Minor Assignments

1.	Write a single java statement to swap the value of two variable a, b without using third variable.
2.	Write a java program to swap the value of two variable a, b without using third variable and without using Arithmetic operators.
3.	Write a single java statement to print the sum of MSB digit of two four digit number a and b.
4.	Write a java program to print the ASCII value of an inputted character.
5.	Write a program to print the size of datatypes in bytes.
6	Write a program that calculates the energy needed to heat water from an initial temperature to a final temperature. Your program should prompt the user to enter the amount of water in kilograms and the initial and final temperatures of the water. The formula to compute energy is Q=M*(final temperature – initial Temperature) *4184 where M is the weight of water in Kilograms, temperatures are in degree Celsius, and energy Q is measured in joules.
7	Write a program to display true if the year is leap otherwise display false without using conditional statement.
8	Write a program that prompts the user to enter the distance to drive, the fuel efficiency of the car in miles per gallon, and the price per gallon and display the cost of the trip.
9	Write a program that reads the balance and the annual percentage interest rate and displays the interest for the next month. [Hint: interest = balance * (annualInterestRate/1200)]
10	(Summation of a series) Write a program that displays the result of 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9.
11	Write a java program to check if a number is even or odd without using **%** operator. Program should print ***true*** if number is even otherwise print ***false***.(***Hints:*** Use bit-wise operator).
12	Write a java program to check if a number is even or odd without using **%** operator. Program should print ***true*** if number is even otherwise print ***false***.(***Hints:*** Use / and * operator).
13	Write a java program to enter date of birth of a student, and current date. And find age of the student in years, months and days.

	Input DOB: 10 2 2019 ***Input current Date: 14 9 2019*** ***You are 0 years 7 months and 4 days old.***
14	A train of length ***l1*** metes running at speed ***p*** km/hr. Write a java program to find how much time it will take to cross abridge of length ***l2*** meters.
15	Let two persons A and B can do a job in ***d1*** and ***d2*** days respectively. Write a java program to find in how many days they can complete the job working together.
16.	Write program to input radius and height of a cylinder and Calculate Volume, Curved Surface Area and Total Surface Area Of Cylinder. Hint: Volume of Cylinder = $\pi r^2 h$ Curved Surface Area (CSA) of Cylinder = $2\pi rh$ Total Surface Area (TSA) of Cylinder = $2\pi r\ (h + r)$ where, r = radius, h = height,π = 3.14
17.	Write a program to find sum of last two digits of x^y. Hint:Math.pow(x, y).
18.	Write a program to input your name and generate a pass key that starts with First letter of your name and ends with 4 digit random number. Hint : Enter your name:Adya Your passkey is :A6752
19.	Write a program to input a number and check whether the number is perfect square using conditional operator?
20.	Write a program to input a number 'n' as command line argument and display true if it is a Fibonacci number using conditional operator? Hint: n is Fibonacci if one of 5*n*n + 4 or 5*n*n - 4 or both is a perfect square .
21.	Write program to enter 3 sides of triangle. If the triangle is valid display "Triangle is Possible " otherwise display "Triangle is not possible" with out using if-else statement. (Hint: Conditional operator) A triangle is valid if sum of its two sides is greater than the third side.

	If three sides are a, b and c, then three conditions should be met. 1.a + b > c 2.a + c > b 3.b + c > a
22.	Given four integers A, B, C and D which represents the four angles of a Quadrilateral in degrees. Using conditional operator check whether the given quadrilateral is valid or not.
23.	Write a program to form a number using 4 given digits. The program should prompt the user to enter 4 digits.
24.	Write a program to find the sum of each digit raised to the power 3 in a given 3 digit number. The program should prompt the user to enter a 3 digit number.
25.	Write a program to print the electricity bill for a month using conditional operator. For first 100 units the rate per unit is Rs.5 and after 100 units the rate per unit will be Rs6. The program has to prompt the user to enter the number of units consumed for the month and after giving the input it should display the amount to be paid for the month.
26.	Write a program to convert a Lowercase Character to Uppercase.
27.	Write a Program to print TRUE if the entered number is even or FALSE without using conditional operator
28.	Write a java program to print the first 4 bits of an integer between 0 to 15 entered from the keyboard ? (*For example : if the input number is 10 then the output is 1010 or if the input number is 3 then the output is 0011)*
29.	Write a java program to check whether a bit at a particular position of the binary representation of an integer is ON or OFF? (*for example: if the input number is 17, its binary in 32-bit format is 00000000000000000000000000100001, if the position is 5 then the output will b ON e.g 1)*
30.	Write a java program to find greatest among three numbers entered from the keyboard using conditional operatior? (*if input numbers are 6 3 9 then the output will be 9)*
31.	Write a program to print compund intrest and total pricipal value for three years(Accpet princpal ,

