**M.Sc. Sem-IV (CS)**

**Paper-IV (Parallel Computing)**

**Unit-II**

1. The gather operation is exactly the inverse of the

**A. Scatter operation**

B. Broadcast operation

C. Prefix Sum

D. Reduction operation

Ans: A

2. which of the following is not an example of explorative decomposition ?

A. queens problem

B. 15 puzzal problem

C. tic tac toe

**D. quick sort**

Ans: D

3. which of the following is not an parallel algorithm model ?

A. data parallel model

B. task graph model

**C. task model**

D. work pool model

Ans: C

4. Task dependency graph is

A. directed

B. undirected

**C. directed acyclic**

D. undirected acyclic

Ans: C

5. All-to-all personalized communication is also known as

**A. Total Exchange**

B. Personal Message

C. Scatter

D. Gather

Ans: A

6. Functional Decomposition:

A. Partitioning in that the data associated with a problem is decompose(D) Each parallel task then works on a portion of the dat(A)

**B. Partitioning in that, the focus is on the computation that is to be performed rather than on the data manipulated by the computation. The problem is decomposed according to the work that must be done. Each task then performs a portion of the overall work.**

C. It is the time it takes to send a minimal (0 byte) message from point A to point (B)

D. None of these

Ans: B

7. The gather operation is exactly the \_\_\_\_\_\_\_\_\_\_\_ of the scatter operation

**A. Inverse**

B. Reverse

C. Multiple

D. Same

Ans: A

8. By which way, scatter operation is different than broadcast

**A. Message size**

B. Number of nodes

C. data

D. address

Ans: A

9. Which is the type of Microcomputer Memory?

**A. Address**

**B. Contents**

C. data

D. program

Ans: A & B

10. Which of the following is true about parallel computing performance?

**A. Computations use multiple processors**

**B. There is an increase in speed**

C. Computations use single processors

D. decrease in size

Ans: A & B

11. The primary forms of data exchange between parallel tasks are\_\_\_\_\_\_\_\_\_.

**A. Accessing a shared data space**

**B. Exchanging messages.**

C. Accessing a address space

D. block data

Ans: A & B

12. Mappings are determined by

**A. task dependency**

B. Program dependency

**C. task interaction graphs**

D. load balancing

Ans: A & C

13. Speculative Decomposition consist of

**A. conservative approaches**

**B. optimistic approaches**

C. Optimization problems

D. Divide and Conquer strategy

Ans: A & B

14. task characteristics include

**A. Task generation**

**B. Task sizes**

C. Task address

D. Task Data

Ans: A & B

15. Decomposition Techniques are

**A. recursive decomposition**

B. Address decomposition

**C. data decomposition**

D. process decomposition

Ans: A & C

16. Type of microcomputer memory is

**A. processor memory**

**B. primary memory**

C. secondary memory

D. program memory

Ans: A & B

17. Group communication operations are built using point-to-point messaging primitives.

**A. True**

B. False

Ans: A

18. Is scatter operation is same as Broadcast?

A. True

**B. False**

Ans: B

19. The dual of one-to-all broadcast is all-to-one reduction. True or False?

A. True

B. False

Ans: B

20. Communicating a message of size m over an uncongested network takes time ts + tmw.

**A. True**

B. False

Ans: A

21. Is All to all Bradcasting is same as All to all personalized communication?

A. True

**B. False**

Ans: B

22. In All-to-All Broadcast each processor is the source as well as destination.

**A. True**

B. False

Ans: A

23. Decomposition into a large number of tasks results in coarse-grained decomposition.

A. True

**B. False**

Ans: B

24. In All-to-All Personalized Communication Each node has a distinct message of size m for every other node.

**A. True**

B. False

Ans: A

25. Match the pair

1. Task Interaction A. control dependencies.

2. task dependency B. data decomposition

3. Appropriate mapping of tasks to processes C. data dependencies

4. Decomposition Techniques Commonly used techniques D. the parallel performance of an algorithm

Ans: 1-C, 2-A, 3-D, 4-B

26. Match the Following Pair

1. Recursive Decomposition A. a-priori. Typical

matrix operations

2. Exploratory Decomposition B. divide-and conquer

strategy

3. Speculative Decomposition C. hand-in hand

with its execution.

4. Task Generation D. discrete event

simulation

Ans: 1-B, 2-C, 3-D, 4-A

27. In the scatter operation, a single node sends a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A. Different message of size m to every other node

B. Different message of different size m to every other node

**C. Unique message of size m to every other node**

D. All of Above

Ans: C

28. The Prefix Sum Operation can be implemented using the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**A. All-to-all broadcast kernel**

B. All-to-one broadcast kernel

C. One-to-all broadcast Kernel

D. Scatter Kernel

Ans: A .

29. In the gather operation, a single node collects a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**A. Unique message from each node**

B. Unique message from only one node

C. Different message from each node

D. None of Above

Ans: A

30. 8 bit information can be stored in\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A. 2 Registers

B. 4 Registers

C. 6 Registers

**D. 8 Registers**

Ans: D

31. The result of prefix expression \* / b + – d a c d, where a = 3, b = 6, c = 1, d = 5 is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A. 0

B. 5

C. 10

D. 8

Ans: C

32. Shift register that performs a circular shift is called\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. A. Invalid Counter

B. Valid Counter

C. Ring

D. Undefined

Ans: C

33. A simple application of exploratory decomposition is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. A. The solution to a 15 puzzle

B. The solution to 20 puzzle

C. The solution to any puzzle

D. None of Above

Ans: A

34. Parallel computing uses\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_execution. A. sequential

B. unique

C. simultaneous

D. None of above

Ans: C