

## ALGO MCQ

1. Which area is not in the signature of an abstract type ?

- (a) TYPES
- (b) USES
- (c) OPERATIONS
- ✓ (d) PRECONDITIONS

2. Which operations do  $op_1$  and  $op_2$  represent in the following axiom (where  $e$  is an element and  $l$  a list)  $op_1(op_2(e, l)) = e$  ?

- (a)  $op_1 = \text{first}$ ,  $op_2 = \text{head}$
- (b)  $op_1 = \text{cons}$ ,  $op_2 = \text{first}$
- ✓ (c)  $op_1 = \text{first}$ ,  $op_2 = \text{cons}$
- (d)  $op_1 = \text{tail}$ ,  $op_2 = \text{first}$

3. For the declaration

```
TYPES true
USES but, incredible
```

the operation that :  $\text{incredible } x \text{ but } \rightarrow \text{true}$  is ?

- (a) An observer
- ✓ (b) An internal operation
- (c) A reporter
- (d) An external operation
- (e) An observator

4. An operation used to specify the definition domain of another one is ?

- (a) a temporary operation
- ✓ (b) An auxiliary operation
- (c) A partial operation
- (d) A precondition

5. Which operations define a recursive list ?

- (a) begin
- (b) length
- ✓ (c) tail
- ✓ (d) cons
- (e) nth

6. An algebraic abstract type must be ?

- ✓ (a) Complete
- (b) Consequent
- ✓ (c) Consistent
- (d) Complement

7. Which operations do  $opé1$  and  $opé2$  represent in the following axiom (where  $e$  is an element and  $l$  a list)  $opé1(opé2(e,l)) = l$  ?

- (a)  $opé1 = tail, opé2 = head$
- (b)  $opé1 = cons, opé2 = tail$
- ✓ (c)  $opé1 = tail, opé2 = cons$
- (d)  $opé1 = cons, opé2 = head$

8. An operation that is not described everywhere is ?

- (a) a temporary operation
- (b) An auxiliary operation
- ✓ (c) A partial operation
- (d) A precondition

9. The making of a recursive list is, based among other things, on ?

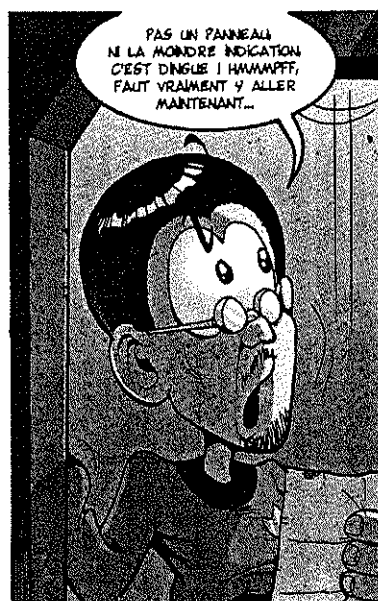
- (a) The deletion of the  $K^{th}$  element of a list
- ✓ (b) The recovery of the rest of the list
- (c) The insertion of an element at the  $K^{th}$  box
- ✓ (d) The insertion of an element at the head of the list

10. For the declaration

```
TYPES  Vrai, Ouf
USES   De, Truc
```

the operation  $c'est-un$  :  $Vrai \times Truc \times De \rightarrow Ouf$  is ?

- (a) An observer
- ✓ (b) An internal operation
- (c) An external operation
- (d) An observator



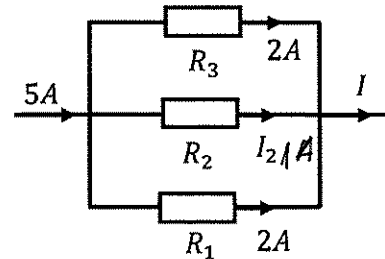
# MCQ Electronics – InfoS1

Read the questions AND the answers provided (pay attention to the numbering of the answers)

Consider the diagram on the right (Q21&22)

