**Lab III – SS – 22.11.2022**

**Regular – 23.11.2022**

1. Write a program to sum the series
   1. 12 /1 + 22 / 2 + 32 / 3+………. n2 /n.
   2. – x + x2 – x3 + x4 + …
   3. 1 + (1+2) + (1+2+3) + …
   4. 1 – x + x2 / 2! – x3 / 3! + …
2. Write a program that prompts the user to enter five words. If the length of any word is less than 6 characters, then it asks the user to enter it again. However, if the word is of 6 or more characters, then it displays it on the screen.
3. Write a program to calculate electricity bill based on following information

|  |  |
| --- | --- |
| Consumption Unit | Rate of charge |
| 0-150 | Rs 3 per Unit |
| 151-350 | Rs 100 plus Rs3.75 per Unit exceeding 150 units |
| 301-450 | Rs 250 plus Rs 4 per unit exceeding 350 units |
| 451-600 | Rs 300 plus Rs 4.25 per unit exceeding 450 units |
| Above 600 | Rs 400 plus Rs 5 per unit exceeding 600 units |

1. Write a program to calculate parking charges of a vehicle. Read the hours and minutes when the vehicle enters the parking lot. When the vehicle is leaving enter its leaving time. Calculate the difference between the two timings to calculate the number of hours and minutes for which the vehicle was parked. Finally calculate the charges based on following rules and then display the result on the screen.

|  |  |  |
| --- | --- | --- |
| Vehicle Name | Rate till 3 hours | Rate after 3 hours |
| Truck / bus | 20 | 30 |
| Car | 10 | 20 |
| Cycle/Motor cycle/Scooter | 5 | 10 |

1. Write a program that accepts the current date and date of birth of the user. Then calculate the age of the user and display it on the screen. Note that the date should be displayed in the following format specified as dd/mm/yy.
2. Write a program to read month of the year as an integer. Then display the name of the month.
3. Write a program to read a 5-digit number and then display the number in the following formats…for example, if the user entered 12345, the result should be

12345 1

2345 12

345 123

45 1234

5 12345

1. Write a simple python program the displays the following powers of 2, one per line:21, 22, 23, 24, 25, 26, 27, 28.
2. Write a program to generate the following pattern.

* 1. \* \* \* \* \*

\* \*

\* \*

\* \*

\* \* \* \* \*

* 1. $ \* \* \* \*

\* $ \*

\* $ \*

\* $ \*

\* \* \* \* $

* 1. $ \* \* \* $

\* $ $ \*

\* $ \*

\* $ $ \*

$ \* \* \* $

* 1. \*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

\* \* \* \*

\* \* \*

\* \*

\*

* 1. 1

2 1 2

1. 2 1 2 3

1. Write programs to implement the following sequence of numbers.

1, 8, 27, 64, …

-5, -2, 0, 3, 6, 9, 12, …

-2, -4, -6, -8, -10, -12, …

1, 4, 7, 10, …

1. An employee’s total weekly pay is calculated by multiplying the hourly wage and number of regular hours plus any overtime pay which in turn is calculated as total overtime hours multiplied by 1.5 times the hourly wage. Write a program that takes as inputs the hourly wage, total regular hours and total overtime hours and prints an employee’s total weekly pay.