

**2022**  
**B.A./B.Sc.**  
**First Semester**  
 GENERIC ELECTIVE – 1  
**COMPUTER SCIENCE**  
*Course Code: CSG 1.11*  
 (Computer Fundamentals)

*Total Mark: 70*  
*Time: 3 hours*

*Pass Mark: 28*

*Answer five questions, taking one from each unit.*

**UNIT-I**

- |    |   |       |
|----|---|-------|
| 1. | (a) What is a computer? List its capabilities.              | 1+3=4 |
|    | (b) Differentiate between volatile and non-volatile memory. | 5     |
|    | (c) List the components of a computer system.               | 5     |
| 2. | (a) What are the limitations of a computer?                 | 5     |
|    | (b) Explain the different types of memory.                  | 7     |
|    | (c) State the purpose of an ALU.                            | 2     |

**UNIT-II**

- |    |  |       |
|----|--|-------|
| 3. | (a) Explain in detail the various number system representations.               | 8     |
|    | (b) Convert $34.5_8$ to its equivalent binary, decimal and hexadecimal number. | 6     |
| 4. | (a) Perform binary addition:<br>$10001_2 (+) 11001_2$                          | 2     |
|    | (b) Perform binary subtraction:<br>$1010001_2 (-) 10110_2$                     | 2     |
|    | (c) Convert $41.A_{16}$ to its equivalent binary, decimal and octal number.    | 6     |
|    | (d) What is number system? Explain hexadecimal number system.                  | 1+3=4 |

### UNIT-III

5. (a) Differentiate between impact and non-impact printers with examples. 7  
(b) What are the different types of monitor? 7
6. (a) Explain output units with example. 6  
(b) What are the different types of pointing devices? 6  
(c) Why are plotters used? 2

### UNIT-IV

7. (a) Explain the importance of cache memory and its functioning. 5  
(b) Describe CPU with diagram. 8  
(c) Where is ribbon cables used? 1
8. (a) Explain in brief about SMPS. 5  
(b) List the characteristics of a motherboard. 5  
(c) Define:  $2 \times 2 = 4$   
(i) Registers  
(ii) Expansion cards

### UNIT-V

9. (a) State the advantages and disadvantages of cloud computing. 6  
(b) What are the underlying principles applied in mobile computing? 5  
(c) What are some of the limitations while using embedded systems? 3
10. (a) How is data transferred from one device to another using Bluetooth? 4  
(b) Explain in brief:  $5 \times 2 = 10$   
(i) Big data  
(ii) Data mining