UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

Assignment- II

Program/course: B. Tech. (CSE) **Semester: II**

Subject: Digital Electronics **Max. Marks:** 10

No. of pages: 1

Q1.	Differentiate the following: (a) Combinational and Sequential Circuits (b) Synchronous and Asynchronous Counter (c) Counter and Register (d) SIPO and PIPO Register	**CO2**
Q2.	Explain the following flip-flop in detail: (a) S-R flip-flop (b) T flip-flop	**CO2**
Q3.	Design a 4-bit synchronous down counter that counts through all states from 1111 down to 0000.	**CO2**
Q4.	Design and implement J-K flip-flop using S-R flip-flop.	**CO2**
Q5.	Design a 4-bit Self-correcting Shift Counter using D flip-flop.	**CO2**
Q6.	Design a synchronous BCD counter using either J-K or D flip-flop.	**CO2**
Q7.	Discuss the significance of following registers of 8085 microprocessor (a) Accumulator, i.e. register A (b) General purpose register, i.e. B, C, D, E, H, L (c) Stack Pointer (d) Program Counter (e) Instruction register (f) Temporary register (g) Status Flags	**CO4**
Q8.	What do you understand by timing diagram? Draw and explain the timing diagram of: (a) Fetch operation (b) Memory write operation	**CO4**
Q9.	What do you understand by opcode and operand in an assembly language program. Explain the following types of instructions with the help of examples: (a) One byte instruction (b) Two byte instruction (c) Three byte instruction	**CO4**
Q10.	Explain the following: (a) Binary weighted D/A converter (b) Successive Approximation A/D converter	**CO3**