

Pruebas para la obtención de títulos de Técnico y Técnico Superior
Convocatoria correspondiente al curso académico 2023-2024

(Resolución de 29 de diciembre de 2023 de la Dirección General de Educación Secundaria, Formación Profesional y Régimen Especial)

DATOS DEL ASPIRANTE			FIRMA
Apellidos:			
Nombre:	D.N.I., N.I.E., o Pasaporte	Fecha: '24/05/2024	

Código del ciclo: ⁽¹⁾ ELES04	Denominación completa del título: ⁽¹⁾ AUTOMATIZACIÓN Y ROBÓTICA INDUSTRIAL
Clave o código del módulo: ⁽¹⁾ CM14	Denominación completa del módulo profesional: ⁽¹⁾ Inglés técnico para grado superior

INSTRUCCIONES GENERALES PARA LA REALIZACIÓN DE LA PRUEBA
<p>INSTRUCCIONES GENERALES PARA LA REALIZACIÓN DE LA PRUEBA</p> <ul style="list-style-type: none">• Cumplimentar los datos del aspirante antes del examen y firmar en todas las hojas que se entreguen.• Tener disponible el DNI en la mesa.• Señalar y escribir con tinta indeleble, que no sea roja, las respuestas y su desarrollo.• Si se ha de rectificar una respuesta, trazar un aspa o tachar con una línea horizontal.• No utilizar correctores (Tipp-Ex o similares)• Utilizar solamente el papel facilitado por el examinador (con el sello y formato correspondiente).• No utilizar material de consulta (salvo aquél que se autorice expresamente).• No se puede dejar ninguna de las pruebas completamente en blanco• La localización, en poder del alumno o en su cercanía de contenidos en medios electrónicos analógicos distintos a los suministrados por el examinador, implica su retirada y la del procedimiento resultando suspenso con la nota de 0.

CRITERIOS DE CALIFICACIÓN Y VALORACIÓN
<ul style="list-style-type: none">• Cada uno de los 4 apartados de la prueba (Reading Comprehension, Use of English, Listening Comprehension y Writing) tiene una puntuación de 2,5 puntos, lo que supone un total de 10 puntos.• Dejar alguna de las partes totalmente en blanco, supone el suspenso de la prueba, y por tanto del módulo• La valoración de cada pregunta aparece reflejada junto a su enunciado.• En caso de penalizaciones, estas se mencionan en la pregunta a la que afectan.• Se considera aprobado un aspirante si tiene un 50% del examen correcto sobre la nota total una vez sumadas todas las puntuaciones de cada apartado.

CALIFICACIÓN

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PART 1 READING COMPREHENSION (2,5 points)

Scientists create living robots that can have babies

Scientists say that a new kind of robot can reproduce - it can create baby robots. This is an example of science fiction becoming science fact. The scientists, from the Universities of Vermont, Tufts and Harvard, created the world's first "living" robots. They are called "xenobots". Scientists created them in 2020 from the stem cells of an African frog. Its scientific name - "xenopus laevis" - gave the xenobot its name. The xenobots are less than a millimetre wide. They can move, work together in groups and self-heal. Although they are not what we imagine robots to be, scientists say they are technically robots. They are a machine-animal hybrid. The scientists say xenobots are "an entirely new life-form".

The scientists explained that the bots reproduce because of their shape. Researchers used artificial intelligence (AI) to test billions of body shapes. The result was a C-shaped robot. It was able to find tiny stem cells in a petri dish. It gathered the cells in its mouth. A few days later, the cells became a new, "baby" xenobot. The xenobots are very early technology. However, they could change science, medicine, technology and the way we live. They could carry out tasks inside our body to repair damage to organs. They could also help the environment by attacking micro-plastics in our oceans, or by cleaning up oil spills. Despite the possible benefits, some people are worried about robots that can reproduce.

1. MULTIPLE CHOICE – QUIZ. Choose the correct answer (10points)

1) What does the article say science fiction is becoming?

