


Name:			
Enrolment No:			
<b>UNIVERSITY OF PETROLEUM AND ENERGY STUDIES</b> <b>End Semester Examination, December 2022</b>			
<b>Course: GPU Programming</b> <b>Program: B.Tech CSE GG</b> <b>Course Code: CSGG 4009</b>		<b>Semester: VII</b> <b>Time : 03 hrs.</b> <b>Max. Marks: 100</b>	
<b>Instructions: Read and follow the instructions written on the answer sheet front page</b>			
<b>SECTION A</b> <b>(5Qx4M=20Marks)</b>			
S. No.		Marks	CO
Q 1	Explain in brief GPGPU how does it differ from GPU?	4	CO2
Q 2	Define scenarios where __global__ must be used before the function signature.	4	CO3
Q 3	Discuss about the utility of Compute Unified Device Architecture.	4	CO2
Q 4	Which of the following correctly describes a GPU kernel a. A kernel may contain a mix of host and GPU code b. All thread blocks involved in the same computation use the same kernel c. A kernel is part of the GPU's internal micro-operating system, allowing it to act as in independent host.	4	CO4
Q 5	True/False: The threads in two different blocks can communicate with each other.	4	CO2
<b>SECTION B</b> <b>(4Qx10M= 40 Marks)</b>			
Q 6	Differentiate between OpenCL and Cuda with their pros and cons.	10	CO2
Q 7	Write a code to demonstrate concurrency using threads with queue. <b>OR</b> Write a code to demonstrate multiprocessing with execution time.	10	CO1
Q 8	Describe the concept of shared memory in with example code in CUDA terminology.	10	CO1
Q 9	Write a parallel algorithm for finding a number in an array of numbers.	10	CO1
<b>SECTION-C</b> <b>(2Qx20M=40 Marks)</b>			
Q 10	Elaborate the data parallelism concepts in OpenCL & OpenACC and compare OpenACC & CUDA <b>OR</b>	20	CO3

	Explore the contents of Data parallel Execution Model and CUDA Memories		
Q 11	Write a CUDA based program to add to number vectors.	<b>20</b>	<b>CO4</b>