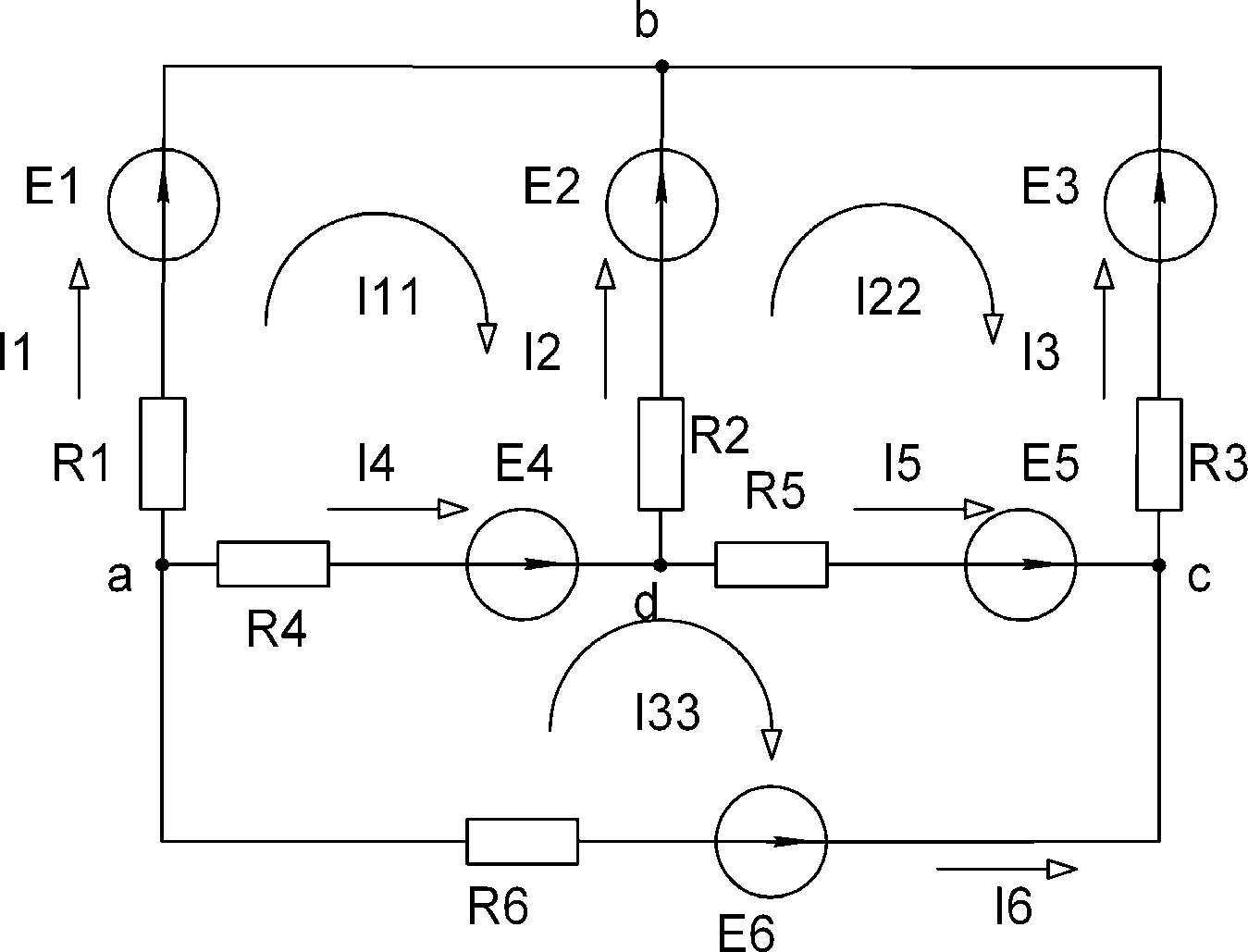
**Домашняя работа №1**

1. Определить токи во всех ветвях методом непосредственного применения законов Кирхгофа,
   * Составить баланс мощностей.
2. Определить токи во всех ветвях методом контурных токов.
3. Определить токи во всех ветвях методом узловых потенциалов.
