

ALGO  
QCM

1. L'implémentation d'une liste récursive sous la forme d'un tableau d'éléments, est dite ?
  - (a) statique
  - (b) chaînée
  - (c) contiguë
  - (d) dynamique
  
2. Une pile est une structure intrinsèquement ?
  - (a) Récursive
  - (b) Itérative
  - (c) Répétitive
  - (d) Alternative
  
3. Quelles opérations définissent une liste récursive ?
  - (a) debut
  - (b) longueur
  - (c) fin
  - (d) cons
  
4. La construction d'une liste itérative est basée sur ?
  - (a) L'ajout d'un élément à la première place d'une liste
  - (b) La récupération du reste de la liste
  - (c) L'insertion d'un élément à la  $K^{ième}$  place
  - (d) L'ajout d'un élément en tête de liste
  
5. L'implémentation d'une liste itérative sous la forme d'une liste chaînée, n'est pas possible ?
  - (a) faux
  - (b) vrai
  
6. Une file est une structure ?
  - (a) LIFO
  - (b) PIPO
  - (c) FIFO
  - (d) FILO
  
7. L'implémentation d'une pile sous la forme d'un tableau d'éléments, est dite ?
  - (a) statique
  - (b) chaînée
  - (c) contiguë
  - (d) dynamique

8. Que représentent opération1 et opération2 dans l'axiome suivant (dans lequel e est un élément et x une pile) ?

$$\text{opération1}(\text{opération2}(e,x)) = e$$

- (a) opération1 = sommet, opération2 = dépiler
- (b) opération1 = dépiler, opération2 = sommet
- (c) opération1 = sommet, opération2 = empiler
- (d) opération1 = dépiler, opération2 = empiler

9. Une pile est une structure ?

- (a) LIFO
- (b) PIPO
- (c) FIFO
- (d) FIPO

10. Que représentent x, opération1 et opération2 dans l'axiome suivant (dans lequel e est un Elément) ?

$$\text{est-vide}(x) = \text{faux} \Rightarrow \text{opération1}(\text{opération2}(x,e)) = \text{opération2}(\text{opération1}(x),e)$$

- (a) x est une File, opération1 = enfiler, opération2 = défiler
- (b) x est une Pile, opération1 = dépiler, opération2 = empiler
- (c) x est une File, opération1 = défiler, opération2 = enfiler
- (d) x est une Pile, opération1 = ajouter, opération2 = empiler



## QCM Electronique – InfoS1

Pensez à bien lire les questions ET les réponses proposées (attention à la numérotation des réponses)

Soit une tension sinusoïdale  $v(t) = V \cdot \sqrt{2} \cdot \sin(\omega t + \varphi)$ . On note  $\underline{V}$ , l'amplitude complexe associée à  $v(t)$ . (Q21&22)

Q21. Quel est le module de  $\underline{V}$  ?

- a.  $V$ 
 b.  $\varphi$ 
 c.  $\omega t$ 
 d.  $V \cdot \sqrt{2}$

Q22. Quel est l'argument de  $\underline{V}$  ?

- a.  $\omega t + \varphi$ 
 b.  $\varphi$ 
 c.  $\omega t$ 
 d.  $V$

On considère une résistance  $R$ , un condensateur de capacité  $C$  et une bobine d'inductance  $L$ . (Q23 à 26)

Q23. On associe le condensateur et la résistance en parallèle. Quelle est alors l'impédance complexe équivalente  $\underline{Z}$  ?

- a.  $\underline{Z} = \frac{R}{1+jRC\omega}$ 
 b.  $\underline{Z} = \frac{1}{R} + jC\omega$ 
 c.  $\underline{Z} = \frac{jRC\omega}{R+jC\omega}$ 
 d.  $\underline{Z} = \frac{1}{R} + C$

Q24. On associe la bobine et le condensateur en série. Quelle est alors l'impédance complexe équivalente  $\underline{Z}'$  ?

