

ALGO
QCM

1. L'implémentation d'une liste récursive sous la forme d'un tableau d'éléments, est ?

- ☒ (a) statique
- (b) chaînée
- ☒ (c) contiguë
- (d) dynamique

2. L'implémentation sous forme de liste chaînée est ?

- (a) statique
- (b) extatique
- (c) contiguë
- ☒ (d) dynamique

3. L'implémentation d'une file sous la forme d'une liste chaînée, n'est pas possible ?

- ☒ (a) faux
- (b) vrai

4. Une pile est une structure ?

- ☒ (a) LIFO
- (b) PIPO
- (c) FIFO
- (d) FILO

5. Une file est une structure ?

- (a) LIFO
- (b) PIPO
- ☒ (c) FIFO
- (d) FILO

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

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

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

7. 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
8. L'important dans les ensembles c'est ?
- (a) la position d'un élément dans un ensemble
 - (b) la place d'un élément dans un ensemble
 - ☒ (c) l'appartenance d'un élément à un ensemble
 - (d) l'ordre d'un élément dans un ensemble
9. Quelle opération permet de récupérer le nombre d'occurrences d'un élément dans un multi-ensemble ?
- (a) count
 - (b) compte
 - (c) occ
 - (d) card
 - ☒ (e) nboccurrences
10. Un élément ne peut pas être présent plusieurs fois dans un ensemble ?
- (a) faux
 - ☒ (b) vrai



CIE MCQ 7

6/12/22

Grammar:

Questions 21-25 - tick the correct sentence

21.

- ☒ A) Jack was planning to go to the movie, but he didn't go.
- B) Jack is planning to go the movie, but he didn't go.
- C) Jack is planning to go to the movie, but he couldn't go.
- D) Jack was planned to go to the movie, but he should go.

22.

- A) Tim and James hoped to visit the cathedral dome but will dare not.
- B) Tim and James are hoping to visit the cathedral dome, but they wouldn't.
- C) Tim and James are hoping to visit the cathedral dome, but they couldn't.
- ☒ D) Tim and James were hoping to visit the cathedral dome, but they couldn't.

23.

- A) I thought about going to London to see the Queen lying in state, but I can't go.
- ☒ B) I was thinking about going to London to see the Queen lying in state, but I didn't go.
- C) I thought about going to London to see the Queen lying in state, but I didn't go.
- D) I am thinking about going to London to see the Queen lying in state, but I didn't.

24.

- ☒ A) She was intending to pay for the meal, but she didn't.
- B) She is intending to pay for the meal, but she couldn't.
- C) She was intending to pay for the meal, but she weren't able to.
- D) She was to pay for the meal, but she ought to.

25.

- A) They are going to come to the team meeting, but they couldn't.
- B) They were to come to the team meeting, but they ought to.
- ☒ C) They were going to come to the team meeting, but they couldn't.
- D) They are going to come to the team meeting, but they won't.

Graph 7

26. What does Graph 7 show?

- A) A map based on European risks.
- ☒ B) A map based on people seeking asylum.
- C) A map on population density.
- D) A map based on tourists in Eastern Europe.

27. What type of graph is graph 7?

- A) A slope chart
- B) A times series graph
- ☒ C) An infographic
- D) A heatmap

28. What does each dot represent in this graph?

- A) The cities where refugees reside in.
- B) 100 refugees.
- C) The total number of refugees in each city.
- ☒ D) 1,000 refugees.

29. Which of the following is NOT true according to graph 7?

- A) These are refugees from Ukraine.
- B) Poland has one of the biggest refugee counts.
- C) Belarus has the lowest refugee count.
- ☒ D) Romania's count is as the same as the others.

30. Which title fits best for this graph?

- A) Europe needs to help its own countries.
- B) Ukraine is becoming an empty country.
- ☒ C) The consequence of Russia's invasion in Ukraine.
- D) The many problems Ukraine faces.

Look at the following texts and answer the questions 31 to 35:

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

31. 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.
32. 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.
33. 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.
34. What presentation must all participants attend?
- ☒ a. New Rules for the Work Force.
 - ☐ b. Introduction to Trademarks.
 - ☐ c. Privacy for Ali.
 - ☐ d. Sales Retrospective.
35. Who works for the Rose Hill Hotel?
- ☐ a. Sandy Montgomery.
 - ☐ b. John Forsythe.
 - ☐ c. Cranston Davis.
 - ☒ d. Sara Mendez.

Turn to the next page.

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.

36. 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.
37. Who is Mark Rogers' employer?
- ☐ a. The Morgan City Herald.
 - ☐ b. Redman University.
 - ☒ c. The Department of State Parks.
 - ☐ d. Morgan Consulting.
38. 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.
39. In the first article, the word "banner" in line 1 is closest in meaning to:
- ☒ a. superb
 - ☐ b. mediocre
 - ☐ c. horrific
 - ☐ d. sub-par
40. 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.

