**Q. 1      Answer the Following Questions -**

1.      Explain Concurrent processes

2.      Explain Semaphores

3.      What is dinning philospher problem? Explain the best solution using semaphore.

4.      What is deadlock define it.

5.      Write conditions which leads to deadlock.

6.      How to deal with deadlock?

7.      Write the difference between process and thread.

8.      Write the difference between multitasking and multithreading.

9.      What is thread? How many types of threads are there? Explain them.

10.     What is Inter-process communication? How many types of inter-process communication are there?

**Q. 2      Fill in the blanks**

1.      Each process has at least _____ thread of execution.

2.      A thread is also known as _____ process

3.      The semaphore whose value is either zero or one is known as _____ semaphore.

4.      The semaphore whose value is more then one os known as _____ semaphore.

5.      _____ is a process synchronization tool that protects any resource such as global shared memory that needs to be accessed and updated by many processes.

6.      A section of code in the process where the shared data is accessed and updated is known as _____.

7.      In _____ , a global variable is used with the keyword shared and accessed within a CS only.

8.      When a process does not get access to the resource , it loops continually for the resource and wastes CPU cycles, It is known as _____

9.      When  every process is waiting for the other to execute and no process is proceeding, the situation is known as _____.

**Q. 3      State True Or False**

1.      Wait semaphore is denoted by P(S) .

2.      In Message passing , when receiver is not ready to receive sender's signal, sender will run with another process.

3.      The resource should be free while requesting, otherwise the requesting process must

wait. This situation is called exit criteria.

4. When all the processes are holding some resources and waiting for other resources , a deadlock may occur.

5. Deadlock prevention is not always possible.

6. A thread is heavy weight process.

7. Message passing method is used for process communication.

8. In Thread switching, thread need to interact with operating system.

9. Multiple thread processes use fewer resources.

10. One thread can read, write or change another thread's data.


**Note: Q2 , Q3 are coumplsory for all. You have to attempt Q-1 in following sequence -**

| Roll No | Question Numbers from both section |
|---|---|
| A1 to A10, B1 to B10 & C1 to  C10 | 1,3,10 |
| A11 to A20, B11 to B20 & C11 to  C20 | 2,3,10 |
| A21 to A30, B21 to B30 & C21 to  C30 | 3,2,10 |
| A31 to A40, B31 to B40 & C31 to  C40 | 4,3,10 |
| A41 to A50, B41 to B50 & C41 to  C50 | 5,3,10 |
| A51 to A60, B51 to B60 & C51 to  C60 | 6,10,3 |
| A61 to A70, B61 to B70 & C61 to  C70 | 7,10,3 |
| A71 to A80, B71 to B80 & C71 to  C80 | 8,10,3 |
| A81 to A90, B81 to B90 & C81 to  C90 | 9,10,3 |
| A91 Onwards , B91 Onwards & C91 Onwards | 10,2,3 |