

**TEST MATEMATICĂ ȘI LIMBA ENGLEZĂ**

**Matematică**

1) Rezultatul calculului  $\sqrt{12}(\sqrt{3} - 3\sqrt{2}) + \sqrt{8}(3\sqrt{3} - \sqrt{2})$  este:

- a) 1                                      b) 2                                      c) 3                                      d) 4

2) Se consideră funcția  $f : \mathbb{R} \rightarrow \mathbb{R}, f(x) = 3x - 2m$ . Valoarea reală a numărului  $m$  pentru care punctul  $A(1;1)$  aparține graficului funcției  $f$  este:

- a) -1                                      b) 1                                      c) -2                                      d) 2

3) Se consideră  $x_1$  și  $x_2$  soluțiile ecuației  $4x^2 + 4x - 3 = 0$ . Valoarea expresiei  $x_1 + x_2 - 4x_1x_2$  este :

- a) 0                                      b) 1                                      c) 2                                      d) 4

4) Se dă mulțimea  $A = \{a; b; c\}$ . Numărul total de submulțimi al mulțimii  $A$  este :

- a) 4                                      b) 6                                      c) 8                                      d) 10

5) Rația progresiei aritmetice  $(a_n)_{n \geq 1}$  în care  $a_3 = 7$  și  $a_5 = 13$  este:

- a) 3                                      b) 4                                      c) 1                                      d) 2

6) Valoarea numărului real  $a$  pentru care termenii  $3; a; 27$  sunt într-o progresie geometrică cu termeni pozitivi este:

- a) 6                                      b) 7                                      c) 8                                      d) 9

7) Se dă numărul complex  $z = 2 - i$ . Partea imaginară a numărului complex  $z^2$  este:

- a) 2                                      b) -4                                      c) -2                                      d) 4

8) Soluția ecuației  $\sqrt{4x - 3} = 3$  este cuprinsă în intervalul :

- a)  $[0; 2]$                                       b)  $[-3; 0]$                                       c)  $[4; 6]$                                       d)  $[2; 4]$

9) Soluția ecuației  $16^x = 2$  este:

- a)  $\frac{1}{4}$                       b)  $\frac{1}{2}$                       c)  $-\frac{1}{2}$                       d)  $-\frac{1}{4}$

10) Soluția ecuației  $\log_5(3x - 2) = 0$  este :

- a) -1                      b) 0                      c) 1                      d) 2

11) Rezultatul calculului  $\frac{A_3^2}{P_2}$  este:

- a) 1                      b) 2                      c) 3                      d) 4

12) Se consideră matricea  $A = \begin{pmatrix} 1 & -1 \\ 2 & 3 \end{pmatrix}$ . Matricea  $A^2$  este:

- a)  $\begin{pmatrix} 1 & 4 \\ -8 & 7 \end{pmatrix}$                       b)  $\begin{pmatrix} -1 & -4 \\ 8 & 7 \end{pmatrix}$                       c)  $\begin{pmatrix} 0 & -4 \\ 7 & 8 \end{pmatrix}$                       d)  $\begin{pmatrix} -1 & 4 \\ -7 & -8 \end{pmatrix}$

13) Soluția ecuației  $\begin{vmatrix} 3 & x \\ 1 & 1 \end{vmatrix} = 6$  este:

- a) -2                      b) 3                      c) 2                      d) -3

14) Valoarea parametrului real  $m$  pentru care sistemul  $\begin{cases} x - 3y + z = 4 \\ mx + 2y - z = 0 \\ 3x - y + 2z = 4 \end{cases}$  admite

soluția  $(1; -1; 0)$  este :

- a) 2                      b) -2                      c) 1                      d) -1

15) Pe  $\mathbb{R}$  se definește legea de compoziție  $x * y = 2xy - 3x - 2y + 5$

Rezultatul calculului  $2 * 3$  este:

- a) 8                      b) 4                      c) 5                      d) 10

16) Rezultatul calculului  $tg30^\circ \cdot ctg60^\circ$  este:

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

17) Fie  $x \in \left[0; \frac{\pi}{2}\right]$ , astfel încât  $\cos x = \frac{3}{4}$ , atunci  $\sin x$  este:

- a)  $\frac{4}{5}$                       b)  $\frac{\sqrt{5}}{4}$                       c)  $\frac{\sqrt{5}}{3}$                       d)  $\frac{\sqrt{7}}{4}$

18) Fie  $x \in [0; 2\pi]$ . Numărul de soluții al ecuației  $2\cos^2 x - 3\cos x + 1 = 0$  este :

- a) 4                              b) 3                              c) 2                              d) 1

## Limba Engleză

### Partea I: CITIT

Choose the correct answer A, B, C or D:

For many people, travelling by plane is an exciting experience. Others, however, find the whole idea quite terrifying, although flying is no more dangerous than any other form of travel and some experts say it is considerably safer. It is known, however, that most accidents occur during take-off and landing when a pilot's decisions are vitally important.

The people whose job it is to look after the passengers - the flight attendants - play an important part in helping passengers to feel safe and comfortable. Indeed for many passengers being shown such care is all part of the total experience. No other form of travel involves waiting on people in quite the same way, with food, drink, newspapers, magazines, music and video movies.

**1. Travelling by plane is a/an -----experience for many people.**

- a) exciting  
b) boring  
c) accidental  
d) experimental

**2. According to the paragraph, flying is no more dangerous than any other form of travel.**

- a) False  
b) Not stated  
c) True  
d) Both a) and c)

**3. When do most accidents occur?**

- a) during landing  
b) while cruising  
c) during take-off  
d) during take-off and landing

**4. What do flight attendants do?**

- a) help passengers feel safe and comfortable
- b) fly the plane
- c) read magazines
- d) enjoy themselves when they are on cloud number 9

**5. \_\_\_\_\_ form of travel involves waiting on people in quite the same way, with food, drink, newspapers, magazines, music and video movies.**

- a) Some other
- b) No other
- c) Any other
- d) Every other

**Partea a II-a:****ELEMENTE DE GRAMATICĂ, VOCABULAR ȘI STRUCTURI SCRISE**

**Choose the correct answer A,B,C or D:**

**6. When the teacher entered the classroom, I \_\_\_\_\_ to Ben.**

- a) was talk
- b) talking
- c) was talking
- d) am talking

**7. If the weather had been fine, we \_\_\_\_\_ for a walk.**

- a) would go
- b) would have gone
- c) will go
- d) will going

**8. You don't speak Japanese, \_\_\_\_\_?**

- a) are you
- b) doesn't you
- c) will you
- d) do you

**9. Where did you get \_\_\_\_\_ flowers?**

- a) those
- b) this
- c) they
- d) that

**10. We have been waiting for you \_\_\_\_\_ three hours.**

- a) since
- b) from
- c) while
- d) for

**11. This car is \_\_\_\_\_ than the other one.**

- a) faster
- b) fastest
- c) fast
- d) as fast as

**12. Jose is from Cuba. He is \_\_\_\_\_.**

- a) Thai
- b) Mexican
- c) Indian
- d) Cuban

**13. Jane is my mother's sister. She is my \_\_\_\_\_.**

- a) aunt
- b) sister-in-law
- c) uncle
- d) ant

**14. It was very \_\_\_\_\_ of you to share your lunch with your friend.**

- a) evil
- b) generous
- c) rude
- d) character

**15. What's your name?**

- a) John. My name's John.
- b) Sally went home 10 minutes ago.
- c) Sam is a very careful driver.
- d) Mike left the country.

**16. Choose the correct sentence:**

- a) George late was for class yesterday.
- b) George for class yesterday late was.
- c) George was late for class yesterday.
- d) Yesterday late was George class for.

**17. Choose the correctly punctuated sentence:**

- a) I'd have enjoyed the journey more if the man next to me hadn't snored all the time,' said Paul
- b) I'd have enjoyed the journey more if the man next to me hadn't snored all the time,' said Paul.
- c) "I'd have enjoyed the journey more if the man next to me hadn't snored all the time," said Paul.
- d) Id have enjoied the journey more if the man next to me hadnt snored all the time' said Paul.

**18. How do you start an e-mail to a close friend?**

- a) Hi, Tom
- b) Dear Mr. Smith
- c) To whom it may concern
- d) Best wishes