4. Результаты расчётов пунктов 2 и 3 свести в таблицу:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Метод | I1 | I2 | I3 | I4 | I5 | I6 |
| Кирхгоф |  |  |  |  |  |  |
| М.К.Т. |  |  |  |  |  |  |
| М.У.П. |  |  |  |  |  |  |

1. Определить ток I1 методом эквивалентного генератора.
2. Начертить потенциальную диаграмму для любого замкнутого контура, включающего обе ЭДС.

**Расчётная схема**



**Варианты задания**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Вариант | R1 | R2 | R3 | R4 | R5 | R6 | E1 | E2 | E3 | E4 | E5 | E6 |
| 1 | 79 | 53 | 28 | 93 | 25 | 100 |  |  |  |  | 15 | 21 |
| 2 | 11 | 55 | 96 | 1 | 45 | 1 |  | 11 |  | 17 |  |
| 3 | 70 | 58 | 21 | 14 | 48 | 16 |  |  |  | 10 | 26 |
| 4 | 5 | 77 | 50 | 35 | 17 | 92 |  |  | 18 |  | 22 |
| 5 | 17 | 28 | 43 | 7 | 38 | 30 | 27 |  |  | 8 |  |
| 6 | 64 | 98 | 30 | 48 | 58 | 65 |  | 25 |  |  | 30 |
| 7 | 20 | 18 | 66 | 71 | 93 | 75 | 24 |  |  | 30 |  |
| 8 | 5 | 1 | 4 | 94 | 37 | 36 |  |  |  | 11 | 23 |
| 9 | 25 | 95 | 24 | 29 | 23 | 17 |  | 8 |  |  | 7 |
| 10 | 83 | 29 | 67 | 94 | 30 | 69 | 22 |  |  | 22 |  |
| 11 | 43 | 20 | 27 | 82 | 40 | 26 |  | 29 | 23 |  |  |  |
| 12 | 93 | 70 | 17 | 80 | 4 | 78 | 12 |  |  | 4 |  |  |
| 13 | 31 | 13 | 40 | 80 | 36 | 96 |  |  | 16 |  |  | 9 |
| 14 | 23 | 11 | 44 | 15 | 86 | 61 | 14 |  | 1 |  |  |  |
| 15 | 53 | 59 | 39 | 42 | 5 | 73 | 21 |  | 2 |  |  |  |
| 16 | 93 | 50 | 9 | 96 | 27 | 25 |  |  | 8 |  |  | 6 |
| 17 | 5 | 49 | 12 | 56 | 7 | 94 |  |  |  |  | 1 | 27 |
| 18 | 11 | 34 | 33 | 98 | 37 | 13 |  | 22 | 21 |  |  |  |
| 19 | 4 | 55 | 54 | 12 | 45 | 14 |  | 25 |  | 7 |  |  |
| 20 | 89 | 76 | 32 | 94 | 2 | 42 |  |  | 15 |  | 27 |  |
| 21 | 9 | 6 | 58 | 40 | 25 | 1 |  |  |  | 17 | 19 |  |
| 22 | 42 | 85 | 92 | 37 | 58 | 41 |  | 11 |  |  |  | 26 |
| 23 | 2 | 59 | 82 | 55 | 38 | 3 |  |  |  |  | 12 | 3 |
| 24 | 43 | 32 | 82 | 6 | 44 | 55 |  |  |  | 2 |  | 9 |
| 25 | 39 | 4 | 40 | 3 | 2 | 2 |  |  | 25 |  | 8 |  |
| 26 | 18 | 3 | 57 | 100 | 63 | 77 |  |  | 7 | 20 |  |  |
| 27 | 33 | 97 | 86 | 14 | 81 | 8 |  | 2 |  | 29 |  |  |
| 28 | 88 | 68 | 41 | 94 | 87 | 64 | 16 |  |  |  |  | 14 |
| 29 | 90 | 24 | 36 | 11 | 94 | 52 |  |  | 17 |  |  | 30 |
