

GAYATRI VIDYA PARISHAD COLLEGE OF ENGINEERING FOR WOMEN
(AUTONOMOUS)

(Affiliated to Andhra University, Visakhapatnam)

I M. Tech II Semester Regular Examinations, August- 2026

High Performance Computing-24CS21PE3E

(Common to CSE, CSE(DS))

Scheme of Valuation

Q. No.	Sub Q. No.	Scheme of Valuation	Marks allotted
1.	a.	- Explanation of how GPUs act as parallel computers compared to CPUs. - Diagram.	5M 2M
1.	b.	Explanation of more speed and parallelism in computing.	7M
2.	a.	- Explanation of Unified Graphics and Computing Processors. - Diagram.	4M 3M
2.	b.	Explanation of parallel programming languages and models in GPU computing.	7M
3.	a.	- Explanation of UMA and cc NUMA shared memory architectures. - Diagrams.	4M 3M
3.	b.	Explanation of basic steps of parallelization.	7M
4.	a.	- Explanation of architecture of Distributed Memory. - Diagram.	5M 2M
4.	b.	- Explanation of Hierarchical (hybrid) parallel systems. - Diagram.	5M 2M
5.	a.	Explanation of Data Parallelism in CUDA.	7M
5.	b.	Explanation of device memories and host-device data transfer in CUDA.	7M
6.	a.	- Explanation of CUDA thread organization. - Diagram.	5M 2M
6.	b.	- Explanation of kernel functions in CUDA. - Diagram.	5M 2M
7.	a.	- Explanation of data scoping in Open MP. - Diagram.	5M 2M
7.	b.	- Explanation of reduction operations in Open MP. - Diagram.	5M 2M
8.	a.	- Explanation of Open MP parallel execution model. - Diagram.	5M 2M

8.	b.	• Various loop scheduling techniques in Open MP. • Diagram.	5M 2M
9.	a.	• Explanation of Message Passing Model. • Characteristics.	4M 3M
9.	b.	• Explanation of point-to-point communication in MPI with an example.	7M
10.	a.	• Explanation of collective communication. • Operations in MPI.	3M 4M
10.	b.	• Compare blocking and non-blocking communication in MPI.	7M

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