QCM Physique/Electronique – InfoS1

Pensez à bien lire les questions ET les réponses proposées

Pour les questions suivantes, une ou plusieurs bonnes réponses sont possibles.

Q41. Lorsque la somme des forces s'appliquant sur un solide non ponctuel est nulle, le solide est immobile.

a. VRAI

☒ b. FAUX

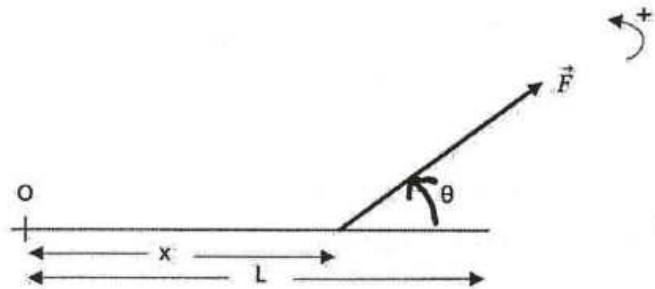
Q42. On considère une force \vec{F} s'appliquant sur une barre de longueur L à une distance x du point O . La force fait un angle θ avec la barre. On notera $\|\vec{\mathcal{M}}_O(\vec{F})\|$ la norme du moment de la force \vec{F} par rapport au point O . Cette norme a pour expression :

a. $\|\vec{\mathcal{M}}_O(\vec{F})\| = F \cdot x$

☒ b. $\|\vec{\mathcal{M}}_O(\vec{F})\| = F \cdot x \cdot \sin\theta$

c. $\|\vec{\mathcal{M}}_O(\vec{F})\| = F \cdot x \cdot \cos\theta$

d. $\|\vec{\mathcal{M}}_O(\vec{F})\| = F \cdot \cos\theta$



Q43. On désigne par $\sum \vec{\mathcal{M}}_O(\vec{F}_{ext})$ la somme des moments des forces extérieures appliquées sur un solide. Le solide est à l'équilibre de rotation lorsque :

☒ a. $\sum \vec{\mathcal{M}}_O(\vec{F}_{ext}) = \vec{0}$

b. $\sum \vec{\mathcal{M}}_O(\vec{F}_{ext}) = \text{constante}$

c. $\sum \vec{F}_{ext} = \vec{0}$

d. $\sum \|\vec{\mathcal{M}}_O(\vec{F}_{ext})\| = 0$

Q44. On considère le solide ci-contre :
 $L = 1 \text{ m}$; $F = 20 \text{ N}$.

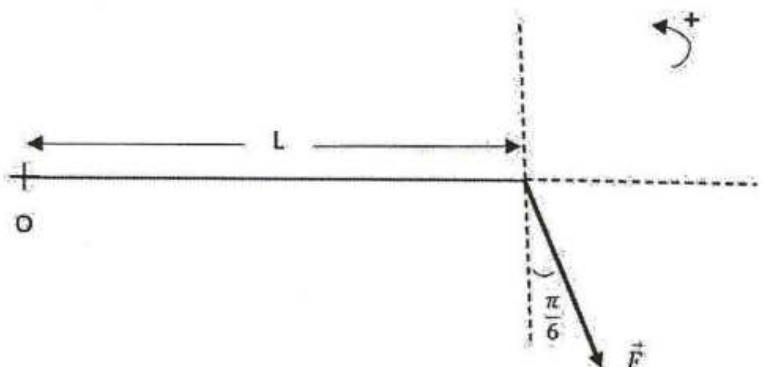
Le moment de la force \vec{F} est égal à :

a. $10\sqrt{3} \text{ N.m}$

☒ b. $-10\sqrt{3} \text{ N.m}$

c. 10 N.m

d. -10 N.m



Q45. Le moment d'une force dont la droite d'action (droite support) passe par le pivot (centre de rotation) :

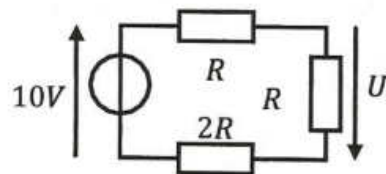
- a. Est strictement positif
- b. Favorise le mouvement
- c. N'a aucun effet sur le mouvement
- d. Est nul

Q46. L'intensité du courant qui sort d'un dipôle passif est inférieure à l'intensité de celui qui y rentre.

- a- VRAI
- b- FAUX

Q47. Dans le circuit ci-contre, que vaut U ?

