

1. A  B  C  D  E
2. A  B  C  D  E
3. A  B  C  D  E
4. A  B  C  D  E
5. A  B  C  D  E
6. A  B  C  D  E
7. A  B  C  D  E
8. A  B  C  D  E
9. A  B  C  D  E
10. A  B  C  D  E
11. A  B  C  D  E
12. A  B  C  D  E
13. A  B  C  D  E
14. A  B  C  D  E
15. A  B  C  D  E
16. A  B  C  D  E
17. A  B  C  D  E
18. A  B  C  D  E
19. A  B  C  D  E
20. A  B  C  D  E

From the following options:

A) `Count ← 1; Not an algorithm  
while (Count ≠ 10) do {  
  print Count;  
  Count ← Count + 2;  
}` **Count = 10 | ∞ | 1 3 5 7 9 11 ...**

B) `Count ← 0;  
while (Count ≠ 10) do {  
  print Count;  
  Count ← Count + 2;  
}` **Count = 10 | 5 | 0 2 4 6 8**

C) `Count ← 10;  
while (Count ≥ 0) do {  
  Count ← Count - 2;  
}` **Count = 0 | 6 | 10**  
`print 8 - Count;`

D) `Count ← 10;  
repeat { Count > 0 | 1 | 10  
  print Count;  
  Count ← Count - 2;  
} until (Count > 0)`

E) `Count ← 0;  
repeat { Count = 10 | 5 | 2 4 6 8 10  
  Count ← Count + 2;  
  print Count;  
} until (Count = 10)`

Identify:

1. Two algorithms that have **B, E** the same stop condition
2. Two programs that produce the same output **C, D**

Solution Steps:

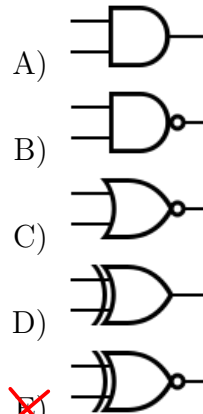
- 1- (red): Study the given options/questions and take notes
- 2- (blue): Write the suitable option in front of every question
- 3- (green): Mark the selected options in the answer sheet

Notes about algorithms questions:

- 1- They were originally taken from the quiz for demonstration purpose only
- 2- They are not marked anyway as the exam total mark is 15
- 3- There was a mistake in the given options
- 4- The mistake is corrected in this model answer

3. A non terminating program
4. Two programs that do the same number of iterations **B, E**
5. A program that does only one iteration **D**

From the following options:



Identify:

6. AND gate **A**
7. NAND gate **B**
8. NOR gate **C**
9. XOR gate **D**

From the following options:

- A) A
- ~~B) H~~
- C) 0
- D) FF

E) 1001101

Identify:

10. Bit **0/1 C**
11. Byte **Eight bits = two Hex D**
12. Hexadecimal Digit **0-9, A-F A**
13. ASCII Code **Seven bits E**

From the following options:

- A)  $4^{5/16}$
- B)  $4^{3/16}$
- C)  $4^{5/8}$
- ~~D)  $5^{3/8}$~~
- ~~E)  $5^{3/16}$~~

Identify:

14. 100.0101 **4 5/16 A**
15. 100.101 **4 5/8 C**
16. 101.011 **5 3/8 D**
17. 100.0011 **4 3/16 B**

From the following options:

- A) 1110
- ~~B) 1011~~
- C) 0110
- ~~D) 1001~~
- E) 1101

Identify:

18. 0011 + 0011 **0110 C**
19. 1100 + 0010 **1110 A**
20. 1011 + 0010 **1101 E**

Name: \_\_\_\_\_  
ID: \_\_\_\_\_  
Sec.: \_\_\_\_\_  
B.N.: \_\_\_\_\_



Benha University,  
Faculty of Engineering (at Shoubra),  
Electrical Engineering Department.  
Computer ECE 001 (Midterm Exam)