

ALGO  
QCM

1. Quels éléments composent la signature d'un type abstrait ?

- (a) Les TYPES
- (b) Les OPERATIONS
- (c) Les PRECONDITIONS
- (d) Les variables AVEC

2. La définition d'une opération est composée ?

- (a) d'un nom
- (b) d'un profil
- (c) d'un surnom
- (d) d'un préfixe
- (e) d'un suffixe

3. La zone UTILISE sert à préciser ?

- (a) Les types définis
- (b) Les types prédéfinis

4. Pour la déclaration

TYPES sont, lieux  
UTILISE vives, mémoires, des

l'opération les : lieux x sont x des x mémoires -> vives est ?

- (a) Un observateur
- (b) Une opération interne
- (c) Une opération externe
- (d) Un observeur

5. Une opération interne ?

- (a) possède au moins un argument défini
- (b) possède au moins un argument prédéfini
- (c) retourne un résultat de type défini
- (d) retourne un résultat de type prédéfini

6. Pour la déclaration

TYPES vrai  
UTILISE mais, incroyable

l'opération c'est : incroyable x mais -> vrai est ?

- (a) Un observateur
- (b) Une opération interne
- (c) Une opération externe
- (d) Un observeur

7. Les TYPES servent à préciser ?
- (a) Les types définis
  - (b) Les types prédéfinis
8. Un observateur ?
- (a) possède au moins un argument défini
  - (b) possède au moins un argument prédéfini
  - (c) retourne un résultat de type défini
  - (d) retourne un résultat de type prédéfini
9. Un type algébrique abstrait est composé ?
- (a) d'une signature ou d'un système d'axiomes
  - (b) d'une signature et d'un système d'axiomes
10. Une constante est une fonction qui ?
- (a) possède au moins un argument défini
  - (b) possède au moins un argument prédéfini
  - (c) ne possède aucun argument
  - (d) ne retourne rien



# QCM 7

lundi 26 septembre 2022

## Question 11

Soit la fonction  $f$  définie pour tout  $x \in \mathbb{R}$  par  $f(x) = 2xe^{3x^2+1}$ . Pour tout réel  $x$ , on a

- a.  $f'(x) = 2e^{6x}$
- b.  $f'(x) = (2 + 12x^2) e^{3x^2+1}$
- c.  $f'(x) = (2 - 12x^2) e^{3x^2+1}$
- d. Aucune des autres réponses

## Question 12

Une primitive sur  $\mathbb{R}$  de  $x \mapsto \frac{x}{x^2+1}$  est

- a.  $x \mapsto \ln(x^2+1)$
- b.  $x \mapsto \frac{1}{2} \ln(1+x^2)$
- c.  $x \mapsto \arctan(x)$
- d. Aucune des autres réponses

## Question 13

Une primitive sur  $\mathbb{R}$  de  $x \mapsto \cos(3x+2)$  est

- a.  $x \mapsto \sin(3x+2)$
- b.  $x \mapsto 3 \sin(3x+2)$
- c.  $x \mapsto -3 \sin(3x+2)$
- d.  $x \mapsto \frac{\sin(3x+2)}{3}$
- e. Aucune des autres réponses

### Question 14

On veut intégrer par parties  $I = \int_0^1 xe^{2x} dx$ . Cela donne

a.  $I = [xe^{2x}]_0^1 - \int_0^1 e^{2x} dx$

b.  $I = [xe^{2x}]_0^1 + \int_0^1 e^{2x} dx$

c.  $I = \left[\frac{xe^{2x}}{2}\right]_0^1 - \frac{1}{2} \int_0^1 e^{2x} dx$

d.  $I = [2e^{2x}]_0^1 + \frac{1}{2} \int_0^1 e^{2x} dx$

e. Aucune des autres réponses

### Question 15

Considérons l'intégrale  $I = \int_0^1 \frac{1}{1+e^x} dx$ . Le changement de variable  $t = e^x$  donne

a.  $I = \int_1^e \frac{1}{t(1+t)} dt$

b.  $I = \int_0^1 \frac{1}{t(1+t)} dt$

c.  $I = \int_1^e \frac{1}{1+t} dt$

d.  $I = \int_0^1 \frac{1}{1+t} dt$

e. Aucune des autres réponses

### Question 16

Considérons l'ensemble  $E = \{A, B, C, D, E\}$ . À partir des éléments de  $E$ , on veut créer des mots de passe. On a :

a. Le nombre de mots de passe composés de 3 éléments distincts de  $E$  est 60.

b. Le nombre de mots de passe composés de 3 éléments distincts de  $E$  est  $5^3$ .

c. Le nombre de mots de passe composés de 5 éléments distincts de  $E$  est  $5^5$ .

d. Le nombre de mots de passe composés de 5 éléments distincts de  $E$  est 5!.

e. Aucune des autres réponses

### Question 17

Soit  $E = [1, 10]$ .

