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Pseudocode

1. Start
2. Set n=0, sum=0
3. Read n
4. If n <0,
   4.1   Print "Valid"
5. Else
   5.1   Print "Invalid"
   5.2   Go step 3
6. End if
7. While (n>0)
   7.1   sum=sum+(n%10)
   7.2   n=n/10
8. End while
9. Display sum
10. If sum%2=0
    10.1 Print "This is even number."
11. Else
    11.1 Print "This is odd number."
12. End if
13. If sum%4=0 and sum%5=0
    13.1 Print "This is multiple of 4 and multiple of 5."
14. else if sum% 4=0
    14.1 Print "This is multiple of 4."
15. Else if sum% 5=0
    15.1 Print "This is multiple of 5."

16. End if
17. End

Flowchart

```
                    ┌─────────┐
                   (  START   )
                    └────┬────┘
                         ↓
                  ┌──────────────┐
                  │  n=0         │
                  │  sum=0       │
                  └──────┬───────┘
                         ↓
                  ┌──────────────┐
                 /   Read n      /
                 └──────┬───────┘
                        ↓
                      ◇ n>0? ◇ ──False──→ / Print invalid /
                        │ True
                        ↓
                 / Print valid /
                        ↓
                     ◇ n>0? ◇ ──False──→ / Display sum /
                        │ True                    ↓
                        ↓                        (1)
              ┌──────────────────┐
              │ sum=sum+(n%10)   │
              └────────┬─────────┘
                       ↓
                / n=n/10 /
```

```
                 (1)
                  ↓
              ◇ sum%2==0 ◇ ──False──→ / Print "This is odd number /
                  │ True
                  ↓
        / Print "This is even number /
                  ↓
        ◇ sum%4==0&& sum%5==0? ◇ ──True──→ / Print "This is multiple of 4 and 5 /
                  │ False
                  ↓
            ◇ sum%4==0? ◇ ──True──→ / Print "This is multiple of 4 /
                  │ False
                  ↓
            ◇ sum%5==0? ◇ ──True──→ / Print "This is multiple of 5 /
                  │
                  ↓
                ( End )
```