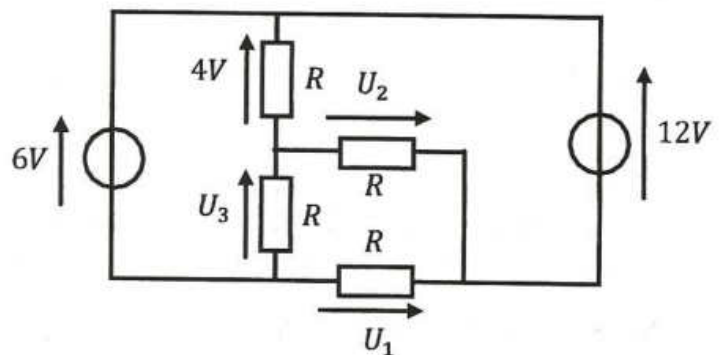
- a. $2,5\text{ V}$
- b. $-2,5\text{ V}$
- c. 5 V
- d. -5 V



Soit le circuit ci-contre (Q48&49):

Q48. Que vaut la tension U_1 ?

- a. 6 V
- b. -6 V
- c. -18 V
- d. 18 V

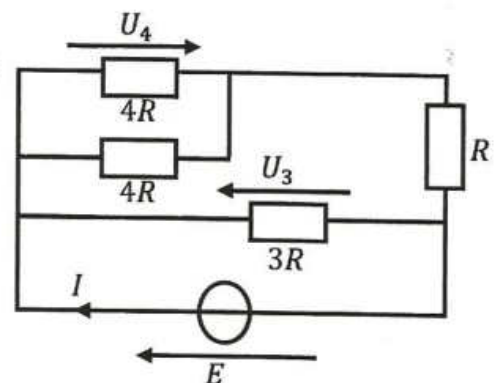


Q49. Que vaut la tension U_2 ?

- a. -6 V
- b. 8 V
- c. 6 V
- d. -8 V

Q50. Soit le circuit ci-contre. L'intensité du courant I est égale à :

- a. $\frac{5.E}{6R}$
- b. $\frac{2.E}{3R}$
- c. $\frac{3}{2} \cdot \frac{E}{R}$
- d. $\frac{3R}{2} \cdot E$



56. $A + B + C + D + E + \bar{A} =$

A. 0

☒ B. 1

C. A

D. $B + C + D + E$

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

A. 0

B. 1

☒ C. A

D. Aucune de ces réponses.

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

A. 0

B. 1

☒ C. $A + B$

D. Aucune de ces réponses.

59. $X.(\bar{Y} + Z) + Y.\bar{X}.\bar{Z} =$

A. $X \oplus (Y.Z)$

☒ B. $X \oplus (Y.\bar{Z})$

C. $X \oplus (\bar{Y}.Z)$

D. $X \oplus (\bar{Y}.\bar{Z})$

60. $\overline{X.Y + Z} =$

A. $\bar{X}.\bar{Y}.\bar{Z}$

B. $\bar{X}.\bar{Y} + \bar{Z}$

C. $\bar{X}.\bar{Y} + \bar{Y}.\bar{Z}$

☒ D. $\bar{X}.\bar{Z} + \bar{Y}.\bar{Z}$

1 - Quel est le taux moyen de pénétration d'internet dans les pays occidentaux ?

- A) Inf. à 50%
- B) entre 50 et 70%
- ☒ C) Sup à 70%

2 - Quels critères définissent la cybersécurité

- ☒ A) Disponibilité, Confidentialité, Intégrité, Traçabilité
- B) Disponibilité, Capacité, Intégrité, Traçabilité
- C) Disponibilité, Confidentialité, Informativité, Traçabilité

3 - Quelle part du PIB européen représente la cybercriminalité ?

- A) 0,1%
- ☒ B) 1%
- C) 10%

4 - La LPM introduit la notion de

- A) SSIV : Systèmes spéciaux d'importance vitale
- ☒ B) SIIV : Systèmes d'information d'importance vitale
- C) SIC : Systèmes d'information et de communication

5 - Combien dénombre-t-on de secteurs d'activité d'importance vitale ?

- ☒ A) 12 (répartis en 4 dominantes)
- B) 12 (répartis en 6 dominantes)
- C) 16 (répartis en 4 dominantes)

6 - L'espionnage industriel concerne

- A) Les entreprises du secteur industriel
- B) Les entreprises co gérées par l'Etat et les collectivités territoriales
- ☒ C) Toutes les organisations

7 - Les règles d'Asimov

- A) Concernent uniquement la robotique
- ☒ B) S'appliquent à tout système d'Intelligence Artificielle
- C) Diffusées en 1942, sont désuètes

8 - La smart city requiert

- A) De grands espaces
- B) Une cybersécurité intégrée et à jour
- ☒ C) Une cybersécurité bâtie pour durer

9 - A l'avenir

- A) Il y aura moins de crises et plus de technologie
- ☒ B) Les crises seront plus fréquentes
- C) Les crises seront moins impactantes

10 – En résumé, la cybersécurité

- A) Sera intégrée de manière native et facile à gérée
- ☒ B) Nécessitera toujours une approche holistique
- C) Continuera à être traitée à faible coût