

Question Paper

Exam Date & Time: 17-Apr-2018 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

SCHOOL OF INFORMATION SCIENCES (SOIS) SECOND SEMESTER Master of Engineering - ME (COMPUTING TECHNOLOGIES & VIRTUALIZATION) DEGREE EXAMINATION - APRIL 2018

Tuesday, 17 April 2018

Time : 10:00 am to 1:00 pm

Heterogeneous Computing [VIR 616]

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Explain the hardware structure of GPU? (10)
- 2) What is a Shader? What is the need for Shader (10)
- 3) Explain Streaming Processor Architecture with necessary diagrams (10)
- 4) Discuss CUDA Memory Hierarchy (10)
- 5) Write a program using CUDA C to multiply two arrays of at least 100 elements (10)
- 6) What are the types of shared virtual memory in OpenCL? (10)
- 7) Discuss the memory objects available in OpenCL? (10)
- 8) How do the concepts of multi-core and multithreading approach the problem of hardware trade-off in OpenCL Architectures? (10)
- 9) With necessary diagrams, explain Fermi Architecture (10)
- 10) Discuss the pros & cons of Multicore architectures approach to hardware trade-offs (10)

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