H.W (1) Suppose you have BP- ANN with 2-input, 2-hiddden, 1-output nodes with **sigmoid function** and the following matrices initial weights, trace with 2-iteration.

0.1 0.4 0.2

 V= - 0.2 0.2 *W =*  - 0.5 , Where **∝** = 0.1, η = 0.6

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Epoch** | **i** | **Input** | **Output** | **Initial Weights** | **Y1**(Oactual) | **△1** | **δ1** | **δ2** | **Final Weights** |
| **X1** | **X2** | **d1****(** Odesired**)** | **V11** | **V12** | **V21** | **V22** | **W11** | **W21** | **V11** | **V12** | **V21** | **V22** | **W11** | **W21** |
| 1 | 1 | ***0.4*** | ***- 0.7*** | ***0.1*** | ***0.1*** | ***0.4*** | ***- 0.2*** | ***0.2*** | ***0.2*** | ***- 0.5*** |  |  |  |  |  |  |  |  |  |  |
| 2 | ***0.3*** | ***- 0.5*** | ***0.05*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | ***0.6*** | ***0.1*** | ***0.3*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | ***0.2*** | ***0.4*** | ***0.25*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | ***0.1*** | ***- 0.2*** | ***0.12*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | 1 | 0.4 | - 0.7 | 0.1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | 0.3 | - 0.5 | 0.05 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | 0.6 | 0.1 | 0.3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | 0.2 | 0.4 | 0.25 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | 0.1 | - 0.2 | 0.12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

توضيح الحل :