**Q21.** What is current  $I$  intensity ?

- a- 5A
- b- 1A
- c- 2A
- d- Unknown



**Q22.** Compare  $R_2$  and  $R_3$  ?

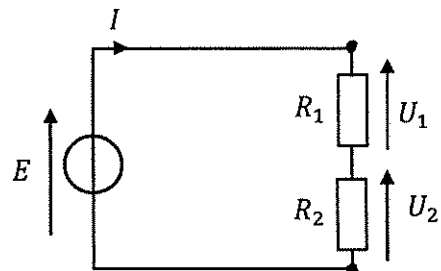
- a-  $R_2 < R_3$
- c-  $R_2 > R_3$
- b-  $R_2 = R_3$
- d- On ne peut rien dire

Consider the diagram on the right, we set:

$$R_1 = 200\Omega ; R_2 = 100\Omega$$

**Q23.** The sum of voltages between the terminals of the two resistors is:

- a- Higher than the voltage between source terminals
- b- Lower than the voltage between source terminals
- c- Equal to the voltage between source terminals



**Q24.** The voltage  $E$  between source terminals is equal to?

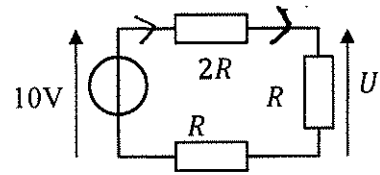
- a-  $(R_1 + R_2) \cdot I$
- b-  $(R_1 - R_2) \cdot I$
- c-  $R_2 \cdot I$
- d-  $R_1 \cdot I$

**Q25.** The voltage  $U_2$  between  $R_2$  terminals is equal to?

- a-  $\frac{1}{3} \cdot E$
- b-  $\frac{1}{2} \cdot E$
- c-  $\frac{2}{3} \cdot E$
- d-  $\frac{3}{2} \cdot E$

**Q26.** On the opposite diagram, calculate  $U$ ?

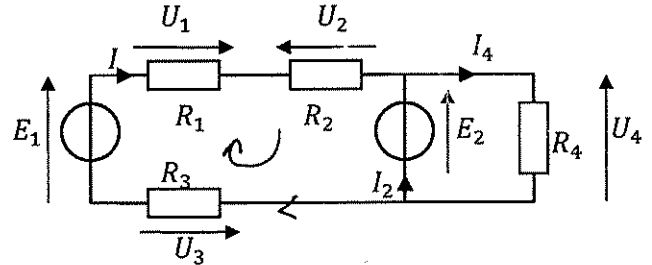
- a- 2.5 V
- b- -2.5 V
- c- 5V
- d- 7.5 V



Consider the diagram on the right (Q27&28).

**Q27.** What is the correct equation?

- a-  $U_1 = -R_1 \cdot I$  ✓
- b-  $U_2 = -R_2 \cdot I$
- c-  $U_3 = -R_3 \cdot I$
- d-  $U_4 = +E_2$

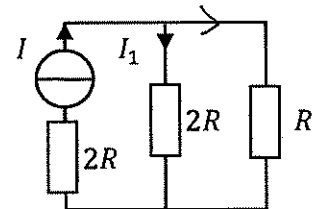


**Q28.** What is the correct equation?

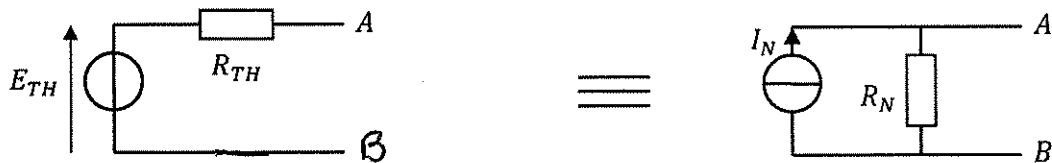
- a-  $U_1 = U_2$
- b-  $E_1 - U_1 + U_2 + E_2 - U_3 = 0$
- c-  $E_1 = U_3 + U_2 + E_2 - U_1$  ✓
- d-  $E_1 = E_2$