- a.  $\underline{Z}' = L + C$ 
 b.  $\underline{Z}' = jC\omega + \frac{1}{jL\omega}$ 
 c.  $\underline{Z}' = j(L + C)\omega$ 
 d.  $\underline{Z}' = \frac{1-LC\omega^2}{jC\omega}$

Q25. On associe la bobine et le condensateur en parallèle. Quelle est alors l'impédance complexe équivalente  $\underline{Z}''$  ?

- a.  $\underline{Z}'' = \frac{jL\omega}{1-LC\omega^2}$ 
 b.  $\underline{Z}'' = \frac{1}{L} + \frac{1}{C}$ 
 c.  $\underline{Z}'' = \frac{1}{jL\omega} + jC\omega$ 
 d.  $\underline{Z}'' = \frac{1-LC\omega^2}{jC\omega}$

**Q26.** Quel est alors le déphasage du courant qui traverse  $\underline{Z}''$  par rapport à la tension à ses bornes ?

- a.  $+\frac{\pi}{2}$
- b.  $-\frac{\pi}{2}$
- c.  $-\pi$
- d.  $\pm\frac{\pi}{2}$  selon la fréquence

**Q27.** Quelle est l'unité du produit  $L\omega$  ?

- a. Des Siemens
- b. Des Hertz
- c. Des Ohms
- d. Il n'y en a pas

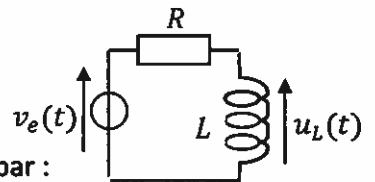
**Q28.** Que représente l'argument d'une impédance complexe d'un dipôle ?

- a. Le quotient des valeurs efficaces du courant et de la tension du dipôle
- b. La valeur instantanée de la tension
- c. Le déphasage de la tension à ses bornes par rapport au courant qui le traverse.
- d. La phase à l'origine

**Q29.** Soit le circuit ci-contre, où  $v_e(t) = V_E \cdot \sqrt{2} \sin(\omega t)$ .

L'amplitude complexe de la tension aux bornes de la bobine est donnée par :

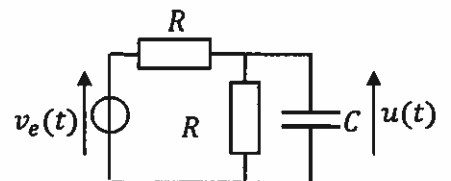
- a.  $\underline{U}_L = \frac{L}{R+L} \cdot V_E$
- b.  $\underline{U}_L = \frac{jL\omega}{R+jL\omega} \cdot V_E$
- c.  $\underline{U}_L = \frac{L}{R+L} \cdot V_E \sin(\omega t)$
- d.  $\underline{U}_L = \frac{jL\omega}{R+jL\omega} \cdot V_E$



**Q30.** Soit le circuit ci-contre, où  $v_e(t) = V_E \cdot \sqrt{2} \sin(\omega t)$ :

L'amplitude complexe de la tension  $u(t)$  est donnée par :

- a.  $\underline{U} = \frac{1}{1+jRC\omega} V_E$
- b.  $\underline{U} = \frac{V_E \sin(\omega t)}{1+jRC\omega}$
- c.  $\underline{U} = \frac{V_E}{R+jC\omega}$
- d.  $\underline{U} = \frac{V_E}{2+jRC\omega}$



# QCM 6

## Architecture des ordinateurs

Lundi 27 novembre 2023

Pour toutes les questions, une ou plusieurs réponses sont possibles.

31.  $A \oplus B =$

- A.  $\overline{A}.\overline{B} + A.B$
- B.  $\overline{A} \oplus B$
- C.  $\overline{A}.B + A.\overline{B}$
- D.  $\overline{A} \oplus \overline{B}$

32.  $A + B.C =$

- A.  $(A + B).(B + C)$
- B. Aucune de ces réponses.
- C.  $(A + B).(A + C)$
- D.  $(A + C).(B + C)$

33.  $A + B + C + D + E + \overline{A} =$

- A. 1
- B. 0
- C.  $B + C + D + E$
- D. A

34.  $A + A.B + A.B.C + A.B.C.D =$

- A. Aucune de ces réponses.
- B. 0
- C. 1
- D. A

35.  $A + \overline{A}.B + \overline{A}.B.C + \overline{A}.B.C.D =$

- A. Aucune de ces réponses.
- B.  $A + B$
- C. 0
- D. 1

36.  $X = A.B.C + A.B.D + \bar{A}.B.C$

- A. X est un produit de sommes.
- B. X est une première forme canonique.
- C. X est une seconde forme canonique.
- D. Aucune de ces réponses.

