**CSE 429, Compiler Design, Fall 2021**

**Class test: 01, Full marks: 10**

**Writing Time: 15 minute, Uploading time: 5 minutes**

1. Consider the following fragment of code: [10]
2. #include <stdio.h>
3. int main() {
4. int year;
5. printf("Enter a year: ");
6. scanf("%d", &year);
7. if (year % 400 == 0) {
8. printf("%d is a leap year.", year);
9. }
10. else if (year % 100 == 0) {
11. printf("%d is not a leap year.", year);
12. }
13. else if (year % 4 == 0) {
14. printf("%d is a leap year.", year);
15. }
16. else {
17. printf("%d is not a leap year.", year);
18. }
19. return 0;
20. }

Find out the all the patterns that are present in the above stated code. Also, write at least two formal definitions (Regular Expressions) of those patterns of your own choice.