OOPS CONCEPTS QUESTIONS

**Formulas:**

* Area of triangle A=
* Perimeter of triangle P=
* Area of Equilateral a triangle A=
* Perimeter of Equilateral a triangle p=3a
* Area of Cuboid A=) or 6l2
* Perimeter of Cuboid P=4 (l+ b+ h)
* Area right circular cylinder A=
* Perimeter right circular cylinder P=

**If condition:**

* To find the given number is ever or odd.
* To find the biggest of two numbers.
* To find the smallest of two numbers.
* To find the given number is positive or negative.
* To find the given age is eligible for vote or not.
* To find profit or loss and how far profit or loss.

**If else ladder:**

* To find biggest of three number.
* To find the given number is positive or negative or neutral.
* To do Arithmetic function.
* 1 (or) + => Addison
* 2 (or)- =>Subtraction
* 3(or)\* =>Multiplication
* 4(or)/ =>Division
* 5(or)% =>Remainder
* To find student grade for subject.
* To find the entered character is vowel or Consonant.
* Write a program to calculate and print the electricity bill of a given customer. The customer id, name and unit consumed by the user should take from the keyboard and display the total amount to pay to the customer.

|  |  |
| --- | --- |
| **Unit** | **Charge per unit** |
| Up to 199 | @1.20 |
| 200 to 400 | @1.50 |
| 400 t0 800 | @1.80 |
| 600 and above | @2.00 |

If bill exceed Rs.400 then a surcharge of 15% will be charged and minimum bill should be Rs.100

**Nested if:**

* Calculate sales commission

|  |  |
| --- | --- |
| **Sales** | **Commission** |
| Up to 10000 | 0% |
| 10000 t0 20000 | 5% |
| 20000 t0 50000 | 10% |
| 50000 t0 100000 | 15% |
| 100000 and above | 20% + 500(bonus) |

* Calculate gross pay for an employee

|  |  |  |
| --- | --- | --- |
| **Basic salary** | **HRA** | **DA** |
| Up to 10000 | 20% | 80% |
| 10000 to 20000 | 25% | 90% |
| 20000 and above | 30% | 95% |

Gross pay = basic salary + HRA + DA

* Calculate tax for purchase amount

|  |  |
| --- | --- |
| **Purchasing amount** | **Tax per amount** |
| Up to 10000 | 0% |
| 10000 to 20000 | 10% |
| 20000 and above | 20% |

**Switch case:**

* Program to print the day of the week.
* Total no of days in a month.
* Check whether an alphabet is vowel or consonant.
* Write a program for calculator function (add, sub, div, mul).

**Loops (while, do-while, for):**

1. Print natural numbers till n.
2. Print sum of odd number till n.
3. Find Factorial value for n.
4. Print current and previous Odd number till n.
5. Print current and previous even number till n.
6. Nth Multiplication table till m.
7. Reverse a number.
8. Reverse a string.
9. Check whether giver number is palindrome or not.
10. Check whether giver number is Armstrong or not.
11. Check whether given number is Adam or not.
12. Check whether given number is Perfect number or Not.
13. Print each character in string.
14. Convert given number from decimal to binary.
15. Convert given number from decimal to octal.
16. Convert given number from decimal to hexadecimal.
17. Convert given number from octal to hexadecimal.
18. Convert given number from hexadecimal to decimal.
19. Convert given number from hexadecimal to binary.
20. Check whether given number is Prime number or Not.
21. Fibonacci series.(0,1,1,2,3,5,8,13…..n)
22. Pell series .**p2=p0+2p1, p0=0, p1=1.** (0, 1, 2, 5, 12, 29….n).
23. Convert time,
24. Hour to sec.
25. Min to hour
26. Sec to min.
27. Count number of digits of a number.
28. Calculate sum of digits of a number.
29. Calculate product of digits of a number.
30. Swapping first and last digit of a number.
31. Find positive, negative, and zero for nth value.
32. Find highest common factor (HCF) for 2 numbers.
33. Find least common multiple (LCM) for 2 numbers.

**Pattern:**



**Array:**

* Find and print 3rd and 5th element in the array.
* Find and print the first and last element in the array.
* Change the 2nd number in the array to 50.
* Write a java program to find the index of an array element.
* Write a program for addition of two single dimensional arrays.
* Write a java program for arranging the number in the array in ascending order.
* Write a java program for arranging the number in the array in descending order.
* Find the 2nd smallest number in the array while in ascending order.
* Find the 2nd smallest number in the array while in descending order.
* Write a java program to print all the LEADERS in the array.

(NOTE: An Element is leader if it is greater than the entire element to its right side).

**Multidimensional array:**

* Write a program for Transpose matrix.
* Write a program for Matrix Multiplication.