**Subject Code: 17MCA5CE4A**

**JAMAL MOHAMED COLLEGE (Autonomous)**

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**M.C.A**

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**Title of the Paper : PARALLEL PROCESSING**

**OBJECTIVE TYPE QUESTIONS**

1. Which one of the following is an efficient form of information processing which emphasizes the exploitation of concurrent events in the computing process?  
    (a) Parallel processing (b) Batch processing

(c) Multiprocessing (d) Time sharing

1. Which of the following are the major components of a typical uniprocessor computer?  
    (a) Main memory (b) CPU

(c) I/O (d) All of the above

1. Which is the number of instructions performed per unit time?  
    (a) Turnaround time (b) System throughput

(c) Average Turnaround time (d) Burst time

1. Which is the number of operations performed per unit time?  
    (a) Turnaround time (b) System throughput

(c) Average Turnaround time (d) Bandwidth

1. Which of the following software approaches are used to achieve concurrency in a uni processor system?

(a) Multiprogramming (b) Batch Processing

(c) Multi Processing (d) Parallel Processing

1. A pipeline computer performs overlapped computations to exploit \_\_\_\_\_\_\_\_\_\_\_\_.  
    (a) Temporal parallelism (b) Spatial parallelism

(c) Asynchronous Parallelism (d) Synchronous parallelism

1. An array processor uses multiple synchronized arithmetic logic units to achieve\_\_\_\_\_\_.  
    (a) Temporal parallelism (b) Spatial parallelism

(c) Asynchronous Parallelism (d) Synchronous parallelism

1. A multiprocessor system achieves \_\_\_\_\_\_\_\_\_\_\_\_\_  
    (a) Temporal parallelism (b) Spatial parallelism

(c) Asynchronous Parallelism (d) Synchronous parallelism

1. Which one of the following is a synchronous parallel computer with multiple arithmetic logic units, called processing elements?  
    (a) Array processor (b) Multiprocessor

(c) Pipelined processor (d) Uni Procesor

1. The conventional von Neumann machines are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_?  
    (a) Control flow computers (b) Data flow computers

(c) Program flow computers (d) System Flow Computers

1. The \_\_\_\_\_\_ is used to denote a sequence of items as executed or operated upon by a single processor.  
    (a) Instructions (b) Data

(c) Stream (d) Devices

1. An \_\_\_\_\_\_\_\_\_\_\_\_ is a sequence of instructions as executed by the machine  
    (a) Device Stream (b) Data stream

(c) System Stream (d) Instruction stream

1. The maximum number of binary digits that can be processed within a unit time by a computer system is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_  
    (a) Instruction Stream (b) Maximum parallelism degree

(c) Data Stream (d) System stream

1. A \_\_\_\_\_\_\_\_ is a sequence of data including input, partial, or temporary results, called for by the instruction stream.  
    (a) Instruction Stream (b) Data stream

(c) Device Stream (d) System stream

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is based on the multiplicity of instruction streams and data streams in a computer system.   
    (a) Flynn’s classification (b) Feng’s scheme

(c) Handler’s classification (d) Newmann Scheme

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is based on serial versus parallel processing.  
    (a) Flynn’s classification (b) Feng’s scheme

(c) Handler’s classification (d) Newmann Scheme

1. \_\_\_\_\_\_\_\_\_ is determined by the degree of parallelism and pipelining in various subsystem levels.  
    (a) Flynn’s classification (b) Feng’s scheme

(c) Handler’s classification (d) Newmann Scheme

1. Which of the following systems are more flexible in general-purpose applications?  
    (a) Multiprocessor (b) Pipelined systems

(c) Array processor (d) Dedicated system

1. In \_\_\_\_\_\_\_\_\_\_ all hardware and software resources are housed in the same computing center with negligible communication delays among subsystems.  
    (a) Centralized (b) Decentralized

(c) Both a & b (d) Partially Centralized

1. Which of the following are synchronized to perform the same function at the same time?  
    (a) Processing elements (b) Array processors

(c) Scalar processors (d) Vector processors

1. In\_\_\_\_\_\_\_\_\_\_\_\_\_ the access time of a memory word is independent of its location  
    (a) DASD (b) SAM

(c) RAM (d) ROM

1. In \_\_\_\_\_\_\_\_ information is accessed serially or sequentially.  
    (a) DASD (b) SAM

(c) RAM (d) ROM

1. \_\_\_\_\_\_\_\_\_\_ are rotational devices made of magnetic materials where any block of information can be accessed directly.  
    (a) DASDs (b) SAMs

