**GBN Govt. Polytechnic Nilokheri, Karnal**

**Electrical Engineering Department**

**Lesson plan**

|  |  |
| --- | --- |
| **Name of Faculty** |  Sh. Ajay Kishor |
| **Discipline** | Electrical Engineering |
| **Semester** | 4th |
| **Subject** | Digital Electronics |
| **Lesson Plan Duration** | 16Week(From March 2023 to June 2023)Theory-04,Practical -02 |
| **Work load [Theory + Practical] Per Week** |  Sh. Ajay Kishor |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Topic(Including Assignment/Test)** | **Practical****day** | **Topic** |
| 1st | **1:NumberSystems** | Day1 | Verification and interpretation of truth table for AND,OR, |
| Decimal, binary |
| Octal and hexadecimal number systems |
| And the irinter-conversion |
| 2nd | Numerical based on inter-conversion | Day2 | NOT,NAND,NOR,X-OR gates |
| Binary and Hexa decimal addition |
| Subtraction and multiplication |
| 1’sandmethodsofaddition/subtraction |
| 3rd | 2’scomplement | Day3 | Revision and checking |
| Numerical/ problems |
| Numerical/ problems |
| **2:Gates**;Definition,symbolandtruthtablesforinverter,OR, |
| 4th | AND, NAND | Day4 | Construction of Half Adder Using gates |
| NOR and X-OR and |
| Equivalence circuit(Ex-NOR) |
| Revision/assignment |
| 5th | Class test | Day5 | Construction of Full Adder using gates |
| **3:Boolean Algebra** ; Boolean Relations and their applications |
| DeMorgan’s Theorems |
| K-Map for two variables |
| 6th | k-mapfor 4variable | Day6 | Revision and checking |
| Numerical based onk-map |
| Numerical based onk-map |
| **4:CombinationalCircuits** |
| 7th | Half adder with explanation | Day7 | To verify the truth table for JK flip-flop |
| Full adder |
| Encoder |
| Decoder |
| 8th | Multiplexer/Demultiplexer | Day8 | Revision and checking |
| Display Devices(LED,LCD |
| and7-segmentdisplay) |
| Revision/assignment |
| 9th | Class test | Day9 | Construction and testing of any counter |
| **5:Flip-Flops;**J-KFlip-Flop |
| R-S Flip-Flop |
| D-TypeFlip-Flop |
| 10th | T-TypeFlip-Flop | Day10 | Quiz and assessment |
| ApplicationsofFlip-Flops |
| Revision/assignment |
|  | Class test |  |  |
| 11th | **6:IntroductionofShiftRegistersand****Counters** | Day1 | Verification of operation of a8-bit D/A Converter |
| With types |
| And Counters |
| With types |
| 12th | Revision/assignment |
| Class test | Day1 | Revision and checking |
| **7:A/D and D/A Converters** |
| A/D converter(Counter ramp |
| 13th | Successive approximation method of A/DConversion) | Day1 | Revision and checking |
| D/A converters(Binary weighted |
| R-2RD/A Converter) |
| Revision/assignment |
| 14th | Class test | Day1 | Quiz and revision |
| **8:Semi-conductorMemories** |
| With its Types |
| Merits ,demerits, |
| 15th | And applications | Day1 | Revision and checking |
| Revision/assignment |
| 16th | Class test | Day1 | Revision and checking |
| Revision/Review/Test of old HSBTE Papers |