

FACULTY OF COMPUTING
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كلية الحاسبات
وتقنية المعلومات

جامعة الملك عبدالعزيز

Sample Exam Questions

Chapter 4 (MCQ)

CPIT 110 (Problem-Solving and Programming)



تنبيه!

- هذه الأسئلة عبارة عن عينة فقط توضح طريقة أسئلة (الاختيارات) لمقرر البرمجة وحل المشكلات (CPIT-110).
- هذه الأسئلة لا يُعتمد عليها فقط للمذاكرة.
- قد لا تشمل هذه الأسئلة جميع المواضيع المقررة للاختبار.
- هذه الأسئلة مناسبة للمراجعة بعد الانتهاء من مذاكرة وتطبيق المواضيع المقررة للاختبار.
- حلول الأسئلة مرفقة نهاية صفحات هذا الملف.

Chapter 4: Selections

Questions

Question #1

The "less than or equal to" comparison operator is _____.

a) <<

b) <=

c) !=

d) >=

Question #2

The equal comparison operator is _____.

a) <>

b) !=

c) ==

d) =

Question

#3

To generate a random integer between 0 and 5, use _____.

- a) `random.randint(0, 5)`
- b) `random.randint(0, 6)`
- c) `random.randint(1, 5)`
- d) `random.randrange(0, 5)`

Question

#4

`random.randint(0, 1)` returns _____.

- a) 0
- b) 1
- c) 0 or 1
- d) 2

Question #5

`random.random()` returns _____.

- a) a float number i such that $0 < i < 1.0$
- b) a float number i such that $0 \leq i < 1.0$
- c) a float number i such that $0 \leq i \leq 1.0$
- d) a float number i such that $0 < i < 2.0$

Question

#6

Which of the following code displays the area of a circle if the radius is positive.

- a) `if radius != 0: print(radius * radius * 3.14159)`
- b) `if radius >= 0: print(radius * radius * 3.14159)`
- c) `if radius > 0: print(radius * radius * 3.14159)`
- d) `if radius <= 0: print(radius * radius * 3.14159)`

Question #7

What is the output of the following code?

```
x = 0
if x < 4:
    x = x + 1
print("x is", x)
```

- a) x is 0
- b) x is 1
- c) x is 2
- d) x is 3

Question

#8

Suppose `isPrime` is a boolean variable, which of the following is the correct statement for testing if `isPrime` is true.

- a) `if isPrime = True:`
- b) `if isPrime == TRUE:`
- c) `if isPrime:`
- d) `if not isPrime = False:`

Question #9

Analyze the following code:

```
even = False
if even = True:
    print("It is even!")
```

- a) The program has a syntax error in line 1 (`even = False`)
- b) The program has a syntax error in line 2 `if even = True` is not a correct condition. It should be replaced by `if even == True:` or `if even:`.
- c) The program runs, but displays nothing.
- d) The program runs and displays `It is even!`.

Question #10

Analyze the following code:

```
even = False
if even:
    print("It is even!")
```

- a) The code displays It is even!
- b) The code displays nothing.
- c) The code is wrong. You should replace `if even:` with `if even == True:`
- d) The code is wrong. You should replace `if even:` with `if even = True:`

Question

#11

Suppose $x = 1$, $y = 2$, and $z = 1$. What will be displayed by the following statement?

```
if x > 0:
    print("***", y, end=" ")
if z > 0:
    print("$$$ ", y, end=" ")
```

- a) *** 2
- b) \$\$\$ 2
- c) *** 2 \$\$\$ 2
- d) *** \$\$\$

Question #12

The following code displays _____.

```
temperature = 50
if temperature >= 100:
    print("too hot")
else:
    print("just right")
```

- a) too hot
- b) too cold
- c) just right
- d) too hot
just right

Question #13

The following code displays _____.

```
temperature = 50
if temperature >= 100:
    print("too hot")
elif temperature <= 40:
    print("too cold")
else:
    print("just right")
```

