PAPER-II
COMPUTER ORGANIZATION AND ARCHITECTURE
SUBJECT CODE: BCS-302

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief. **2 x 10 = 20**

Q. No.	Question	Marks	CO
a	Define memory transfer.	2	1
b	What is three state bus buffer?	2	1
c	What is look ahead carry adder?	2	2
d	State the condition for floating point number to become normalized.	2	2
e	List the steps involved in an instruction cycle.	2	3
f	Write short note on pipelining process.	2	3
g	What do you mean by programming of ROM?	2	4
h	What do you understand by locality of reference?	2	4
i	What do you mean by vector interrupt? Explain.	2	5
j	Explain the cycle stealing in DMA.	2	5

SECTION B

2. Attempt any three of the following: **10 x 3 = 30**

Q. No.	Question	Marks	CO
a.	Explain in detail the various types of addressing modes with an example.	10	1
b.	Explain 2-bit by 2-bit Array multiplier. Draw the flowchart for divide operation of two numbers.	10	2
c.	Explain the organization of Microprogrammed control unit in detail.	10	3
d.	Discuss the 2D RAM and 2.5D RAM with suitable diagram	10	4
e.	Explain the magnetic disk, magnetic tape and optical disk.	10	5

SECTION C

3. Attempt any one part of the following: **10 x 1 = 10**

Q. No.	Question	Marks	CO
a.	Discuss stack organization. Explain the register stack and memory stack in details.	10	1
b.	Draw and explain a diagram of a Bus system in which it uses 3 state buffers and a decoder instead of the multiplexers.	10	1

4. Attempt any one part of the following: 10 x 1 = 10

Q. No.	Question	Marks	CO
a.	Show the multiplication process using Booth`s algorithm when the following numbers are multiplied-(-13) by (+8).	10	2
b.	Explain the flow chart of restoring division operation and non-restoring division operation.	10	2

5. Attempt any one part of the following: 10 x 1 = 10

Q. No.	Question	Marks	CO
a.	Explain the types of instructions on the basis of address fields used in the instruction with example.	10	3
b.	What is pipelining? Explain pipeline for floating point addition and subtraction with flow chart.	10	3

6. Attempt any one part of the following: 10 x 1 = 10

Q. No.	Question	Marks	CO
a.	Explain replacement algorithm in brief.	10	4
b.	Discuss the different mapping techniques used in cache memory.	10	4

7. Attempt any one part of the following: 10 x 1 = 10

Q. No.	Question	Marks	CO
a.	What do you mean by serial communication? Explain synchronous and asynchronous communication.	10	5
b.	Why I/O interface is required? Describe in detail.	10	5