(c) RAMs (d) ROMs

1. The most common DASDs are \_\_\_\_\_\_\_\_\_\_\_.  
    (a) Drums (b) Fixed-head disks

(c) Moveable-arm disks (d) All of the above

1. Which of the following scheme distributes the addresses so that consecutive addresses are located within consecutive modules?  
    (a) Interleaving (b) High-level interleaving

(c) Low-order interleaving (d) Low Level Interfacing

1. In \_\_\_\_\_\_\_, there is a tendency for a process to reference in the near future the elements of the reference string reference in the recent past?  
    (a) Temporal locality (b) Spatial locality

(c) Sequential (d) Partial Locality

1. In \_\_\_\_\_\_\_ there is tendency for a process to make references to a portion of the virtual address space in the neighborhood of the last refecence.  
    (a) Temporal locality (b) Spatial locality

(c) Sequential (d) Partial Locality

1. The \_\_\_\_\_\_\_\_\_\_\_\_ maintains the mapping between recently used virtual and physical memory addresses.  
    (a) Translation look aside buffer (b) Single Buffer

(c) Multi Buffer (d) Circular Buffer

1. Which one is a set of logically related contiguous data elements?  
    (a) Pages (b) Blocks (c) PMT (d) Segment
2. A time-consuming \_\_\_\_\_\_\_\_\_\_is used to collect fragments of unused space into one contiguous block for the appropriate segment size.  
    (a) Memory compaction (b) Blocks

(c) PMT (d) Address space

1. A referenced page which is absent in memory causes a \_\_\_\_\_\_\_\_ interrupt.  
    (a) Segment (b) Page-fault (c) Fault (d) Address space
2. A \_\_\_\_\_\_\_ memory policy involves only the resident set of the faulting process.  
    (a) Local (b) Global   
    (c) Fragmentation (d) Thrashing
3. The\_\_\_\_\_\_\_ memory policy considers the history of the resident set of all active processes in making a decision.  
    (a) Local (b) Global   
    (c) Fragmentation (d) Thrashing
4. In \_\_\_\_\_\_\_ , a number of pages of the process are fetched in anticipation of the process’s future page requirements.   
    (a) Demand fetching (b) Demand pre fetching

(c) Both a & b (d) Demand Post fetching

1. In \_\_\_\_\_\_\_\_\_\_\_, only the page referenced is fetched on a miss.  
    (a) Demand fetching (b) Demand pre fetching

(c) Both a & b (d) Demand Post fetching

1. Which of the following are the dispatcher components?  
    (a) Scheduler (b) Memory Policy

(c) Load controller (d) All of the above

1. Which of the following algorithms are called nonlookahead algorithms?  
    (a) LRU (b) LFU

(c) LIFO (d) All the above

1. Which algorithm arranges all the pages of the active processes into a single global LRU stack?  
    (a) Global LRU (b) Global FIFO

(c) Global FINUFO (d) None of the above

1. \_\_\_\_\_\_\_ is a technique to reduce the paging traffic during locality phase transitions.  
    (a) Fetching (b) Pre fetching (c) Queuing (d) Post Fetching
2. The memory portion si partitioned into a number of equal-sized blocks called \_\_\_\_\_\_\_\_\_\_\_\_.  
    (a) Cache directory (b) RAM (c) Block frames

(d) Segments

1. Which one of the following can process a succession of subtasks with a linear precedence graph?  
    (a) Pipeline (b) Parallel processing(c) Linear pipeline

(d) Prefetching

1. The number of results that can be completed by a pipeline per unit time is called its\_\_\_\_\_\_.  
    (a) Throughput (b) Efficiency

(c) Speedup (d) Performance

1. A \_\_\_\_\_\_\_ may assume only one functional configuration at a time.  
    (a) Dynamic pipeline (b) Static pipeline

(c) Multifunction pipeline (d) Processor pipeline

1. A\_\_\_\_\_\_\_\_processors permits several functional configurations to exist simultaneously.  
    (a) Dynamic pipeline (b) Static pipeline

(c) Multifunction pipeline (d) Processor pipeline

1. Which one is the average number of words accessed per second?   
    (a) Throughput (b) Efficiency

(c) Speedup (d) Memory bandwidth

1. Which is the set of rules that determine the module number and the address of the element within each module?  
    (a) Throughput (b) Storage scheme

(c) Speedup (d) Memory bandwidth  
/

1. Which one adds two input numbers and to produce one output number?  
    (a) Carry propagation adder (b) Carry Drop Adder