| 30 | 97 | 91 | 91 | 69 | 37 | 94 |  | 30 | 18 |  |  |  |
| Вариант | R1 | R2 | R3 | R4 | R5 | R6 | E1 | E2 | E3 | E4 | E5 | E6 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Вариант | R1 | R2 | R3 | R4 | R5 | R6 | E1 | E2 | E3 | E4 | E5 | E6 |
| 31 | 33 | 8 | 39 | 27 | 5 | 94 |  | 2 |  | 21 |  |  |
| 32 | 93 | 70 | 31 | 94 | 11 | 82 | 13 |  |  |  | 10 |  |
| 33 | 54 | 43 | 22 | 27 | 28 | 57 |  | 4 | 7 |  |  |  |
| 34 | 10 | 30 | 66 | 70 | 70 | 30 |  | 10 |  | 26 |  |  |
| 35 | 90 | 76 | 2 | 57 | 75 | 57 |  |  |  | 15 | 6 |  |
| 36 | 32 | 89 | 5 | 93 | 53 | 21 |  |  |  | 27 | 20 |  |
| 37 | 52 | 55 | 63 | 77 | 74 | 11 |  |  | 27 |  |  | 1 |
| 38 | 100 | 23 | 76 | 79 | 95 | 1 |  |  |  |  | 1 | 4 |
| 39 | 12 | 58 | 14 | 60 | 27 | 22 |  |  |  | 29 | 16 |  |
| 40 | 26 | 45 | 66 | 17 | 11 | 61 | 19 |  |  |  |  | 15 |
| 41 | 73 | 84 | 58 | 93 | 77 | 50 |  |  |  | 11 |  | 4 |
| 42 | 63 | 66 | 38 | 51 | 4 | 8 |  | 1 |  |  |  | 10 |
| 43 | 35 | 25 | 70 | 18 | 88 | 61 |  | 13 |  | 27 |  |  |
| 44 | 50 | 28 | 92 | 39 | 77 | 9 | 13 | 25 |  |  |  |  |
| 45 | 62 | 60 | 44 | 40 | 55 | 71 |  | 21 |  |  |  | 11 |
| 46 | 95 | 22 | 4 | 9 | 60 | 100 | 24 |  | 19 |  |  |  |
| 47 | 18 | 78 | 100 | 100 | 96 | 56 |  |  | 27 |  |  | 11 |
| 48 | 21 | 23 | 20 | 40 | 31 | 85 |  | 29 |  |  | 17 |  |
| 49 | 20 | 10 | 84 | 65 | 39 | 46 |  | 13 | 24 |  |  |  |
| 50 | 3 | 65 | 52 | 10 | 29 | 93 |  | 16 |  |  | 14 |  |
| 51 | 38 | 36 | 25 | 47 | 65 | 23 |  | 27 | 22 |  |  |  |
| 52 | 43 | 70 | 71 | 3 | 48 | 7 | 12 |  | 9 |
| 53 | 79 | 19 | 35 | 80 | 51 | 14 | 7 |  | 20 |
| 54 | 62 | 48 | 41 | 88 | 3 | 88 |  | 30 | 15 |
| 55 | 95 | 75 | 2 | 42 | 98 | 16 |  |  | 24 | 26 |  |  |
| 56 | 80 | 64 | 4 | 7 | 44 | 30 | 9 | 15 |  |  |  |
| 57 | 20 | 81 | 100 | 94 | 61 | 97 | 20 |  |  |  | 23 |
| 58 | 66 | 53 | 12 | 97 | 97 | 60 |  |  | 14 | 6 |  |
| 59 | 50 | 94 | 27 | 7 | 47 | 53 | 23 |  | 28 |  |  |
| 60 | 18 | 55 | 28 | 67 | 52 | 71 | 18 | 9 |  |  |  |
| 61 | 74 | 89 | 96 | 45 | 10 | 89 | 25 |  | 18 |  |  |  |
| 62 | 71 | 79 | 91 | 3 | 40 | 67 |  |  | 25 |  |  | 28 |
| 63 | 49 | 99 | 66 | 30 | 92 | 49 |  |  |  | 26 | 2 |  |
| 64 | 51 | 26 | 93 | 92 | 26 | 49 |  |  |  | 12 |  | 11 |
