**Lab Session 8.**

**Table 4:** Electricity consumption data

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Unit** | **Area** | **AC** |
| 1 | 1060 | 1316 | 5 |
| 2 | 1150 | 1420 | 7 |
| 3 | 1365 | 1556 | 12 |
| 4 | 1275 | 1488 | 9 |
| 5 | 1425 | 1612 | 13 |
| 6 | 1310 | 1516 | 10 |
| 7 | 1365 | 1556 | 12 |
| 8 | 1075 | 1352 | 6 |
| 9 | 925 | 1168 | 4 |
| 10 | 1340 | 1540 | 11 |
| 11 | 1425 | 1612 | 13 |
| 12 | 1150 | 1420 | 8 |
| 13 | 1060 | 1316 | 5 |
| 14 | 1545 | 1680 | 15 |
| 15 | 1140 | 1388 | 7 |
| 16 | 1075 | 1352 | 6 |
| 17 | 1620 | 1736 | 16 |
| 18 | 1050 | 1296 | 5 |
| 19 | 1310 | 1516 | 10 |
| 20 | 1645 | 1760 | 16 |
| 21 | 1565 | 1696 | 15 |
| 22 | 1215 | 1464 | 9 |
| 23 | 1275 | 1488 | 10 |
| 24 | 1465 | 1632 | 13 |
| 25 | 1080 | 1356 | 7 |
| 26 | 975 | 1196 | 4 |
| 27 | 1040 | 1256 | 5 |
| 28 | 1340 | 1540 | 11 |
| 29 | 865 | 1144 | 4 |
| 30 | 1175 | 1440 | 8 |
| 31 | 1080 | 1356 | 7 |
| 32 | 1500 | 1652 | 15 |
| 33 | 1175 | 1440 | 9 |
| 34 | 1050 | 1296 | 5 |
| 35 | 1365 | 1580 | 12 |
| 36 | 1465 | 1632 | 15 |
| 37 | 1215 | 1464 | 9 |
| 38 | 1365 | 1580 | 12 |
| 39 | 1140 | 1388 | 7 |
| 40 | 1005 | 1224 | 4 |

Continuous Assessment 8

Suppose we are interested in determining the correlation coefficients between the electricity consumption, size of the house and the number of hours an AC is used in a household during summers.

For this purpose, a sample of 40 houses having one AC was selected. We have recorded the electricity consumption (in kWh), size of the house (in square feet) and number of hours of AC use for one month during summers in Table 4.

Now the following tasks are given:

i) Compute Pearson’s correlation coefficients between:

(a) Electricity consumption and size of the house

(b) Electricity consumption and number of hours the AC is used

(c) Size of the house and number of hours the AC is used

ii) Determine the multiple correlation coefficients:

R1.23, R2.13, and 𝑅3.12.

iii) Obtain the partial correlation coefficients:

R1.2,3, R1.3,2, R3.1,2.