(c) Both a& b (d) Carry-save adder

1. Which one receives three input numbers and output two numbers?  
    (a) Carry propagation adder (b) Carry Drop Adder

(c) Both a& b (d) Carry-save adder

1. A \_\_\_\_\_\_\_ is used to hold the block of data fetched from the memory.  
    (a) Data buffer (b) FLR

(c) High-speed data register (d) Cache memory

1. \_\_\_\_\_\_ are used to hold operands and intermediate results.  
    (a) Data buffer (b) FLR

(c) High-speed data registers (d) Cache memory

1. \_\_\_\_\_\_\_ are two-dimensional pipelines with multiple data-flow streams for high-level arithmetic computations.  
    (a) Vector pipelines (b) Array pipelines

(c) Scalar pipelines (d) System pipelines

1. \_\_\_\_\_\_\_\_\_ are caused by illegal operation codes found in instructions, which can be detected during the decoding stage.  
    (a) Precise interrupts (b) Imprecise interrupts

(c) Software interrupts (d) Hardware interrupts

1. \_\_\_\_\_\_\_\_ Interrupt is caused by defaults from storage, address, and execution functions.  
    (a) Precise interrupts (b) Imprecise interrupts

(c) Software interrupts (d) Hardware interrupts

1. Which one is refers to a “short-circuit” technique for replacing unnecessary memory accesses by register-to-register transfers in a sequence of fetch-arithmetic-store operations?  
    (a) Internal forwarding (b) Register tagging  
    (c) Store-fetch forwarding (d) Store-store overwriting
2. Which refers to the use of tagged registers, buffers , and reservation stations for exploiting concurrent activities among multiple arithmetic units?  
    (a) Internal forwarding (b) Register tagging  
    (c) Store-fetch forwarding (d) Store-store overwriting
3. A latency sequence that repeats itself is called a \_\_\_\_\_\_\_\_\_\_\_\_\_.  
    (a) Latency cycle (b) Control strategy

(c) Greedy strategy (d) Latency control

1. The procedure to choose a latency sequence is called a \_\_\_\_\_\_\_\_\_.  
    (a) Latency cycle (b) Control strategy

(c) Greedy strategy (d) Latency control

1. A \_\_\_\_\_\_\_\_\_\_\_ is a cycle with only one latency.   
    (a) Latency cycle (b) Control strategy

(c) Greedy strategy (d) Constant Latency cycle

1. The \_\_\_\_\_\_\_\_\_\_\_\_\_ is needed to determine the termination of a vector instruction.  
    (a) Vector length (b) Operation code  
    (c) Address offset (d) Data address
2. Which one of the following contains a set of vector instructions with a precedence relation determined only by data dependencies?  
    (a) IPU (b) Parallel languages   
    (c) HLL (d) Task system
3. A\_\_\_\_\_\_\_\_\_ has the capability of detecting parallelism in serially coded Fortran Programs.  
    (a) Fortran vectorizer (b) Fortran compiler   
    (c) Fortran scheduler (d) Fortran Interpreter
4. Which one of the following is a synchronous array of parallel processors?.  
    (a) Scalar (b) Data   
    (c) Vector (d) Unit wise
5. Which processor consists of multiple processing elements under the supervision of one control unit?  
    (a) Scalar processors (b) Pipeline processors   
    (c) Array processors (d) Uni Processors
6. An array processor can handle\_\_\_\_\_\_\_\_\_\_\_\_  
    (a) SIMD (b) MIMD  
    (c) SISD (d) MISD
7. \_\_\_\_\_\_\_\_\_\_\_\_ communication is needed for establishing communication paths synchronously for either a data manipulating function or for a data instruction broadcast?  
    (a) Synchronous (b) Asynchronous

(c) Static (d) Dynamic

1. \_\_\_\_\_\_\_\_\_\_\_ communication is needed for multiprocessing in which connection requests are issued dynamically.  
    (a) Synchronous (b) Asynchronous

(c) Static (d) Dynamic

1. In \_\_\_\_\_\_\_\_\_\_, a physical path is actually established between a source and a destination.  
    (a) Synchronous (b) Message

(c) Circuit (d) Packet

1. In \_\_\_\_\_\_\_\_\_\_\_, data is put in a packet and routed through the interconnection network without establishing a physical connection path .  
    (a) Synchronous (b) Message

(c) Circuit (d) Packet

1. Which one of the following is the one-dimensional topology?  
    (a) Linear array (b) Systolic array   
    (c) Ring (d) Bus
2. Which one of the following are the Two-dimensional topologies?  
    (a) Linear array (b) Systolic array   
    (c) Ring (d) Both b & c
3. Which one of the following are the Three-dimensional topologies?