- a) too hot
- b) too cold
- c) just right
- d) too hot
too cold
just right

Question

#14

Suppose $x = 1$, $y = -1$, and $z = 1$. What will be displayed by the following statement?

```
if x > 0:
    if y > 0:
        print("x > 0 and y > 0")
elif z > 0:
    print("x < 0 and z > 0")
```

- a) $x > 0$ and $y > 0$
- b) $x < 0$ and $z > 0$
- c) $x < 0$ and $z < 0$
- d) Nothing displayed

Question

#15

Suppose income is 4001, what will be displayed by f the following code?

```
if income > 3000:  
    print("Income is greater than 3000")  
elif income > 4000:  
    print("Income is greater than 4000")
```

- a) Income is greater than 3000
- b) Income is greater than 3000 followed by Income is greater than 4000
- c) Income is greater than 4000
- d) Income is greater than 4000 followed by Income is greater than 3000

Question

#16

Suppose you write the code to display "Cannot get a driver's license" if age is less than 16 and "Can get a driver's license" if age is greater than or equal to 16. **Which of the following code is correct?**

```
I:
if age < 16:
    print("Cannot get a driver's license")
if age >= 16:
    print("Can get a driver's license")
```

```
II:
if age < 16:
    print("Cannot get a driver's license")
else:
    print("Can get a driver's license")
```

```
III:
if age < 16:
    print("Cannot get a driver's license")
elif age >= 16:
    print("Can get a driver's license")
```

```
IV:
if age < 16:
    print("Cannot get a driver's license")
elif age == 16:
    print("Can get a driver's license")
elif age > 16:
    print("Can get a driver's license")
```

- a) I and II
- b) II and III
- c) I, II, and III
- d) All correct

Question

#17

Suppose you write the code to display "Cannot get a driver's license" if age is less than 16 and "Can get a driver's license" if age is greater than or equal to 16. **Which of the following code is the best?**

```
I:
if age < 16:
    print("Cannot get a driver's license")
if age >= 16:
    print("Can get a driver's license")
```

```
II:
if age < 16:
    print("Cannot get a driver's license")
else:
    print("Can get a driver's license")
```

```
III:
if age < 16:
    print("Cannot get a driver's license")
elif age >= 16:
    print("Can get a driver's license")
```

```
IV:
if age < 16:
    print("Cannot get a driver's license")
elif age == 16:
    print("Can get a driver's license")
elif age > 16:
    print("Can get a driver's license")
```

- a) I
- b) II
- c) III
- d) IV

Question #18

Analyze the following code:

Code 1:

```
if number % 2 == 0:  
    even = True  
else:  
    even = False
```

Code 2:

```
even = number % 2 == 0
```

- a) Code 1 has compile errors.
- b) Code 2 has compile errors.
- c) Both Code 1 and Code 2 have compile errors.
- d) Both Code 1 and Code 2 are correct, but Code 2 is better.

Question

#19

Which of the Boolean expressions below is incorrect?

- a) `True and 3 >= 4`
- b) `!(x > 0) and (x > 0)`
- c) `(x != 0) or (x == 0)`
- d) `(-10 < x < 0)`

Question

#20

Which of the Boolean expressions below is incorrect?

- a) `True and 3 => 4`
- b) `not (x > 0) and (x > 0)`
- c) `(x != 0) or (x == 0)`
- d) `(-10 < x < 0)`

Question

#21

Which of the Boolean expressions below is incorrect?

- a) `True and 3 >= 4`
- b) `not (x > 0) and (x > 0)`
- c) `(x != 0) or (x = 0)`
- d) `(-10 < x < 0)`

Question

#22

Given $|x - 2| \leq 4$, Which of the following is true?