- a) dull and boring
- b) science fact
- c) interesting
- d) difficult to understand

2) How many universities are the researchers from?

- a) one
- b) four
- c) three
- d) two

3) What animal does the xenobot get its name from?

- a) an Indian beetle
- b) a South American lizard
- c) an Australian snake
- d) an African frog

4) How wide are the xenobots?

- a) less than a hundredth of a millimetre
- b) less than a millimetre
- c) less than a micron
- d) less than a nanometer

5) What kind of hybrid did a researcher say xenobots were?

- a) a machine-animal hybrid
- b) a life-imagination hybrid
- c) an electric-diesel hybrid
- d) a robot-C hybrid

6) What allowed the bots to reproduce?

- a) its shape
- b) chemicals
- c) electricity
- d) medicine

7) Where did the xenobots find tiny stem cells?

- a) in chemicals
- b) in the air
- c) in water
- d) in a petri dish

8) What could xenobots repair damage to in our body?

- a) our mental health
- b) the aging process
- c) organs
- d) cuts

9) What could xenobots clean up in our oceans?

- a) chemicals
- b) shipwrecks
- c) dead coral
- d) oil spills

10) What are some people worried about?

- a) robots taking over the world
- b) robots that can reproduce
- c) how lonely the xenobots are
- d) naming the xenobots

2. TRUE / FALSE: Circle the correct answer true (T) or false (F). (5 points)

- 1. T / F** The article says science fact has become science fiction.
- 2. T / F** Scientists made the first living robots in 2020.
- 3. T / F** The xenobots got their name from an African frog.
- 4. T / F** The xenobots are less than a hundredth of a millimetre wide.
- 5. T / F** Scientists tested hundreds of thousands of xenobot shapes.

3. SYNONYM MATCH: (The words in bold are from the news article.) Write the letter next to the number in the answers grid below (10 points)

1. reproduce 2. fact 3. created 4. imagine 5. entirely 6. shape 7. gathered 8. carry out 9. repair 10. benefits	a. collected b. totally c. visualize d. fix e. give birth f. do g. made h. advantages i. reality j. form
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ANSWERS

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PART 2 USE OF ENGLISH (2,5 points)

1 Use Read the sentences and choose the correct words. Write the number on the line next to the letter. (8 points)

1. Current 2. Circuit 3 resistance 4 ampere 5. Electron 6. Ohm 7. Conduct 8 charge

- A** ____ : the flow of electricity
- B** ____ : a unit that measures electrical resistance
- C** ____ : how much an object opposes an electric current passing through it
- D** ____ : a system of electrical conductors that electricity flows through
- E** ____ : the act of electricity passing through an object
- F** ____ : the electric property of an object that makes it have an attractive or repulsive force
- G** ____ : the particle in an atom that carries electric currents
- H** ____ : the base unit of an electric current

2 Read the sentences and choose the correct words. Write the number on the line next to the letter. (8 points)

1. glue gun 2. Naphtha 3. heatsink grease 4. Alcohol 5. heat-shrink tubing
6. stereo microscope 7. bench vise 8. clip lead

- A** ____ : a chemical solution used as a cleaning agent
- B** ____ : a device that magnifies images
- C** ____ : melts plastic glue to attach wires to component surfaces
- D** ____ : a lubricant that stops components from overheating
- E** ____ : a short wire used to create an electrical current connection
- F** ____ : a petroleum product used to remove dirt from many surfaces
- G** ____ : a clamp that holds wood or metal in place
- H** ____ : a plastic tube that shrinks in diameter when heated

3 Read the sentences and choose the correct words or phrases. (6 points)

1. The technician used the **frequency counter / analog meter** to track the speed of signal cycles.
2. A(n) **spectrum analyzer / isolation transformer** keeps power input and output separate.
3. A(n) **signal generator / analog meter** uses a moving needle to display measurements.
4. The man used a(n) **signal generator / inductance meter** to test the analog equipment.
5. The woman used an **isolation transformer / inductance meter** to get information about coils.
6. A **spectrum analyzer / frequency counter** shows voltage versus frequency.