37.  $X = (A + B + C).(B + A + \bar{C}).(\bar{A} + C + B)$

- A. X est un produit de sommes.
- B. X est une première forme canonique.
- C. X est une seconde forme canonique.
- D. Aucune de ces réponses.

38.  $X = A.B + \bar{A}.B + \bar{A}.\bar{B}$

- A. X est un produit de sommes.
- B. X est une première forme canonique.
- C. X est une seconde forme canonique.
- D. Aucune de ces réponses.

39.  $X = \bar{B} + A.C$

Quelle est la première forme canonique de X ?

- A.  $A.C.B + A.\bar{C}.B + \bar{A}.C.B + \bar{A}.\bar{C}.B + \bar{A}.\bar{C}.\bar{B}$
- B.  $(A + C + \bar{B}).(A + \bar{C} + \bar{B}).(\bar{A} + C + \bar{B})$
- C.  $\bar{A}.\bar{C}.\bar{B} + \bar{A}.C.\bar{B} + A.\bar{C}.\bar{B} + A.C.\bar{B} + A.C.B$
- D.  $(\bar{A} + \bar{C} + B).(\bar{A} + C + B).(A + \bar{C} + B)$

40.  $X = \bar{B} + A.C$

Quelle est la seconde forme canonique de X ?

- A.  $A.C.B + A.\bar{C}.B + \bar{A}.C.B + \bar{A}.\bar{C}.B + \bar{A}.\bar{C}.\bar{B}$
- B.  $(A + C + \bar{B}).(A + \bar{C} + \bar{B}).(\bar{A} + C + \bar{B})$
- C.  $\bar{A}.\bar{C}.\bar{B} + \bar{A}.C.\bar{B} + A.\bar{C}.\bar{B} + A.C.\bar{B} + A.C.B$
- D.  $(\bar{A} + \bar{C} + B).(\bar{A} + C + B).(A + \bar{C} + B)$

## ADP MCQ 6; 27/11/23

Graph 1:

41. What does Graph 1 show?

- a) The distribution of Asian populations throughout the USA.
- b) Americans living in 16 Asian countries.
- c) The distribution of the Chinese population in different parts of the US.
- d) The evolution of the Indian population living in the US.

42. How has the number of Asians living in the US changed over the past 30 years, according to the New York Times?

- a) No change
- b) It has doubled
- c) It has tripled
- d) It has quadrupled

43. Which of the following CAN be seen in the graph?

- a) The highest number of Asians living in the US is the Pakistanis.
- b) The Burmese immigrants are clustered around mostly in Alaska.
- c) There is a high number of immigrants from Nepal and Indonesia.
- d) Most Asian immigrants live in the Western part of the US.

44. What CANNOT be seen on the graph?

- a) Names of the states where Asians live.
- b) The total number of Koreans living in the US.
- c) Indonesians representing the smallest group.
- d) States where the Asian population makes up more than 0.5% of the total population.

45. Which conclusion could be drawn directly from the graph?

- a) Asians are now the fastest growing of the nation's four largest racial and ethnic groups.
- b) There are at least 20 Asian nationalities living in America.
- c) Almost 20 million Asians live in the USA.
- d) U.S. Asians are geographically diverse and have a broad variation in income.

Grammar: Choose the ONE correct completion.

46. Bobby and Rita \_\_\_\_\_ in Rome \_\_\_\_\_ 10 years.

- a. lives / since
- b. have lived / since
- c. have lived / for
- d. lives / for

47. \_\_\_\_\_ Cynthia was little, she \_\_\_\_\_ to be a footballer.

