VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY (VSSUT), ODISHA

Mid Semester Examination - February 2019

Course Name: **B. Tech.** Semester: **8th**

Branch Name: **CSE and IT**

Full Marks: **20** Time: **2 Hours**

Subject Name: **Parallel and Distributed Systems (CS15-027)**

Answer **All** Questions.

The figures in the right hand margin indicate Marks. *Symbols carry usual meaning.*

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1. Answer All Questions. $1 \times 5 = 5$

   (a) Differentiate between parallel and distributed systems. CO1

   (b) What does it mean to say that a parallel algorithm is cost optimal? CO1

   (c) Differentiate between pipelining and parallelism. CO1

   (d) Compare merits and demerits of Logical clock and Vector clock. CO4

   (e) What is the basic difference in Lamport and Mellian-Smith's algorithm over Berkeley algorithm in connection of internal clock synchronization? CO4

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2. Explain the process of multiplying a matrix with a vector with a numerical example. CO1 5

OR

Consider the execution of a conditional statement as follows. CO1 5

if($B == 0$)
$C = A$;
else
$C = \frac{A}{B}$;

Show the execution of the above conditional statement on an SIMD computer with four processors. Assume that the initial values of A in these processors are 5, -1, 1 and 0, respectively and the initial values of B in these processors are 0, 2, 1 and 0, respectively. Show the drawbacks of SIMD architecture in this context. Propose a solution to resolve these drawbacks.

3. Consider Peterson's algorithm for leader election on a unidirectional ring of 16 processes, 0 through 15. Describe an initial configuration of the ring so that a leader is elected in the third round. CO4 5

OR

Of the four PRAM models (EREW, CREW, ERCW and CRCW), which model is the most powerful? and Why? Explain. CO1 5

4. Suggest the global ordering of events a-j in the communication between two processes P and Q as shown below. CO4 5

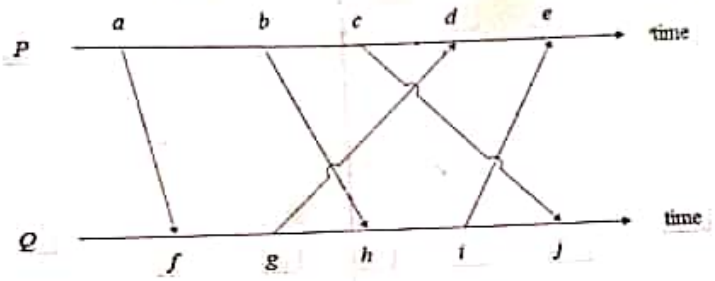

Figure 1: A Space-Time Diagram

OR

Calculate the vector clock values of the events a-j in the above communication. Show that (d, h) are concurrent events but f is causally ordered before e. CO4 5

MRKSKP

VEER SURENDRA SAI UNIVERSITY OF TECHNILIGY (VSSUT), ODISHA
Mid Semester Examination May - 2019

COURSE NAME: B. Tech | SEMESTER: 8th

BRANCH NAME: CSE

FULL MARKS: **20** | TIME: **2 Hours**

SUBJECT NAME: MOBILE COMPUTING

Answer **All** Questions.

The figures in the right hand margin indicate Marks. *Symbols carry usual meaning.*

Q1. Answer all Questions. [1 × 5]

a) What is logical address and explain its all types? - CO1
b) Define the term synchronization in terms of networking. - CO3
c) What is tunneling in networking? - CO1
d) Which and why multiplexing technique needed in GSM? - CO4
e) What are the basic functions performed by GPRS? - CO4

Q2. [5]

a) Explain the features ASK, FSK, BPSK with suitable diagrams. - CO1

OR

b) What are the advantages and disadvantages of using a wireless transmission over traditional wired communication? - CO1

Q3. Explain with diagram [5]

a) GPRS - CO4
b) DHCP - CO1

OR

b) Explain the message transfer mechanism between mobile station and base station. - CO2

Q4. [5]

a) Describe the multiplexing technique and explain CDMA. - CO4

OR

b) Describe amplitude modulation (AM) and frequency modulation (FM). - CO1