Questions 15:
Let us find the prime factorization of 1001 and 910:
1001 = 11 x 7 x 13
910 = 2 x 5 x 7 x 13

| 11 | 1001 |
|---|---|
| 7 | 91 |
|  | 13 |

| 2 | 910 |
|---|---|
| 5 | 455 |
| 7 | 91 |
|  | 13 |

H.C.F. of 1001 and 910 is 7 x 13 = 91
Maximum number of students = 91

Questions 16:
Let us find the HCF of 336, 240 and 96 through prime factorization:

| 2 | 336 |
|---|---|
| 2 | 168 |
| 2 | 84 |
| 2 | 42 |
| 3 | 21 |
|  | 7 |

| 2 | 240 |
|---|---|
| 2 | 120 |
| 2 | 60 |
| 2 | 30 |
| 3 | 15 |
|  | 5 |

| 2 | 96 |
|---|---|
| 2 | 48 |
| 2 | 24 |
| 2 | 12 |
| 2 | 6 |
|  | 3 |

$$336 = 2 \times 2 \times 2 \times 2 \times 3 \times 7 = 2^4 \times 3 \times 7$$

$$240 = 2 \times 2 \times 2 \times 2 \times 3 \times 5 = 2^4 \times 3 \times 5$$

$$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3 = 2^5 \times 3$$

$$H.C.F = 2^4 \times 3 = 16 \times 3 = 48$$

Each stack of book will contain 48 books
Number of stacks of the same height

$$= \frac{240}{48} + \frac{336}{48} + \frac{96}{48} = 5 + 7 + 2 = 14$$

Questions 17:

Length of ceiling = 15m 17cm = 1517 cm
Its breadth = 9m 2cm = 902 cm

```
902)1517 ( 1
     902
     615)  902 (1
           615
           287) 615 (2
                574
                41)287( 7
                   287
                    ×
```

∴ H.C.F. of 1517 and 902 = 41

Maximum size of tile = 41cm × 41cm

Least number of tiles = $\dfrac{1517 \times 902}{41 \times 41}$ = 37 × 22 = 814

********** END *********