

**Exam. Code : 206703**

**Subject Code: 4797**

**M.Sc. Computer Science 3<sup>rd</sup> Semester (Batch 2020-22)**

**SYSTEM SOFTWARE**

**Paper—MCS-302**

Time Allowed—3 Hours] — [Maximum Marks—100

**Note :—** Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The **FIFTH** question may be attempted from any section. All questions carry equal marks.

**SECTION—A**

1. What is assembly language ? Write a program in assembly language to add two numbers. 20
2. Describe various registers used in SIC/XE Machine Architecture. 20

**SECTION—B**

3. Explain the design of a microprocessor with suitable examples. 20
4. Define a macro. Explain macro expansion with examples. 20

**SECTION—C**

5. Explain the design of a compiler. Distinguish between one-pass compiler and two-pass compiler. 20

6. Why optimization is required ? Explain advantages of local and global optimization. 20

**SECTION—D**

7. Explain the design of a direct-linking loader. 20
8. What is an operating system ? Explain the architecture of an operating system. 20