**1. What possible values can a Boolean expression have?if and condition need know its true or fault**

**2. Where does the term Boolean originate? George Boole, an English mathematician in the 19th century, developed "Boolean Logic"**

**3. What is an integer equivalent to True in Python? (5>3)**

**4. What is the integer equivalent to False in Python? (5<2)**

**5. Is the value -16 interpreted as True or False?no**

**6. Given the following definitions:**

**1 = true , 0 =false**

**x, y, z = 3, 5, 7**

**evaluate the following Boolean expressions:**

**(a) x == 3 t**

**(b) x < y t**

**(c) x >= y f**

**(d) x <= y t**

**(e) x != y - 2 f**

**(f) x < 10 t**

**(g) x >= 0 and x < 10 t**

**(h) x < 0 and x < 10 f**

**(i) x >= 0 and x < 2 f**

**(j) x < 0 or x < 10 t**

**(k) x > 0 or x < 10 t**

**(l) x < 0 or x > 10 f**

**7. Given the following definitions:**

**x, y = 3, 5**

**b1, b2, b3, b4 = True, False, x == 3, y < 3**

**evaluate the following Boolean expressions:**

**(a) b3 t**

**(b) b4 f**

**(c) not b1 f**

**(d) not b2 t**

**(e) not b3 f**

**(f) not b4 t**

**(g) b1 and b2 f**

**(h) b1 or b2 t**

**(i) b1 and b3 t**

**(j) b1 or b3 t**

**(k) b1 and b4 f**

**(l) b1 or b4 t**

**(m) b2 and b3 f**

**(n) b2 or b3 t**

**(o) b1 and b2 or b3 f**

**(p) b1 or b2 and b3 t**

**(q) b1 and b2 and b3 f**

**(r) b1 or b2 or b3 t**

**(s) not b1 and b2 and b3 f**

**(t) not b1 or b2 or b3 t**

**(u) not (b1 and b2 and b3) t**

**(v) not (b1 or b2 or b3) f**

**(w) not b1 and not b2 and not b3 f**

**(x) not b1 or not b2 or not b3 t**

**(y) not (not b1 and not b2 and not b3) t**

**(z) not (not b1 or not b2 or not b3) f**

**8. Express the following Boolean expressions in simpler form; that is, use fewer operators or fewer**

**symbols. x is an integer. x = 3 , y = 5**

**(a) not (x == 2) t**

**(b) x < 2 or x == 2 f**

**(c) not (x < y) f**

**(d) not (x <= y) f**

**(e) x < 10 and x > 20 f**

**(f) x > 10 or x < 20 t**

**(g) x != 0 t**

**(h) x == 0 f**

**9. Express the following Boolean expressions in an equivalent form without the not operator. x and y**

**are integers.**

**(a) not (x == y) t**

**(b) not (x > y) t**

**(c) not (x < y) f**

**(d) not (x >= y) t**

**(e) not (x <= y) f**

**(f) not (x != y) f**

**(g) not (x != y) f**

**(h) not (x == y and x < 2) t**

**(i) not (x == y or x < 2) t**

**(j) not (not (x == y)) f**

**10. What is the simplest tautology?true in bool**

**11. What is the simplest contradiction? false**

**12. Write a Python program that requests an integer value from the user. If the value is between 1 and100 inclusive, print ”OK;” otherwise, do not print anything.**

**number = int (input("put your number:"))**

**if(number < 100 and number > 0):**

**print("ok")**

**13. Write a Python program that requests an integer value from the user. If the value is between 1 and100 inclusive, print ”OK;” otherwise, print ”Out of range.”**

**number = int (input("put your number:"))**

**if(number < 100 and number > 0):**

**print("ok")**

**else:**

**print("out of range")**

**14. Write a Python program that allows a user to type in an English day of the week (Sunday, Monday,etc.). The program should print the Spanish equivalent, if possible.**

**day = (input("put your day of weak:"))**

**if(day == "monday"):**

**print("lunes")**

**elif(day == "tuesday"):**

**print("martes")**

**elif(day == "wednesday"):**

**print("miercoles")**

**elif(day == "thursday"):**

**print("jueves")**

**elif(day == "friday"):**

**print("viernes")**

**elif(day == "saturday"):**

**print("sabado")**

**elif(day == "sunday"):**

**print("domingo")**

**else:**

**print("eror")**

**15. Consider the following Python code fragment:**

**# i, j, and k are numbers**

**if i < j:**

**if j < k:**

**i = j**

**else:**

**j = k**

**else:**

**if j > k:**

**j = i**

**else:**

**i = k**

**print("i =", i, " j =", j, " k =", k)print("i =", i, " j =", j, " k =", k)print("i =", i, " j =", j, " k =", k)What will the code print if the variables i, j, and k have the following values? if give any values on (i,j,k)we will print cause prine dont care about condition**

**(a) i is 3, j is 5, and k is 7**

**(b) i is 3, j is 7, and k is 5**

**(c) i is 5, j is 3, and k is 7**

**(d) i is 5, j is 7, and k is 3**

**(e) i is 7, j is 3, and k is 5**

**(f) i is 7, j is 5, and k is 3**

**16. Consider the following Python program that prints one line of text:**

**val = int(input())**

**if val < 10:**

**if val != 5:**

**print("wow ", end='')**

**else:**

**val += 1**

**else:**

**if val == 17:**

**val += 10**

**else:**

**print("whoa ", end='')**

**print(val)**

**What will the program print if the user provides the following input?**

**(a) 3 wow 3**

**(b) 21 woa 21**

**(c) 5 6**

**(d) 17 27**

**(e) -5 wow - 5**

**17. Consider the following two Python programs that appear very similar:**



**How do the two programs react when the user provides the following inputs?**

**(a) 0 (\*\*\*\*) secend code:(\*)**

**(b) 1 (\*\*\*) secend code:(\*)**

**(c) 5 (\*\*\*) secend code:(\*)**

**(d) 50 (\*\*) secend code:(\*)**

**(e) 500 (\*) secend code:(\*)**

**(f) 5000 print nothing for bowth**

**Why do the two programs behave as they do?**

**cause evry time in program left boolian expresion will cheack but in right program when one boolian will true next condition will not cheack**

**18. Write a Python program that requests five integer values from the user. It then prints the maximumand minimum values entered. If the user enters the values 3, 2, 5, 0, and 1, the program wouldindicate that 5 is the maximum and 0 is the minimum. Your program should handle ties properly; forexample, if the user enters 2, 4, 2, 3, and 3, the program should report 2 as the minimum and 4 asmaximum.**

**for i in range (0,5):**

**number = int(input("put ure number:"))**

**if( i == 0):**

**min = number**

**max = number**

**if(number>max):**

**max = number**

**elif(number<min):**

**min = number**

**19. Write a Python program that requests five integer values from the user. It then prints one of two things:if any of the values entered are duplicates, it prints "DUPLICATES"; otherwise, it prints "ALL UNIQUE".**

**number\_1 = int(input("put ure number\_1:"))**

**number\_2 = int(input("put ure number\_2:"))**

**number\_3 = int(input("put ure number\_3:"))**

**number\_4 = int(input("put ure number\_4:"))**

**number\_5 = int(input("put ure number\_5:"))**

**if (umber\_1 == number\_2 or number\_1 == number\_3 or number\_1 == number\_4 or number\_1 == number\_5 or number\_2 == number\_3 or number\_2 == number\_4 or number\_2 == number\_5 or number\_3 == number\_4 or number\_3 == number\_5 or number\_4 == number\_5):**

**print("DUPLICATES")**

**else:**

**print("ALL UNIQUE")**