October 2025
B.A./B.Sc.
Third Semester
MINOR – 3
COMPUTER SCIENCE
Course Code: CSN 3.11
(Computer Organisation & Architecture)

Total Mark: 50 *Pass Mark: 20*
Time: 2 hours

I. Answer three *questions, taking* one *from each unit.*

UNIT–I

1. What is a flip-flop? List and explain any three types of flip-flops. How can you simplify a Boolean function? Simplify $F(A,B,C,D)=\sum(2,5,6,7,11,12,15)$ using K-map.
   1+3+2+6=12

2. Explain binary, octal, and hexadecimal number systems. Convert $(DC)_{16}$ to its equivalent binary, decimal, and octal number. 6+6=12

UNIT–II

3. Define computer instruction and instruction set of a computer. List and explain the different types of instructions in an instruction set. Write a note on memory reference instructions and register reference instructions. 2+6+4=12

4. Explain the various types of registers. What is an interrupt? Explain interrupt handling mechanism using a diagram. 6+1+5=12

UNIT–III

5. Write a note on machine language and assembly language. What is CISC architecture? Briefly explain about 8085 microprocessor. 6+2+4=12

6. What do you mean by external devices and I/O modules? Explain programmed I/O and interrupt driven I/O. What are I/O channels? 2+8+2=12

II. Answer <u>any two</u> *of the following questions.*

7. Define logic gates. Write two applications of logic gates. Given $F(A,B,C)=(A+B')\cdot C$ construct the truth table and draw circuit diagram for *F*. 1+2+2+2=7

8. What do you mean by computer design, organization, and architecture? Explain the role of the CU in a computer system. 3+4=7

9. What are microoperations? Explain arithmetic and logical microoperations with example. 1+6=7