- a. For / wants
- b. For / has wanted
- c. Since / has wanted
- d. Since / wants

48. Stella \_\_\_\_\_ New York six times \_\_\_\_\_ she started university.

- a. has visited / since
- b. visited / for
- c. visits / since
- d. visiting / for

49. I \_\_\_\_\_ for you to call \_\_\_\_\_ weeks.

- a. waits / since
- b. waits / for
- c. have been waiting / since
- d. have been waiting / for

50. Paul \_\_\_\_\_ balloons \_\_\_\_\_ you got here.

- a. has blown up / for
- b. has been blowing up / since
- c. blew up / since
- d. blows up / for



Look at the following texts and answer the questions 51 to 55:

## Rose Hill Hotel



### SEMINAR SCHEDULE – JULY 18, 20\_\_

**9:00 – 10:15 am** Gardenia Room. **New Rules for the Work Force.** Cranston Davis, a personnel consultant with Davis & Associates, will lead a discussion on how the rules recently adopted by the Department of Labor will impact small and medium-sized companies.

**9:30 – 11:00 am** Green Orchid Room. **Introduction to Trademarks.** Miranda Romero, an attorney with Romero & Brown, will explain the concept of a trademark, and why protecting your company's mark is fundamental to its success.

**10:30 – 12:00 pm** Blue Rose Room. **Make your Advertising Sing!** John White, an advertising consultant with Chang & Associates, will provide tips on how to make your Internet advertising stand out from the competition.

**12:00 – 1:30 pm** Cafeteria. **Buffet Lunch.**

**1:30 pm – 4:00 pm** Green Orchid Room. **Privacy for All.** Concerns about privacy are everywhere. Margaret Bloomstad will lead a presentation on how the company has implemented new privacy protections for our clients, including significant changes to the ways we handle our clients' confidential personal and financial information.

**3:30 pm – 4:45 pm** Gardenia Room. **Sales Retrospective.** We all know it's important to gain new customers, but what about meeting additional needs of our existing customer base? Sara Mendez, sales manager for the Rose Hill Hotel, talks about how we can market additional products to clients already on our books, and build upon those relationships already in place.

**To:** Seminar Planning Committee  
**From:** Sandy Montgomery  
**Date:** June 4, 20\_\_  
**Re:** Seminar Schedule

Hi Team,

I have just reviewed the draft schedule for next month's seminar. Congratulations on putting together such an impressive list of speakers. I heard Cranston Davis speak last month – outstanding. John White was also a speaker for us several years ago, and did an excellent job.

Unfortunately, we're going to have to move things around a bit. The presentation on work force rules is mandatory for everyone, so we can't have that presentation overlap with anything else. I don't think the privacy presentation will take more than 90 minutes, so maybe we can tighten that up a bit. John White also left me a message, and asked if we could move his presentation to the afternoon.

Are there any other issues? Will anyone need any audio-visual equipment? Let me know by the end of the day tomorrow, so we can begin finalizing the arrangements.

Sandy

**To:** Sandy Montgomery  
**From:** John Forsythe  
**Date:** June 5, 20\_\_  
**Re:** Seminar Schedule

Hi Sandy,

Thanks for your memo. I'm not sure how to fix the scheduling problems you noted, but here are some ideas.

Margaret's assistant told me yesterday that Margaret only needs an hour for her presentation, and that she is free any time during the day. What about moving her to the morning, and giving her afternoon time slot to John?

Can we move the presentation on Work Force Rules to the afternoon? Miranda Romero only has the one time slot available for her presentation. We either leave her at 9:30 to 11:00, or we have to find another speaker to replace her. It would be a shame to lose her, in my opinion.

So long as we have a microphone and a projector for presentation slides in each conference room, I don't think we need any other equipment.

Let me know what you think of the proposed schedule changes, when you have a moment. We can also talk about this at the next committee meeting.