	rate and time from keyboard) ? (*for example if the input principal is 100 , rate is 10% per year and time is 3 years the then the output should be displayes as follows:* *At the end of 1st year princpal = 100 intrest = 10* *At the end of 2nd year prinpal = 110 intrest = 11* *At the end of 3rd year princpal = 121 intrest = 12.10* *Final principal = 133.10* *)*
32.	Write a java program to print the n^{th} digit of an integer entered from the keyboard? *(for example if the input integer is 234518 and n = 4 then output is 4)*
33.	Write a java program that display the area and perimeter of a rectangle with the width of 4.5 and height of 7.9.
34.	Write a Java Program to Check if a Given Integer is Positive or Negative using conditional operator. Sample Run Enter the number:6 The given number 6 is Positive
35.	Write a java Program to Check if a Given Integer is Positive or Negative using conditional operator. Sample Run Enter Year:2014 Last two digits:14
36.	If the marks of Rahul, Ayush and Ajay are input through the keyboard, write a java program to determine the highest mark among them.
37.	Write a java program to reverse a three digit number within the range 0 and 1000.
38.	A 4 digit number is entered through keyboard. Write a program to print a new number with digits reversed as of original one without using looping. Ex: INPUT : 1234 OUTPUT : 4321 INPUT : 5982 OUTPUT : 2895
39.	WAP that takes three variables a, b and m and print true if $a^m \times b^m = (a \times b)^m$ otherwise print false.
40.	WAP that takes three variables a, b and m and print true if $a^m \times b^m = (a \times b)^m$ otherwise print false.

	Write a java code to input height(in inches) in a text field and convert it into feet and inches. Display the final result in feet and inches. . For e.g. if height is 77 inches then after conversion it will be 6 feet 5 inches. [1 feet=12 inches]
41.	Write a java program that takes a double value x from the command line and prints the value of (3/4)cos(x)+(1/4)cos (3x) and (3/4)sin(x)-(1/4)sin (3x).
42.	WAP to enter a valid amount to withdraw from ATM. Print how many numbers of 2000, 500, 200, 100 notes will be collected from the ATM. Ex: let the entered amount is Rs. 3300. Then it will display Number of 2000 notes=1 Number of 500 notes=2, Number of 200 notes=1 and Number of 100 notes=1
43.	Write a Java program to check if a given number is prime or not. Note: A prime number is a number which is divisible by 1 and itself e.g. 3, 5, 7, 11, 13, 17 etc.
44.	Write a Java program to count the frequency of the digits in a given integer value. Example: If we have integer value as 121322, then the output should be: “1 is occurring 2 times, 2 is occurring 3 times, and 3 is occurring 1 time".
45.	Write a Java program that takes a positive integer as command-line arguments and prints true if the number is even (using Boolean variables).
46.	Write a Java program to calculate the area of an equilateral triangle. The formula for calculating the area of the equilateral triangle is: $Area = \frac{\sqrt{3}\,X\,S^2}{4}$ Where, s is the side of the triangle. Test Case: for s = 5 the area is 10.82.
47.	Write a Java program that takes a positive integer as command-line arguments and prints true if the number is even (using Boolean variables).
48.	Write a program to enter two numbers as input and find remainder after division of first number with second number without using modulo(%) operator.

49.	Write a program check case of a letter and print in opposite case. **Hints** :input: b output: B
50.	Write a program to find largest among 4 number numbers by using conditional operator.
51.	Write a program to enter three sides and check whether triangle is possible or not.
52.	Write a program to enter a five digit binary number as input and display 1's complement of that number without using complement operator.
53.	Write a program to enter a temperature t (in Fahrenheit) and the wind speed v (in miles per hour) and find out the wind chill (w) as follows: $w = 35.74 + 0.6215 * t + (0.4275 * t - 35.75)v^{0.16}$
54.	Suppose, the area of an ellipse is equal with the area of a circle with radius = 40ft. The formula for the area of ellipse is πab , where a and b are the semi-axes length of the ellipse. Write a program to find the value of a and b if $a + b = 1600$.
55.	Write a program to enter weight in pounds and height in inches of a person. Write a Boolean expression that evaluates true if either weight is greater than 60 pounds or height is greater than 70 inches, but not both.
56.	Write a program that displays the result of the following expression: $((4 * 7.5) - (5.3 / 2.7))^{3.9}$
57.	Enter two double variables x and y. Write the program to obtain the result of x^2y^5 in integer.