(a) Completely connected chordal ring (b) 3 cube  
 (c ) 3-cube-connected-cycle (d ) All of the above

1. Which one of the following is a switching network with N input selectors and N output selectors?  
    (a) Single-stage network (b) Multistage   
    (c) Static network (d) Dynamic
2. The single-stage network is also called a \_\_\_\_\_\_\_\_\_.  
    (a) Recirculating network (b) Multistage   
    (c) Static network (d) Dynamic
3. Multistage networks can be \_\_\_\_\_\_\_\_\_\_.  
    (a) One-sided (b) Two-sided   
    (c) Three sided (d) Four sided
4. Which of the following are the examples of blocking network?  
    (a) Data manipulator (b) Omega   
    (c) Flip (d) All of the above
5. A network which can handle all possible connections without blocking is called a \_\_\_\_\_\_\_\_\_\_\_\_\_.   
    (a) Nonblocking (b) Rearrangeable   
    (c) Blocking (d) Multistage
6. The network can perform various types of permutations\_\_\_\_\_\_\_\_\_\_\_\_\_.  
    (a) Shift (b) Flip   
    (c) Merge (d) All of the above
7. A \_\_\_\_\_\_\_\_\_\_is a vertical column of bit cells of all the words at the same position.  
    (a) Bit slice (b) Byte slice   
    (c) Status information (d) Information
8. Which of the following register is used to hold the key operand being searched for or being compared with?  
    (a) Masking register (b) Indicator register   
    (c) Comparand register (d) Temporary register
9. In a \_\_\_\_\_\_\_ associative processor, the comparison logic is associated with each bit cell of every word and the logical decision is available at the output of every word.  
    (a) Word-organized (b) Distributed logic

(c) Partially distributed logic (d) Centralised logic

1. Which of the following system consists of several autonomous computers which may or may not communicate with each other?  
    (a) Multiprocessor (b) Multiple computer

(c) Logical (d) Physical

1. A \_\_\_\_\_\_\_ is controlled by one operating system which provides interaction between processors and their programs.  
    (a) Multiprocessor (b) Multiple computer

(c) Logical (d) Physical

1. Which of the following architectural model communicate through a shared main memory?  
    (a) Tightly coupled (b) Loosely coupled

(c) Multiple (d) Logical

1. The\_\_\_\_\_\_\_ is a processor that is responsible for mapping addresses and routing data between Slocals.  
    (a) Physical (b) Cluster

(c) Kmap (d) Logical

1. In the \_\_\_\_\_\_\_\_ , requests are simply honored in the order received.  
    (a) FCFS (b) Fixed time slice

(c) Static priority (d) Dynamic priority

1. At most one process can be in a critical section at a time \_\_\_\_\_\_\_\_\_\_\_\_\_\_.  
    (a) Mutual exclusion (b) Termination

(c) Fair scheduling (d) All of the above

1. Which one is the division of an algorithm into procedures, modules and processes?  
    (a) Histogramming (b) Assignment

(c) Both a & b (d) Partitioning

1. If the interruption and subsequent resumption of the process in execution is permitted before its termination, \_\_\_\_\_\_\_\_\_\_ is used.  
    (a) Preemptive scheduling (b) Nonpreemptive scheduling

(c) Preemptive-resume priority scheduling (d) Priority Scheduling

1. If interruption before process completion is not permitted, \_\_\_\_\_\_\_ is applied.  
    (a) Preemptive scheduling (b) Nonpreemptive scheduling

(c) Preemptive-resume priority scheduling (d) Priority Scheduling

1. In a \_\_\_\_\_\_\_\_\_\_\_\_\_, the running task is interrupted and the new task runs on that processor.  
    (a) Preemptive scheduling (b) Nonpreemptive scheduling

(c) Preemptive-resume priority scheduling (d) Preemptive priority scheduling

1. Which one is defined as the number of process sets processed per unit of time?  
    (a) Throughput (b) Efficiency

(c) Speedup (d) Memory bandwidth

1. A \_\_\_\_\_\_\_\_\_ is one in which each node has at most one successor, with the exception of the root or terminal node, which has no successors.  
    (a) Rooted tree (b) Direct acyclic graph

(c) Tree (d) ETC

1. The processors in the Kmap are the \_\_\_\_\_\_\_\_\_\_  
    (a) Kbus (b) Linc

(c) Pmap (d) All of the above

1. The \_\_\_\_\_\_\_\_ is the bus controller which arbitrates requests to the map bus.  
    (a) Kbus (b) Linc

(c) Pmap (d) All of the above

1. Which of the following are the examples of tightly coupled multiprocessor system?  
    (a) Cyber-170 (b) Honeywell 60/66