John

51. What problem is Sandy trying to solve?
- a. She has already heard Margaret Bloomstad speak.
  - b. The schedule of presentations must be re-arranged.
  - c. There is only one presentation in the Blue Rose Room.
  - d. There is no audio-visual equipment.
52. Who is John Forsythe?
- a. A replacement speaker at the seminar.
  - b. An employee of Miranda Romero.
  - c. A member of the Seminar Planning Committee.
  - d. Manager of the Rose Hill Hotel.
53. What is definitely true about Miranda Romero?
- a. She can give her presentation in the afternoon.
  - b. Her presentation is currently at an inconvenient time.
  - c. She is an accountant.
  - d. Sandy Montgomery has heard her speak before.
54. What presentation must all participants attend?
- a. New Rules for the Work Force.
  - b. Introduction to Trademarks.
  - c. Privacy for Ali.
  - d. Sales Retrospective.
55. Who works for the Rose Hill Hotel?
- a. Sandy Montgomery.
  - b. John Forsythe.
  - c. Cranston Davis.
  - d. Sara Mendez.

**Turn to the next page.**

Look at the following texts and answer the questions 56 to 60:

# THE MORGAN CITY HERALD

Monday, April 16

The State Bureau of Tourism is predicting a banner year. Camping should be more popular than ever, with state parks full every weekend. Beach traffic also should be high, as the

summer should be warmer than normal. The increased revenue from tourism is important to the state, and strong tourism seasons have usually resulted in financial boosts to libraries and schools. The state, however, will make its budgeting decisions in the fall.

Date: October 1, 20\_\_

From: Wendy Miller, State Bureau of Tourism

To: Candace Chu, Morgan Consulting

Subject: Summer Data

Hi Candace,

It's time for the annual surveys of tourism industry businesses to see how the summer panned out for everyone. I know our expectations were not met, due to the weather and gas prices. Indeed, I suspect a couple of sectors had seasons that were worse than last year.

We also need to focus on the businesses near the coast. Mark Rogers from the Department of State Parks has already reported disappointing figures for the campgrounds under his jurisdiction; I'm hoping the same is not true for resorts near the water. Diana Suh, my assistant, will also be working with you to make sure everything from our end goes smoothly.

Let me know if you need anything else for your work. I look forward to your report.

Wendy

# THE MORGAN CITY HERALD

Wednesday October 31

## Weather, High Gas Prices Resulted in Depressed Summer Travel

The State Bureau of Tourism has confirmed what many already knew: the summer was a disappointment. Visits to the state's parks increased by less than one percent, and hotel reservations were down slightly. State economists estimated that tourism added \$450 million to the economy, which was barely up from the \$445 million earned last year. "It was a rough season," admitted Sandra Mulligan, head of the Bureau.

Several factors contributed to the mediocre tourism season. The summer was unusually cool, with temperatures 3 °C lower than average. As a result, fewer people went to the beach. Gasoline prices were five cents a liter higher than last year, and the high rate of unemployment hampered many people's travel plans. "People decided against the long vacation this year, preferring instead a number of long weekends close to home," said Gordon Anderson, professor of economics at Redman University. Professor Anderson noted that among other things, usage of municipal parks and local pools was up almost eight percent, despite the cooler weather.

Questions are on the next page

56. What does the first article predict?
- a. More traffic jams.
  - b. More people camping this year than last.
  - c. An increased tax rate.
  - d. Better schools and libraries.
57. Who is Mark Rogers' employer?
- a. The Morgan City Herald.
  - b. Redman University.
  - c. The Department of State Parks.
  - d. Morgan Consulting.
58. According to the second article, what did the State experience?
- a. A decrease in visits to state parks.
  - b. A change in the head of the Bureau of Tourism.
  - c. Fewer people using local swimming pools.
  - d. Cooler than expected weather.
59. In the first article, the word "banner" in line 1 is closest in meaning to:
- a. superb
  - b. mediocre
  - c. horrific
  - d. sub-par
60. What was an effect of the weather this summer in the state?
- a. Fewer people went to the beaches.
  - b. Unemployment increased.
  - c. Tax revenues stayed the same.
  - d. More people took long trips.