4 Read the text and Circle the correct words from the table below .(12 points)

Scientists from two of the USA's (1) ____ universities have pioneered a new method of creating artificial muscles. The scientists have (2) ____ their discovery as a "soft robot". It is a 2.6-gram "muscle" that looks like a small bag with many water-(3) ____ compartments. It has been given amazing strength by supporting it with an origami-(4) ____ structural framework. This allows the artificial muscle to lift an object that is 1,000 times its (5) ____ weight. The New Scientist website said this weight-to-strength ratio is the equivalent of a newborn baby lifting a large 4WD car. The ground-breaking discovery could greatly (6) ____ many areas of science, medicine, robotics and engineering.

The scientists are from the Massachusetts Institute of Technology and Harvard University. They are experts (7) ____ the field of soft robotics. They said their new soft robot muscle can be made (8) ____ just 10 minutes and costs less than one dollar. Researcher, professor Robert Wood, hopes to create "softer" robots that are more similar to humans. He said: "Humans are (9) ____ soft and brittle compared to the big industrial robots that you might find on an assembly (10) ____ . The next step is to take this system and develop it into a (11) ____ functional robot." Dr Daniela Rus explained that the robots could be like the human hand. They could be strong enough to (12) ____ any object firmly, while being soft and gentle.

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|-----|-----------------|----------------|--------------|-----------------|
| 1. | (a) elitism | (b) elite | (c) elitist | (d) elites |
| 2. | (a) dipped | (b) dubbed | (c) dabbed | (d) daubed |
| 3. | (a) fills | (b) filler | (c) filling | (d) filled |
| 4. | (a) inspire | (b) inspired | (c) inspires | (d) inspiration |
| 5. | (a) shown | (b) own | (c) town | (d) down |
| 6. | (a) beneficiary | (b) beneficial | (c) benefit | (d) benefitting |
| 7. | (a) on | (b) at | (c) in | (d) to |
| 8. | (a) on | (b) at | (c) in | (d) to |
| 9. | (a) common | (b) regular | (c) average | (d) normally |
| 10. | (a) flat | (b) dash | (c) box | (d) line |
| 11. | (a) fully | (b) fall | (c) felling | (d) filling |
| 12. | (a) griping | (b) gripping | (c) grip | (d) gripe |

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PART 3 LISTENING COMPREHENSION (2,5 points)

1 Listen to the dialogue and choose the correct answer (10 points)

1 What is the dialogue mostly about?

- A fixing a serial robot
- B the main uses of serial robots
- C designing and building a serial robot
- D the main function of an enabling device

2 What is the problem with the robot?

- A the pendant is not moving correctly
- B the mathematical calculations are incorrect
- C the enabling device will not activate
- D the actuators aren't working properly

2 Listen to the extract and complete the table. Home automation applications (25 points)

<p>1st category Energy saving</p> <ul style="list-style-type: none"> • C..... • N..... L • L • E M..... 	<p>3rd category Home P..... and S</p> <ul style="list-style-type: none"> • D..... of I • Detection of D..... • S of P..... • M..... A.....
<p>2nd category C..... L</p> <ul style="list-style-type: none"> • A..... L • V..... S and D • I of all devices • M..... of all multimedia devices • Audio S and D..... • I S • Internet control • Generation of P..... 	<p>4th category Communications</p> <ul style="list-style-type: none"> • Ubiquitous C..... • A..... transmission • Robotics • R..... C..... • I <p>5th category Other systems</p> <ul style="list-style-type: none"> • G..... doors • P..... feeders

DATOS DEL ALUMNO			FIRMA
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PART 4 WRITING (2,5 points)

WRITING (2.5 points) (Each spelling mistake will deduct 0.2 points).

1. Apply for the job described below. Write the covering letter (100-150 words) following the proper layout used in formal letter writing

- why you are writing;
- where you learnt about the position;
- how you are qualified for it;
- what relevant skills and/or experience make you a good candidate;
- why you want the job.

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