Roll No											

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING
MID TERM EXAMINATION - MAY 2023

Semester : Semester VI - 2020
Course Code : CSE2052
Course Name : Sem VI - CSE2052 - Distributed System
Program : CEI&CSE

Date : 18-MAY-2023
Time : 10.30AM - 12.00PM
Max Marks : 60
Weightage : 30%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS **(5 X 2 = 10M)**

1. Mention the criteria for Quality of service.
(CO1) [Knowledge]
2. Define virtualization
(CO2) [Knowledge]
3. What are the characteristics of Inter-process communication?
(CO1,CO2) [Knowledge]
4. Define Transparency in distributed systems.
(CO1) [Knowledge]
5. Mention the types of communication in distributed systems.
(CO2) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS **(4 X 5 = 20M)**

6. Consider any parallel program that gets executed by different persons in different computers. Will this constitute as concurrency? Explain Concurrency in detail
(CO2,CO1) [Comprehension]

7. A service is implemented by several servers. Explain why resources might be transferred between them. Would it be satisfactory for clients to multicast all requests to the group of servers as a way of achieving mobility transparency for clients?

(CO2) [Comprehension]

8. List the types of local resources that are vulnerable to an attack by an untrusted program that is downloaded from a remote site and run in a local computer.

(CO2,CO1) [Comprehension]

9. Differentiate direct and indirect communication. Explain space and time uncoupling in indirect communication with suitable examples.

(CO1) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS **(2 X 15 = 30M)**

10. Consider the two communication services for use in asynchronous distributed systems. In service A, messages may be lost, duplicated or delayed and checksums apply only to headers. In service B, messages may be lost. delayed or delivered too fast for the recipient to handle them, but those that are delivered arrive order and with the correct contents. Describe the classes of failure exhibited by each service. Classify their failures according to their effect on the properties of validity and integrity. Can service B be described as a reliable communication service?

(CO1,CO2) [Application]

11. Consider two communication services for use in asynchronous distributed systems. In service A, messages may be lost, duplicated or delayed and checksums apply only to headers. In service B, messages may be lost. delayed or delivered too fast for the recipient to handle them, but those that are delivered arrive order and with the correct contents.
Describe the classes of failure exhibited by each service. Classify their failures according to their effect on the properties of validity and integrity. Can service B be described as a reliable communication service?

(CO2,CO1) [Application]