SHRI RAMSWAROOP MEMORIAL UNIVERSITY

End Semester Examination (2021-22)-Odd Semester

MCA – I Year (I Sem)

Course Name: Digital Electronics & Computer Organization	Code: MEC1013
Time: 02 Hours	Max Marks: 60

University Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

(To be filled by the Student)

Note: Please read instructions carefully:

  a) *The question paper has 03 sections and it is compulsory to attempt all sections.*

  b) *All questions of Section A are compulsory; questions in Section B and C contain choice.*

Section A: Very Short Answer type Questions Attempt all the questions.	BL	CLO	Marks (10)
1. What is priority encoder?	BL1	CLO1	02
2. What are the applications of the octal number system?	BL1	CLO2	02
3. Define Priority Interrupt.	BL1	CLO3	02
4. Define a Pipeline and give an example.	BL1	CLO4	02
5. Define a Micro Program & Micro Instruction.	BL1	CLO3	02
Section B: Short Answer Type Questions **Attempt any 03 out of 06 questions.**	**BL**	**CLO**	**Marks (30)**
1. Compare between Synchronous and Asynchronous Counters.	BL2	CLO1	10
2. What is a Shift register? What are its various types?	BL1	CLO1	10

3. Solve the following numbers as indicated:
   (i) $(C9.63)_{16} = (\quad)_8$
   (ii) $(1405)_{10} = (\quad)_{BCD} = (\quad)_{EX-3}$
   (iii) $(243)_6 = (\quad)_9$
	BL3	CLO2	10

4. What are the different modes of data transfer between central computer and I/O devices? Briefly discuss each.	BL1	CLO4	10
5. Explain functioning of any two input devices and any two output devices.	BL2	CLO5	10
6. Solve the following Boolean function by K-Map: $Y(A,B,C) = (A+B)(\bar{B}+A)$	BL3	CLO2	10
Section C: Long Answer Type Questions **Attempt any 01 out of 03 questions. Answer question in appropriate word limit.**	**BL**	**CLO**	**Marks (20)**
1. Evaluate the following program using three address Instruction format, two address Instruction format, one address Instruction format $X = (A+B) * (C+D)$	BL5	CLO4	20
2. Distinguish between ROM, PROM, EPROM, EEPROM.	BL4	CLO5	20
3. Explain the working of D flip-flop with the help of truth table, circuit diagram, state equation and excitation table.	BL5	CLO1	20