- a) $x - 2 \leq 4$ and $x - 2 \geq 4$
- b) $x - 2 \leq 4$ and $x - 2 > -4$
- c) $x - 2 \leq 4$ and $x - 2 \geq -4$
- d) $x - 2 \leq 4$ or $x - 2 \geq -4$

Question

#23

Given $|x - 2| \geq 4$, Which of the following is true?

- a) $x - 2 \geq 4$ and $x - 2 \leq -4$
- b) $x - 2 \geq 4$ or $x - 2 \leq -4$
- c) $x - 2 \geq 4$ and $x - 2 < -4$
- d) $x - 2 \geq 4$ or $x - 2 \leq -4$

Question

#24

Assume $x = 4$ and $y = 5$, Which of the following is true?

- a) $x < 5$ and $y < 5$
- b) $x < 5$ or $y < 5$
- c) $x > 5$ and $y > 5$
- d) $x > 5$ or $y > 5$

Question

#25

Assume $x = 4$ and $y = 5$, Which of the following is true?

- a) `not (x == 4)`
- b) `x != 4`
- c) `x == 5`
- d) `x != 5`

Question

#26

Which of the following is equivalent to $x \neq y$?

- a) `not (x == y)`
- b) `x > y and x < y`
- c) `x == y or x == y`
- d) `x >= y or x <= y`

Question

#27

Which of the following is equivalent to $x \neq y$?

- a) $\text{not } (x \neq y)$
- b) $x > y \text{ and } x < y$
- c) $x > y \text{ or } x < y$
- d) $x \geq y \text{ or } x \leq y$

Question

#28

What is y after the following statement is executed?

```
x = 0  
y = 10 if x > 0 else -10
```

a) -10

b) 0

c) 10

d) 20

Question

#29

Analyze the following code fragments that assign a boolean value to the variable `even`.

Code 1:

```
if number % 2 == 0:  
    even = True  
else:  
    even = False
```

Code 2:

```
even = True if number % 2 == 0 else False
```

Code 3:

```
even = number % 2 == 0
```

- a) Code 3 has a syntax error, because you attempt to assign `number` to `even`.
- b) All three are correct, but Code 1 is preferred.
- c) All three are correct, but Code 2 is preferred.
- d) All three are correct, but Code 3 is preferred.

Question

#30

What will be displayed by the following code?

```
isCorrect = False  
print("Correct" if isCorrect else "Incorrect")
```

- a) Correct
- b) Incorrect
- c) Nothing
- d) Correct Incorrect

Question

#31

The order of the precedence (from high to low) of the operators $+$, $*$, and, or is:

- a) and, or, $*$, $+$
- b) $*$, $+$, and, or
- c) $*$, $+$, or, and
- d) or, and, $*$, $+$

Question

#32

Which of the following operators are right-associative.

a) $*$

b) $+$

c) and

d) $=$

Question

#33

What is the value of the following expression?

True or True and False

- a) True
- b) False

Question

#34

Which of the following statements are True?

- a) $(x \geq 0 \text{ and } x \leq 10)$ is same as $(x > 0 \text{ and } x < 10)$
- b) $(x > 0 \text{ and } x < 10)$ is same as $(x > 0 \text{ or } x < 10)$
- c) $(x > 0 \text{ or } x < 10 \text{ and } y < 0)$ is same as $(x > 0 \text{ or } (x < 10 \text{ and } y < 0))$
- d) $(x > 0 \text{ or } x < 10 \text{ and } y < 0)$ is same as $((x > 0 \text{ or } x < 10) \text{ and } y < 0)$

Solutions

Question #	Correct Answer
1	B
2	C
3	A
4	C
5	B
6	C
7	B
8	C
9	B
10	B

Question #	Correct Answer
11	C
12	C
13	C
14	D
15	A
16	D
17	B
18	D
19	B
20	A

Solutions

Question #	Correct Answer
21	C
22	C
23	B
24	B
25	D
26	A
27	C
28	A
29	D
30	B

Question #	Correct Answer
31	B
32	D
33	A
34	C