- a. Le nombre de sous-ensembles de  $E$  ayant 3 éléments est  $\frac{10!}{7!}$ .
- b. Le nombre de sous-ensembles de  $E$  ayant 3 éléments est  $\frac{10!}{7! \times 3!}$ .
- c. Le nombre de 3-uplets sans répétition de  $E$  est  $\frac{10!}{7!}$ .
- d. Le nombre de 3-uplets sans répétition de  $E$  est  $\frac{10!}{7! \times 3!}$ .
- e. Aucune des autres réponses

### Question 18

Soient  $n \in \mathbb{N}^*$  et  $k \in [0, n]$ . Le coefficient binomial  $\binom{n}{k}$

- a. est égal à  $\frac{n!}{(n-k)!}$
- b. est égal à  $\frac{k!}{(n-k)! \times n!}$
- c. représente le nombre de sous-ensembles à  $k$  éléments d'un ensemble contenant  $n$  éléments.
- d. représente le nombre de façons de tirer successivement et sans remise  $k$  boules d'une urne en contenant  $n$ .
- e. Aucune des autres réponses

### Question 19

Le nombre d'anagrammes du mot « MATHS » est 5!

- a. Vrai
- b. Faux

### Question 20

Considérons  $A = \{n \in \mathbb{N}, 1 \leq n \leq 13\}$ ,  $B$  un ensemble de cardinal fini. On sait que  $\text{Card}(A \cap B) = 4$  et  $\text{Card}(A \cup B) = 15$ . Alors, on peut prendre

- a.  $B = \{1, 2, 3, 4, 5, 6\}$
- b.  $B = \{1, 4, 5, 10, 25, 36\}$
- c.  $B = [21, 27]$
- d. Aucune des autres réponses

CIE S1 MCQ 1

Date : 26/9/22

**Deadly Mistakes :**

Which of the following sentences is correct ? (Questions 21-25)

21. A) Evryone that comes to Epita, wants to become an engineer.  
B) Everyone that come to Epita, want to become an engineer.  
C) Every people that come to Epita, want to become an engineer.  
✓ D) Everyone that comes to Epita, wants to become an engineer.
- ✓ 22. A) On one hand, smokers should have the right to smoke if they want to, but on the other hand, non-smokers should have the right to breathe smoke-free air.  
✗ B) In one hand, smokers should have the right to smoke if they want to, but on the other hand, non-smokers should have the right to breathe smoke-free air.  
✗ C) In one hand, smokers should have the right to smoke if they want to, but in the other hand, non-smokers should have the right to breathe smoke-free air.  
D) On a hand, smokers should have the right to smoke if they want to, but on the other hand, non-smokers should have the right to breathe smoke-free air.
23. A) 'Are you looking for John ? I have seen him five minutes ago.'  
B) ' Are you looking for John ? I had saw him five minutes ago.'  
✓ C) 'Are you looking for John ? I saw him five minutes ago.'  
D) 'Are you looking for John ? I was seeing him five minutes ago.'
24. ✗ A) Our vacation was great except it rained the most of the days.  
✗ B) Our vacation was great except it rained most of days.  
✓ C) Our vacation was great except it rained most of the days.  
✗ D) Our vacation was great except it rained the most days.
- ✓ 25. A) She bored everybody by delivering a two-hours lecture on the Philosophy of Human Geography.  
B) She bored everybody by delivering an two-hours lecture on the Philosophy of Human Geography.  
✓ C) She bored everybody by delivering a two-hour lecture on the Philosophy of Human Geography.  
D) She bored everybody by delivering a two-hour's lecture on the Philosophy of Human Geography.