(c) PDP-10 (d) All of the above

1. The \_\_\_\_\_\_\_ provides the address mapping, communication, and synchronization functions within the system.  
    (a) Kbus (b) Linc

(c) Pmap (d) Kmap

1. The \_\_\_\_\_\_\_\_\_\_\_ algorithm gives the highest priority to the requesting device that has not used the bus for the longest interval.  
    (a) LRU (b) FCFS

(c) RDC (d) FTS

1. In the \_\_\_\_\_\_\_\_\_\_, no central controller exists, and the bus-grant line is connected from the last device back to the first in a closed loop.  
    (a) LRU (b) FCFS

(c) RDC (d) FTS

1. \_\_\_\_\_\_\_\_\_\_\_\_ are made during compile time and remain the same throughout the lifetime of the process.  
    (a) Static tags (b) Dynamic tags   
    (c) Cacheable (d) Non-cacheable
2. \_\_\_\_\_\_\_\_\_ are made during the execution of cooperating processes.  
    (a) Static tags (b) Dynamic tags   
    (c) Cacheable (d) Non-cacheable

**ANSWER KEYS**

1. (a) – Parallel processing
2. (d) – All of the above
3. (b) - System throughput
4. (d) - Bandwidth
5. (a) – Multiprogramming
6. (a) - Temporal parallelism
7. (b) - Spatial paralleliem
8. (c) - Asynchronous Parallelism
9. (a) – Array processor
10. (a) – Control flow computers
11. (c) - Stream
12. (d) - Instruction stream
13. (b) - Maximum parallelism degree
14. (b) - Data stream
15. (a) - Flynn’s classification
16. (b) - Feng’s scheme
17. (c) - Handler’s classification
18. (a) - Multiprocessor system
19. (a) – Centralized
20. (a) – Processing elements
21. (c) - RAM
22. (b) – SAM
23. (a) – DASDs
24. (d) - All of the above
25. (c) - Low-order interleaving
26. (a) – Temporal locality
27. (b) – Spatial locality
28. (a) – Translation Look aside buffer
29. (d) - Segment
30. (a) – Memory compaction
31. (b) - Page-fault
32. (a) – Local
33. (b) - Global
34. (b) – Demand prefetching
35. (a) – Demand fetching
36. (d) – All of the above
37. (d) – All of the above
38. (a) – Global LRU
39. (b) - Prefetching
40. (c) - Block frames
41. (c) - Linear pipeline
42. (a) – Throughput
43. (b) - Static pipeline
44. (a) - Dynamic pipeline
45. (d) - Memory bandwidth
46. (b) - Storage scheme
47. (a) - Carry Propagation Adder
48. (d) Carry-save adder
49. (a) - Data buffer
50. (c) - High-speed data registers
51. (b) - Array pipelines
52. (a) - Precise interrupts
53. (b) - Imprecise interrupts
54. (a) - Internal forwarding
55. (b) - Register tagging
56. (a) – Latency cycle
57. (b) – Control strategy
58. (d) - Constant Latency cycle
59. (a) - Vector length
60. (d) – Task system
61. (a) - Fortran vectorizer
62. (c) - Vector
63. (c) - Array processors
64. (a) SIMD
65. (a) – Synchronous
66. (b) - Asynchronous
67. (c) - Circuit
68. (d) – Packet
69. (a ) - Linear array
70. (d) - Both b & c
71. (d) – All of the above
72. (a) Single-stage network
73. (a) Recirculating network
74. (a) – One sided
75. (d) – All of the above
76. (a) - Nonblocking
77. (d) – All of the above
78. (a) - Bit slice
79. (c) - Comparand register
80. (a) – Word-organized
81. (b) – Multiple computer
82. (a) – Multiprocessor
83. (a) – Tightly coupled
84. (c) – Kmap
85. (a) – FCFS
86. (a) – Mutual exclusion
87. (d) - Partitioning
88. (a) – Preemptive scheduling
89. (b) - NonPreemptive scheduling
90. (d) – Preemptive priority scheduling
91. (a) – Thoughput
92. (a) – Rooted tree
93. (d) – All of the above
94. (a) – Kbus
95. (d) – All of the above
96. (d) – Kmap
97. (a) - LRU
98. (c) - RDC
99. (a) – Static tags
100. (b) – Dynamic tags