**Q29.** Consider the opposite diagram. Choose a formula for  $I_1$ ?

- a-  $I_1 = \frac{2}{3} \cdot I$
- c-  $I_1 = \frac{1}{3} \cdot I$  ✓
- b-  $I_1 = \frac{2}{5} \cdot I$
- d-  $I_1 = \frac{1}{5} \cdot I$



**Q30.** Consider both diagrams below:



These two diagrams are equivalent if and only if:

- a-  $E_{th} = I_N$  and  $R_{th} = R_N$
- b-  $E_{th} = R_N \cdot I_N$  and  $R_{th} = R_N$  ✓
- c-  $E_{th} = \frac{I_N}{R_N}$  and  $R_{th} = R_N$
- d-  $E_{th} = R_N$  and  $I_N = R_{th}$

# Test 3

## Computer Architecture

Monday 16 October 2023

For all the questions, one or more answers are possible.

31. Which is the weight of the digit C in the following number:  $ABCD_{16}$ ?

- A. 16  
 B. 12  
 C. None of these answers.  
 D. 1

32. Which is the result of the following subtraction:  $1000_{16} - 1_{16}$ ?

- A.  $999_{16}$   
 B.  $FFF_{16}$   
 C. None of these answers.  
 D.  $1FFF_{16}$

33.  $137.015625_{10} =$

- A.  $10001001.0000001_2$   
 B. None of these answers.  
 C.  $89.02_{16}$   
 D.  $89.04_{16}$

34.  $1110111_2 + 1110111_2 + 1001011_2 =$

- A.  $101011001_2$   
 B. None of these answers.  
 C.  $100111001_2$   
 D.  $100110001_2$

35.  $111110111_2 - 1100111_2 =$

- A.  $110110000_2$   
 B.  $110010000_2$   
 C. None of these answers.  
 D.  $101010000_2$

36.  $10100011100_2 / 1100_2 =$

- A.  $1101110_2$
- ✓  B.  $1101101_2$
- C.  $1101100_2$
- D. None of these answers.

37.  $10011100_2 * 101001_2 =$

- A.  $1010011111100_2$
- ✓  B.  $1100011111100_2$
- C.  $1101011111100_2$
- D. None of these answers.

38.  $3B5_{16} + C1A_{16} + D2F_{16} =$

- A.  $DFE_{16}$
- B.  $1DFE_{16}$
- ✓  C.  $1CFE_{16}$
- D. None of these answers.

$$\begin{array}{r}
 \textcircled{A} \quad \textcircled{A} \\
 3B5 \\
 + C1A \\
 + D2F \\
 \hline
 1CFE
 \end{array}$$

39. An  $n$ -bit word can be arranged into:

- ✓  A.  $2^n$  patterns
- B.  $2^{n-1}$  patterns
- C.  $2^n - 1$  patterns
- D. None of these answers.

40. What is the 8-bit two's complement of  $98_{16}$ ?

- A.  $98_{16}$
- ✓  B.  $68_{16}$
- C.  $67_{16}$
- D. None of these answers.

ADP MCQ 3 16/10/2023

Grammar (Questions 41-45)

41. My uncle \_\_\_\_\_ on a TV program today. We have to watch it!

- a. appear
- ✓ b. is appearing ✓
- c. appears
- d. is appears

42. Jason \_\_\_\_\_ a little upset today. Don't you think?

- ✓ a. seems
- b. seeming
- c. is seeming
- d. seem

43. Did you know that Barbara \_\_\_\_\_ in ghosts?

- a. is believing
- b. is believe
- c. believe
- ✓ d. believes

44. Lola: Why are you so quiet?

Diego: Oh, it's nothing. I \_\_\_\_\_ the time when we got lost in the woods.

