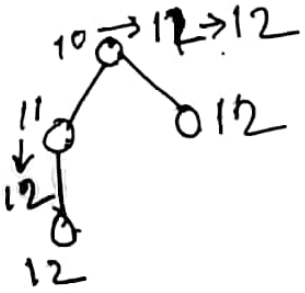
MARKS:20	CSE3201	CT1	Time :25mins

1. Do you think it is necessary for the OS to provide user mode and kernel mode of operation separately? If so why? How does OS facilitate this duel mode of operation? [5]
2. Define kernel. Discuss the advantages and disadvantages of both monolithic kernel and micro kernel. [5]
3. Describe process states with process state diagram. [4]
4. Write down the output of the following code: [6]

```
int main(int argc, char *argv[]){
   int a =10;
   printf("%d\n", a++);
   int id1 = fork();
   printf("%d\n", a++);
   int id2 = fork();
   printf("%d\n", a);
}
```



Marks: 20	CT2	CSE 3201	Time: 25

1. CPU scheduling decision takes place under which four conditions? How these conditions defines if a system is preemptive or non-preemptive [5]
2. Consider the following table: [5x3 = 15]

Process	Arrival Time	Burst Time
P0	0	3 ~~2 1~~ 1
P1	1	5 3 1
P2	2	2 ~~1 0~~
P3	2	~~3~~ 1
P4	4	4 2
P5	5	2 ~~1 0~~

~~P0~~, ~~P1~~, ~~P2~~, ~~P3~~, ~~P0~~, ~~P4~~, ~~P1~~, ~~P5~~, ~~P3~~, ~~P4~~ P1

Now Evaluate - Turn Around Time, Waiting Time, Response Time, Average response time and Average Turnaround time using the following scheduling algorithm -

i) FCFS
ii) Shortest Remaining Job First
iii) Round Robin