**DST type Mines-Ponts 12/03/25 1h30 PSI**

**Pour faciliter la correction de l'épreuve, les candidats écriront leur texte toutes les deux lignes.**

**Dans les deux questions de l'exercice d'expression écrite, le candidat indiquera lui-même le nombre de mots employés dans sa réponse. Le non respect des limites indiquées sera sanctionné.**

**EXPRESSION**

Why pushing STEM majors is turning out to be a terrible investment

Republicans and Democrats don’t seem to agree on much these days but both political parties have for years supported spending billions on Science, Technology, Engineering and Math (STEM) education. Their goals include reducing perceived shortages of STEM workers, boosting American innovation and competitiveness and diversifying this highly paid workforce. The message of lucrative STEM careers appears to have reached students and tuition-paying parents — the number of STEM majors has jumped in recent years.

But there is a problem with these massive investments: Most STEM graduates don’t work in STEM occupations. The Census Bureau reported in 2021 that only 28% of STEM grads are working in these supposedly in-demand, highly paid and important STEM jobs. These include diverse sectors such as pharmaceuticals, chemicals and energy, but about half of STEM jobs are in computers, and tech firms typically complain the loudest of STEM shortages. What’s causing this disconnect?

One key factor is wages. Many able STEM graduates leave for better-paying careers, especially in business, finance, management and medicine. Some do find high salaries in STEM jobs, many right out of college, especially in hot fields such as AI. But STEM graduates even in the most dynamic sectors, including computer science and engineering, see their salary advantage fade over time, increasing the odds that they’ll leave for greener pastures.

It is employers, of course, who set wages at their firms, and current wage levels are not keeping most STEM graduates in STEM jobs. Some of the wealthiest companies — Apple, Google, Adobe Systems and Intel — settled a class-action lawsuit1 for $415 million in 2015 after workers accused employers of using illegal means to prevent salary increases.

STEM grads may also flee the “burn-and-churn” management common in STEM jobs. We’ve been bombarded by images of young and happy STEM workers playing foosball and skateboarding to free snacks or meditation pods. But the more common experience, especially in tech, is grueling “crunch time” to rush a product out the door while worrying about the next performance review. Media accounts of the most famous companies describe workplaces that are aggressive, both for employees and for the “shadow workforce” working on short-term contracts. This work stress affects both physical and mental health. Employees at Uber, Facebook and Google have taken their own lives, prompting discussion of the role of workplace culture in their deaths.

Adding to the stress is the constant threat of layoffs. Even the richest firms regularly fire STEM workers as technologies or markets change or investors demand cost reductions. When Elon Musk took over Twitter and fired more than half the workforce, other CEOs cheered. Musk was hardly a STEM pioneer; workers in the high-demand field of IT are more likely to face layoffs than workers in most other industries. [...]

Adapted from The Los Angeles Times, John D. Skrentny, January 9, 2024

**Question 1.** How does the author explain the labour shortage in STEM fields? Answer in your own words . (80 words +/- 10%) **/4**

**Question 2.** In your opinion, should governments keep investing in STEM education and why?

(180 words +/- 10%) **/8**

**THEME /8**

Un après-midi, j’ai croisé par hasard Mme Economopoulos […]. On a échangé quelques mots sur la saison des pluies et le beau temps, puis elle m’a invité à entrer dans sa maison [...]. Dans son grand salon, mon regard a tout de suite été attiré par la bibliothèque qui couvrait entièrement un des murs de la pièce. Je n’avais jamais vu autant de livres en un seul lieu. Du sol au plafond.

- Vous avez lu tous ces livres ? j’ai demandé.

- Oui. Certains plusieurs fois, même. Ce sont les grands amours de ma vie. Ils me font rire, pleurer, douter, réfléchir. Ils me permettent de m’échapper. Ils m’ont changé, ont fait de moi une autre personne.

- Un livre peut nous changer ?

- Bien sûr, un livre peut te changer ! Et même changer ta vie. Comme un coup de foudre. Et on ne peut pas savoir quand la rencontre aura lieu. Il faut se méfier des livres.

Gaël Faye, *Petit pays*, Grasset, 2016

Translation key

fs: faux-sens cs: contre-sens ns: non-sens

md: mal dit, tmd: très mal dit orth : orthographe

gr ponct: ponctuation synt : syntaxe (l'ordre des mots)

0= un mot qui manque aspect passé/prés

Expression key: M= method, E= English

+M good idea, good link, good example -M unclear, wrong, copied from text

+ E a complex form well used -E simple mistake -E the most serious mistakes

-E 1. Conjugation, pronouns

-E 2. adjectives are invariable / each + singular/ this-that-these-those/  to-for / who-which

Question 1: Victoire

The shortage of STEM workers is a real concern, as only 28% of STEM graduates end up working in STEM. One of the reasons for this is low wages. Indeed, other careers with similar qualifications give better salaries, along with promotion opportunities, whereas some Big Tech companies actively prevent salary increases. Moreover, the constant rush in STEM jobs affects workers' physical and mental health, making their jobs a nightmare. Finally, cost reductions lead to layoffs, which STEM workers are constantly threatened with. (82 words)

Question 2: Octave

With AI being the main breakthrough of the 2020s, more and more workers are needed in STEM jobs like computer science. This raises the following question: to what extent do governments need to keep investing in STEM education?

First and foremost, most governments want to invest in AI, as the US has done with OpenAI. So the more workers there are in AI-required tech fields, the faster and better the job is done. Besides, the world is facing constant new challenges such as global warming. Some STEM jobs might be the key to solving some of them, so they definitely deserve investment.

Notwithstanding, up to 70% of STEM graduates go on to work in other sectors. Can governments use their investment to change this? Take the issue of grants to STEM students: in exchange for a grant, contracts could be introduced which require STEM majors to work in their field for a certain amount of time. Equally, when it comes to working conditions in tech companies, governments could legitimately keep an eye on how STEM workers are treated.

So yes, investment in STEM education is vital, but not at any price. (192 words)

Thème

One afternoon, I unexpectedly / randomly met / came across Mrs Economopoulos / I met Mrs E. by chance. We spent a few moments /exchanging small talk/ chitchatting/ We chatted about nothing much for a few moments/ exchanged / shared a few words about the rainy season and mild / beautiful / nice weather, then she invited me to come in / come into her house / enter her house.

In her large living-room / lounge / drawing-room, my eyes were immediately caught / attracted by the bookshelves that were entirely covering / that totally covered one of the walls of the room, from the floor to the ceiling. I had never seen so many / that many books in one (single) place/ Never had I seen so many books…

“Have you read all these / those books?” I asked.

“Of course. / (For) Sure. Some (of them) even several times / some of them even more than once. They are the big / great loves of my life. They make me laugh, cry, doubt, think. They help/ enable / allow me to get away from reality. They have changed me, made me (become) another person / made me someone else.”

“Can a book change/ transform us?”

“Of course, a book can change/transform you/ Of course it can. And (it can) even change your life, like love at first sight. And you cannot know/predict when the encounter / meeting takes/ will take/ place. One has to be careful / You have to be careful / wary of books."