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| **P.V.P Siddhartha Institute of Technology(Autonomous)** | | | | | | | | | | | | | | | | **Signature of Invigilator with date:** | | **Marks Obtained:** | |
| **Department of Computer Science and Engineering** | | | | | | | | | | | | | | | |
| **Course: B.Tech** | | **Year: II** | | | | **Semester: I** | | | | **Objective: II** | | | | | |
| **Regulation:PVP20** | | **Maximum Marks:10Marks** | | | | | | | | | | **Session: F.N** | | | |
| **A.Y:2023-24** | | **Date:29-11-2023** | | | | | | **Duration: 20 min** | | | | | | | |
| **Subject Code: 20CS3301** | | | | | **Subject Name: Fundamentals of Digital Logic Design** | | | | | | | | | | | | | | |
| **Registered Number:** | | | | | | | | | | | **Name:** | | | | | | | | |
| **Answer all the Questions. Each Question carries ½ Mark 20×½ M=10M** | | | | | | | | | | | | | | | | | | | |
| **S.No** | **Question** | | | | | | | | | | | | | | | | **CO** | **Level** | **Answer** |
| **1.** | **The difference between Half subtractor and full subtractor is \_\_\_\_\_\_\_\_\_\_** | | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Half subtractor has two inputs while full subtractor has four inputs | | | | | | | | | | | | | | | |
| b) Half subtractor has one output while full subtractor has two outputs | | | | | | | | | | | | | | | |
| c) Half subtractor has two inputs while full subtractor has three inputs | | | | | | | | | | | | | | | |
| d) All of the Above | | | | | | | | | | | | | | | |
| **2.** | **The number of input lines in a common BCD to seven segment decoder is** | | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) 8 | | | | | | | b) 2 | | | | | | | | |
| c) 16 | | | | | | | d) 4 | | | | | | | | |
| **3.** | **A Device which converts 2^n inputs to n outputs is called** | | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Decoder | | | b) Encoder | | | | c) Multiplexer | | | | | | d) De Multiplexer | | |
| **4.** | **How many 3x8 Decoders are required to construct a 4x16 Decoder** | | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) 2 | | b)3 | | | | | c) 4 | | | | | d) 5 | | | |
| **5.** | **If A and B are the inputs of a half subtractor, the Difference expression is given by** | | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) A AND B | | | | | | | b) A OR B | | | | | | | | |
| c) A XOR B | | | | | | | d) A X-NOR B | | | | | | | | |
| **6.** | **Multiplexer is also known as** | | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| 1. Data distributor | | | | | | 1. Data Selector | | | | | | | | | |
| 1. Data separator | | | | | | 1. Data connector | | | | | | | | | |
| **7.** | **How many data select lines are required for selecting 32 inputs?** | | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) 1 | | b) 2 | | | | c) 3 | | | | | | | d) 5 | | |
| **8.** | **Find the number of 2x1 MUX required to implement 8x1 MUX** | | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a)15 | | | | | | | b) 20 | | | | | | | | |
| c) 5 | | | | | | | d) 7 | | | | | | | | |
| **9.** | **The Logic Circuit whose outputs at any instance of time depends only on the present input but also on the past outputs are called** | | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Sequential Circuits | | | | | | | | b) Latches | | | | | | | |
| c) Combinational Circuits | | | | | | | | d) Flip Flops | | | | | | | |
| **10.** | **In S-R Latch , When S=1 and R=1 output Q becomes** | | | | | | | | | | | | | | | | **CO1** | **L2** |  |
| a) 0 | | | b) 1 | | | | c) No Change | | | | | | | d)Un determined | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **11.** | **When Toggle Condition occurs in T Flip Flop** | | | | | | | | | | | | **CO1** | **L2** |  |
| * a) T=1 | | | | | | | | * b) T=0 | | | |
| **12.** | **The Register is a type of \_\_\_\_\_\_** | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Sequential Circuit | b) Combinational Circuit | | | | | | c) CPU | | | d) Latches | |
| **13.** | **Which of the following is true about synchronous counters.** | | | | | | | | | | | | **CO1** | **L2** |  |
| a) The output of one flip-flop will act as clock input for next flip-flop | | | | | | | | | | | |
| b) All the Flip-flops have common clock pulse. | | | | | | | | | | | |
| c) Both a & b. | | | | | | | | | | | |
| d) None of the above | | | | | | | | | | | |
| **14.** | **A Counter is defined as\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | | | | | | | | | | | **CO1** | **L2** |  |
| a) A register that goes through a prescribed sequences of states upon the application of an input pulse. | | | | | | | | | | | |
| b) The group of Latches for storing n- bit of Information | | | | | | | | | | | |
| c) The group of Flip Flops suitable for storing one bit of Information | | | | | | | | | | | |
| d) The group of Flip Flops suitable for storing binary Information | | | | | | | | | | | |
| **15.** | **\_\_\_\_\_\_\_\_\_\_\_\_\_\_type of shift register that requires the input in serial and produce the output in serial.** | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Parallel in/ Serial Out | | | | b) Serial in / Parallel Out | | | | | | | |
| c) Serial in / Serial Out | | | | d) A Bidirectional Shift Register | | | | | | | |
| **16.** | **Johnson Counter is also known as\_\_\_\_** | | | | | | | | | | | | **CO1** | **L2** |  |
| a) mod 2n counter | | | | | | b) Twisted Ring counter | | | | | |
| c) Decade Counter | | | | | | d) Both a and b | | | | | |
| **17.** | **Which of the following is representing Full modulus and truncated counters respectively?** | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Mod-6 and Mod-5 | | | | b) Mod-8 and Mod-16 | | | | | | | |
| c) Mod-16 and Mod-12 | | | | d) None of the above | | | | | | | |
| **18.** | **The Number of T- Flip Flops required to design a mod-6 Asynchronous Counter is \_\_\_\_\_\_\_\_\_\_\_** | | | | | | | | | | | | **CO1** | **L2** |  |
| a) 2 | | | 1. 4 | | c) 3 | | | | | | d) 10 |
| **19.** | **In a 6-bit Johnson counter sequence there are a total of how many states, or bit patterns?** | | | | | | | | | | | | **CO1** | **L2** |  |
| a) 2 | | 1. 4 | | c) 6 | | | | | d) 12 | | |
| **20.** | **In which of the following counter no. of states equal to no. of flip flops required?** | | | | | | | | | | | | **CO1** | **L2** |  |
| a) Ring Counter | | | | b) Parallel Counter | | | | | | | |
| c) Ripple Counter | | | | d) Johnson Counter | | | | | | | |