Reading Comprehension :

Questions 26-28 refer to the following email :

From:	Maria Jacobsen
To:	Rina Evans
Sent:	June 5
Subject:	Automobile Insurance Policy #35629

Hello, Rina,  
Mr. Williams sent me his personal information, which I have pasted into this e-mail.  
Would you make a copy and put it in the customer's file, please?  
Thanks,  
Maria

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Hello, Ms. Jacobsen,

Thanks for getting back to me so quickly. In answer to your questions, I purchased the used car last month on May 7 from the original owner, John Weldon. The car is a four-year-old Festo 645, and it still has the original black paint. I have registered the car and installed the license plates, 2B ON77. I've read through your company's list of policies, and I think I'd like to sign up for the comprehensive insurance. My home phone number is 343-555-3792. I'll have a copy of my driving record faxed to you by next week. In the meantime, please let me know if I need to provide any other information.

Thanks for your help,  
David Williams

26. What does Ms. Jacobsen ask Ms. Evans to do ?

- A) File information about a customer.
- B) Provide a customer with a price quote.
- C) Contact a customer about a new policy.
- D) Compose an email message to a customer.

27. What information about the car is NOT given?

- A) Its color
- B) Its license plate number
- C) Its price
- D) Its purchase date

28. Who was the first owner of the car ?

- A) Rina Evans
- B) Maria Jacobsen
- C) David Williams
- D) John Weldon

Questions 29-30 refer to the following article :

# RAMONVILLE TIMES

August 8

The Ramonville Drama Committee (RDC) is now accepting applications for committee membership for the coming year.

The RDC produces stage plays at the Ramonville Theater House. Committee responsibilities include arranging actor auditions and performance rehearsals, and selling tickets at the theater box office.

Members must have a strong interest in theater and be able to attend committee meetings once a month.

The RDC has received much public recognition for its work, including an Exceptional Public Service Award from the mayor's office.

If you are interested in joining the RDC, please visit the committee's Web site at [www.ramonvilledrama.org](http://www.ramonvilledrama.org) to download a membership application. Applications can also be obtained by contacting the committee chair, Yolanda Wang, at 454-555-9878.

29. What is the purpose of this article ?

- A) To announce an awards contest
- B) To advertise auditions
- C) To publicize a theatre event
- ✓ D) To recruit committee members

30. How can people obtain more information about RDC ?

- A) By visiting the mayor's office
- ✓ B) By calling Yolanda Wang
- C) By emailing the Ramonville Times
- D) By attending an August meeting



QCM English TIM S1-1: Identify the error in each of the following sentences:

31. For make its nest, the yellow-headed blackbird weaves a small cup and fastens it to reeds above water.  
✓ a. for make  
b. its  
c. weaves  
d. above
32. Native American beaded designs are often characterized by geometric shaped and bright colors.  
a. beaded  
b. characterized  
✓ c. shaped  
d. bright
33. The codfish lays million of eggs each year, only a small percentage of which actually hatch.  
a. lays  
✓ b. million  
c. only  
d. of which
34. When the body becomes extremely overheated, it failure to cool itself again, and sunstroke can occur.  
a. extremely  
✓ b. failure  
c. itself  
d. can occur
35. The preferring of many Western cultures for maintaining a physical distance of at least three feet during social interaction is well documented in anthropological studies.  
✓ a. preferring  
b. many  
c. maintaining  
d. at least
36. In chronicling her months as a captive of the Wampanoag Indians, Mary Rowlandson demonstrated his narrative skill.  
✓ a. in chronicling  
b. as  
c. demonstrated  
✓ d. his
37. The nests of most bird species are strategic placed to camouflage them against predators.  
a. most  
b. species  
✓ c. strategic  
d. against predators
38. Few synthetic vitamins and minerals in pill supplements are absorbed so efficiently by the body that are those occurring naturally in foods.  
a. by the body  
✓ b. that are  
c. occurring  
d. in foods
39. On the one hand, most Americans feel that space exploration is a legitimate and important national undertaking; on the contrary, they worry about the amount it costs.  
a. feel  
b. and important  
✓ c. on the contrary  
d. worry about
40. Vitamin K providing the necessary impetus for the synthesis of at least two proteins involved in blood clotting.  
✓ a. providing  
b. necessary  
c. at least  
d. involved