Name: Enrolment no:	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

Online End Semester Examination, December 2020

Course: Distributed Computing **Semester: VII**

Program: B.Tech. CSE. CCVT/OSSOS/CSF/MFT/IT Infra/BAO/BFSI/GG **Time: 03 hrs.**

Course Code: CSEG4004 **Max. Marks: 100**

SECTION A

1. Each Question carries 5 Marks
2. Instruction: Complete the statement / Select the correct answer(s)

S. No.	Question	CO
Q 1	Write **FULL FORMS** of the following: **(a)** MMOG: _____ **(b)** NUMA : _____	CO1
Q 2	Based on Number of Instructions & Data Stream Distributed Systems can be classified as **SISD, SIMD, …….. and ……..**	CO1
Q 3	RPC provides a (an) _____ __ __ __ on the client side, a separate one for each remote procedure. **(a)** Stub **(b)** Identifier **(c)** Name **(d)** process identifier	CO2
Q 4	A socket is as an endpoint for communication in client-server systems. The **Socket 161.25.19.8:1625** refers to **(a) Port** 1625 on **host** 161.25.19.8 **(b) Port** 80 on **host 161.25.19.8:1625** **(c) Host** 1625 on Port 161.25.19.8 **(d) Port** 161on **host 25.19.8:1625**	CO2
Q 5	Full form of first two in **PAID** term used while Dealing with Deadlocks are (i) Deadlock **Prevention** and (ii) Deadlock **Avoidance** **What are other two terms?** **(a) I**_____ Deadlocks **(b)** Deadlock **D**_____	CO3
Q 6	In _____ algorithm, the processes assigned to the processors at the **compile time** according to the performance of the nodes: **(a)** Static Load Balancing **(b)** Dynamic Load Balancing **(c)** Load estimation **(d)** None of the above	CO4

SECTION B

1. Each question carries 10 marks
2. Instruction: Write short / brief notes

Q 7	Differentiate between the following: **(a)** Tightly Coupled System **v/s** Loosely Coupled System **(b)** UMA **v/s** NUMA	**CO1**
Q 8	Justify the need of Inter-Process-Communication in a distributed environment. Discuss different approaches of IPC.	**CO2**
Q 9	Differentiate between Physical Clock and Logical Clock. Explain the '***Happens Before Relation***' of Lamport's' Logical Clocks with the help of suitable example. **OR** Define Distributed deadlock. Discuss the Strategies for handling deadlocks in distributed system.	**CO3**
Q 10	Explain Load-balancing approach with a suitable example. Discuss the Issues in Designing a Load Balancing Algorithm. **OR** Discuss the methods to achieve Process Management in a Distributed Environment. Elaborate the Steps involved in process migration	**CO4**
Q 11	Write short notes on the following **(<u>Any TWO</u>)** **(a)** Issues with DDBMS **(b)** Parallel DBMS **(c)** Grid Computing **(d)** Service Oriented Architecture (SOA)	**CO5**

Section C

1. **Each Question carries 20 Marks.**
2. **Attempt any One Question out of three options.**
3. **It is compulsory to attempt all parts of same option.**
4. **Instruction: Write long answer.**

Q 12	**(a)** Describe desirable Features of Global Scheduling Algorithm **(b)** Differentiate between Deterministic and Probabilistic load balancing. **OR** **(a)** Elaborate different Threads scheduling policies. **(b)** Justify how User- level is different from kernel-level thread implementation **OR** **(a)** Describe different Location policies to select the destination node where the process can be executed. **(b)** Differentiate between Cooperative Vs non-cooperative dynamic scheduling algorithm	**CO4**