58.	Let the java code be given as follows: (Test.java)
	public class Test
	{
	public static void main(String args[])
	{
	int a=20;
	
	}
	}

	Answer the following Questions: i) List out the set of identifiers in the above program. ii) Describe what happens if you omit the followings in the main () method in the above program. *a. public b. static c. void d. args* iii) Describe what happens if you misspell (by, say, omitting the second letter) the followings in the main () method in above program. 1. *public b. static c. void d. args* Answer: **i.** In the above java code, we have 5 identifiers namely : •**Test**: class name •**main**: method name •**String**: predefined class name •**args**: variable name(array name) •**a**: variable name **ii. a)**Runtime Error: Main method not found in class Test, please define the main method as: public static void main(String[] args) **b)**Runtime Error: Main method is not static in class Test, please define the main method as: public static void main(String[] args) **c)**Compilation Error: invalid method declaration; return type required **d)**Compilation Error: <identifier> expected **iii. a)** Compilation Error: <identifier> expected (public expected) **b)** Compilation Error: <identifier> expected (static expected) **c)** Compilation Error: Cannot be resolved to a type **d)** No Error
59.	Assume a runner runs 14 kilometres in 45 minutes and 30 seconds. Write a java program that displays the average speed in miles per hour. Note: 1 mile is 1.6 kilometres.

60.	Write a Java program to break an integer into a sequence of individual digits *Test Data* Input six non-negative digits: 123456 *Expected Output*: 1 2 3 4 5 6
61.	Write java statements to evaluate the following equations. a) $Area = \pi r^2 + 2\pi rh$ b) $Torque = g * \frac{2m_1m_2}{m_1+m_2}$ c) $side = \sqrt{(a^2 + b^2 - 2abcos(x))}$ d) $Energy = mass(acceleration * height + \frac{velocity^2}{2})$
62.	Write a java program that takes a date as input and prints the day of the week that date falls on. Your program should take three command line parameters: m (month), d (day), and y (year). For m, use 1 for January, 2 for February, and so forth. For output, print 0 for Sunday, 1 for Monday, 2 for Tuesday, and so forth. Use the following formulas, for the Gregorian calendar: $y_0 = y - (14 - m)/12$ $x = y_0 + y_0/4 - y_0/100 + y_0/400$ $m_0 = m + 12 * ((14 - m)/12) - 2$ $d_{0=}(d + x + (31 * m_0)/12)\%7$ Example: On what day of the week was February 14, 2000? $y_0 = 2000 - 1 = 1999$ $x = 1999 + 1999/4 - 1999/100 + 1999/400 = 2483$ $m_0 = 2 + 12 * 1 - 2 = 12$ $d_0 = (14 + 2483 + (31 * 12)/12)\%7 = 2500\%7 = 1$ Answer: Monday.
63.	Write a Java program that accepts three positive integers from the user and print true if two or more of them have the same rightmost digit. **Sample Run** Enter three Numbers: 12 33 42

	true
64.	Write a java program to enter the ICP mark of a student. If the entered mark is greater than or equal 40 then print “pass” without using if. **Sample Run** Enter the Number: 49 pass
65.	Write a Java program (without using Arithmetic operator) that will print true if the given number is even else false. **Sample Run** Enter the Number: 101 false
66.	Write a Java program to compute the distance between two points on the surface of earth. Distance between the two points [(x1,y1) & (x2,y2)] d = radius * arccos(sin(x1) * sin(x2) + cos(x1) * cos(x2) * cos(y1 - y2)) Radius of the earth r = 6371.01 Kilometers **Note:** arcos can be calculated using Math.acos()
67.	Write a Java program that accepts an integer (n) and computes the value of n+nn+nnn. **Sample Run** Input number: 5 5 + 55 + 555=615