| 65 | 85 | 54 | 29 | 77 | 47 | 22 |  | 29 | 22 |  |  |  |
| 66 | 73 | 65 | 15 | 31 | 60 | 52 |  | 13 |  |  | 21 |  |
| 67 | 16 | 61 | 36 | 66 | 89 | 71 | 10 |  | 19 |  |  |  |
| 68 | 94 | 12 | 60 | 83 | 37 | 1 | 27 |  | 14 |  |  |  |
| 69 | 17 | 82 | 48 | 15 | 15 | 29 |  | 15 |  |  | 25 |  |
| 70 | 73 | 54 | 13 | 57 | 56 | 51 |  |  | 8 | 9 |  |  |
| 71 | 50 | 11 | 75 | 82 | 93 | 35 |  | 25 | 14 |  |  |  |
| 72 | 97 | 51 | 75 | 59 | 59 | 21 | 24 |  | 24 |  |  |  |
| 73 | 27 | 53 | 34 | 47 | 20 | 46 |  |  | 12 | 6 |  |  |
| 74 | 79 | 51 | 12 | 67 | 54 | 71 |  | 4 |  |  | 11 |  |
| 75 | 92 | 45 | 87 | 64 | 35 | 38 |  | 22 |  |  | 4 |  |
| 76 | 25 | 41 | 82 | 58 | 64 | 48 |  | 20 |  |  |  | 20 |
| 77 | 85 | 67 | 79 | 60 | 13 | 46 |  | 17 | 15 |  |  |  |
| 78 | 11 | 70 | 21 | 58 | 83 | 87 |  |  |  | 11 | 19 |  |
| 79 | 6 | 59 | 65 | 82 | 1 | 60 |  |  |  | 15 |  | 29 |
| 80 | 89 | 11 | 70 | 79 | 16 | 51 | 4 |  |  |  |  | 5 |
| 81 | 51 | 47 | 89 | 55 | 16 | 19 |  |  | 13 | 15 |  |  |
| 82 | 17 | 28 | 1 | 29 | 98 | 47 | 19 |  | 18 |  |  |
| 83 | 32 | 99 | 19 | 44 | 99 | 50 | 13 |  | 23 |  |  |
| 84 | 38 | 95 | 96 | 5 | 25 | 14 | 3 |  |  |  | 21 |
| 85 | 42 | 14 | 21 | 73 | 67 | 73 |  |  | 20 |  | 24 |
| 86 | 1 | 95 | 43 | 94 | 19 | 24 |  |  |  | 17 | 15 |
| 87 | 15 | 28 | 17 | 62 | 38 | 21 | 13 |  |  | 14 |  |
| 88 | 94 | 17 | 15 | 48 | 7 | 64 | 14 | 13 |  |  |  |
| 89 | 87 | 97 | 59 | 95 | 23 | 57 |  |  | 14 | 17 |  |
| 90 | 83 | 58 | 77 | 41 | 45 | 52 |  |  | 18 | 25 |  |
| 91 | 10 | 61 | 92 | 58 | 82 | 52 |  | 1 |  | 24 |  |  |
| 92 | 46 | 50 | 99 | 50 | 30 | 56 | 13 |  |  |  | 30 |  |
| 93 | 10 | 89 | 62 | 6 | 52 | 60 |  | 8 |  | 20 |  |  |
| 94 | 78 | 74 | 57 | 8 | 16 | 100 |  |  |  | 10 | 11 |  |
| 95 | 7 | 20 | 38 | 92 | 57 | 14 | 8 |  |  |  |  | 30 |
| 96 | 51 | 69 | 15 | 80 | 100 | 92 |  | 18 |  |  |  | 25 |
| 97 | 76 | 44 | 21 | 78 | 64 | 41 |  |  |  | 30 | 26 |  |
| 98 | 54 | 26 | 12 | 16 | 89 | 60 |  |  |  | 10 |  | 3 |
| 99 | 100 | 73 | 5 | 22 | 30 | 73 |  | 3 | 14 |  |  |  |
| 100 | 41 | 11 | 37 | 73 | 47 | 1 | 7 |  |  |  | 22 |  |
| Вариант | R1 | R2 | R3 | R4 | R5 | R6 | E1 | E2 | E3 | E4 | E5 | E6 |