- a. remembers
- ✓ b. am remembering
- c. remember
- d. remembering

45. Sarah really \_\_\_\_\_ spiders but I \_\_\_\_\_ them, personally.

- ~~a. is hating/like~~
- ~~b. hate/likes~~
- ~~c. hates/is liking~~
- ✓ d. hates/like

Email (Questions 46-50):

46. Which of the following does NOT include a phrasal verb?
- a) The project was put in place by the students.
  - b) The students worked out the project.
  - c) The students designed the project.
  - d) The project was dreamt up by the students.
47. Which statement is the MOST formal?
- a) Anna's taking a couple of weeks off at the start of next month.
  - b) Anna's gonna be leaving on holiday next week.
  - c) Anna is heading off on vacation in a fortnight.
  - d) Anna will soon be taking her annual leave.
48. Which sentence is the LEAST formal?
- a) We're gonna ditch the meeting next week.
  - b) Let's cancel next week's meeting.
  - ~~c) I'm afraid we will have to postpone the meeting.~~
  - ~~d) The meeting has, regrettably, to be rescheduled.~~
49. "Our application went through!" means that our application \_\_\_\_.
- a) succeeded
  - ~~b) was not received~~
  - ~~c) was being worked on~~
  - ~~d) got lost~~
50. Saying "Please back me up" means that you \_\_\_\_.
- a) would like to reverse out of the car park.
  - b) would like copies to be made of your data.
  - c) would like someone to support you.
  - d) would like your back scratched.



Choose the ONE correct answer that applies in each case.

51. Which statement uses the most appropriate academic style?  
~~a.~~ In this paper I argue that ChatGPT is indispensable  
~~b.~~ In this paper we argue that ChatGPT is indispensable  
~~c.~~ In this paper the argument is that ChatGPT is indispensable  
 ✓ d. This paper argues that ChatGPT is indispensable
52. Which statement uses the most appropriate academic style?  
~~a.~~ Numbers won't increase until next year  
~~b.~~ Numbers aren't increasing until next year  
~~c.~~ Numbers won't be increased until next year  
 ✓ d. Numbers will not increase until next year
53. Which statement uses the most appropriate academic style?  
~~a.~~ The experiment didn't produce any new findings  
 ✓ b. No new findings arose from the experiment  
~~c.~~ The experiment did not reveal ~~no~~ new results  
~~d.~~ New findings didn't arise from the experiment
54. Which statement uses the most appropriate academic style?  
~~a.~~ Users, administrators etc. all require appropriate training  
 ✓ b. Appropriate training should be offered to users, administrators and technicians  
~~c.~~ Users, admin and techies all need training courses  
~~d.~~ Appropriate training is a must for everyone in IT
55. Which statement uses the most appropriate academic style?  
~~a.~~ Who knows how many users there are?  
b. Studies need to study the number of users  
~~c.~~ Studies should investigate how many users are there?  
 ✓ d. Studies need to examine how many users there are
56. Which statement uses the most appropriate academic style?  
 ✓ a. The effects of prolonged screen use can be seen in students' performance  
~~b.~~ The effects of prolonged screen use reflect themselves in students' performance  
~~c.~~ The effects of prolonged screen on students' performance are seen  
~~d.~~ The effects of prolonged screen reflect in students' performance
57. Which statement is NOT good academic style?  
~~a.~~ The lessons were originally created by a former lecturer  
~~b.~~ Originally, the lessons were created by a former lecturer  
~~c.~~ The lessons originally were created by a former lecturer  
 ✓ d. The lessons were created by originally a former lecturer
58. Which statement is NOT good academic style?  
~~a.~~ Adults are doing little sport  
~~b.~~ A lack of sport afflicts many adults  
 ✓ c. Little adults do enough sport  
~~d.~~ Few adults do much sport
59. Which statement does NOT have the same meaning as the other three?  
~~a.~~ Engineers need to be seen to be addressing the problem adequately  
 ✓ b. Adequate engineers must address the visible issue  
~~c.~~ It must be clear to all that engineers are properly resolving the issue  
~~d.~~ Engineers are required to be seen to address the problem sufficiently
60. Which statement does NOT have the same meaning as the others?  
~~a.~~ Studies have revealed that consuming vegetables significantly improves health  
~~b.~~ Consuming vegetables has major health benefits according to studies  
~~c.~~ Vegetable consumption has been shown in studies to enable considerable health benefits  
 ✓ d. Studies show that major health improvements can seldom be achieved by eating vegetables

