16      | 13      | 8       |

(ii)

| <b>Class-Interval</b> | 21 - 27 | 27 - 33 | 33 - 39 | 39 - 45 | 45 - 51 | 51 - 57 | 57 - 63 |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|
| <b>Frequency</b>      | 10      | 8       | 15      | 16      | 16      | 13      | 11      |

(iii)

| <b>Class-Interval</b> | 21 - 27 | 27 - 33 | 33 - 39 | 39 - 45 | 45 - 51 | 51 - 57 | 57 - 63 |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|
| <b>Frequency</b>      | 10      | 11      | 15      | 16      | 16      | 13      | 8       |

(iv)

| <b>Class-Interval</b> | 21 - 27 | 27 - 33 | 33 - 39 | 39 - 45 | 45 - 51 | 51 - 57 | 57 - 63 |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|
| <b>Frequency</b>      | 10      | 11      | 15      | 13      | 16      | 13      | 8       |

(v)

| Class-Interval | 21 - 27 | 27 - 33 | 33 - 39 | 39 - 45 | 45 - 51 | 51 - 57 | 57 - 63 |
|----------------|---------|---------|---------|---------|---------|---------|---------|
| Frequency      | 10      | 15      | 11      | 16      | 16      | 13      | 8       |

---

During the medical check-up of 32 students of a class, their weights in kgs are recorded as follows.

Identify the number of students whose weight is less than 43 kg

13.

| Class-Interval | 31 - 37 | 37 - 43 | 43 - 49 | 49 - 55 |
|----------------|---------|---------|---------|---------|
| Frequency      | 11      | 8       | 5       | 8       |

(i) 19 (ii) 20 (iii) 21 (iv) 17 (v) 18

---

During the medical check-up of 29 students of a class, their weights in kgs are recorded as follows.

Identify the number of students whose weight is more than 48 kg

14.

| Class-Interval | 30 - 36 | 36 - 42 | 42 - 48 | 48 - 54 |
|----------------|---------|---------|---------|---------|
| Frequency      | 7       | 9       | 8       | 5       |

(i) 8 (ii) 5 (iii) 4 (iv) 6 (v) 3

---

**Assignment Key**

---

- 1) (iii)
- 2) (iv)
- 3) (ii)
- 4) (ii)
- 5) (iii)
- 6) (v)
- 7) (v)
- 8) (i)
- 9) (v)
- 10) (iii)
- 11) (iii)
- 12) (iii)
- 13) (i)
- 14) (ii)