Mohamed Khider University of Biskra

Department of Materials Science | 1^{st} Year Licence
Module: English 1 - Level A2 | University Year 2025/2026

TEST 1

Student Name: _____ *Group:* _____

Instructions: Complete all activities. Write your answers clearly in the spaces provided. Use legible handwriting. No dictionaries or electronic devices allowed.

Activity 1 (4 points): Complete with in / on / at / some / any / must / have to

Failure analysis often depends _____ precise identification of crack origins carried out _____ high-resolution microscopes and documented _____ detailed reports. _____ defects initiate _____ surface imperfections, while _____ internal voids may remain undetected. Investigators _____ apply sophisticated techniques _____ the laboratory, such as scanning _____ multiple magnifications or probing _____ sub-surface regions. _____ cases require fractographic examination _____ elevated temperatures, whereas _____ environmental exposure can alter fracture patterns. Researchers _____ interpret results carefully _____ order to prevent future failures. Consequently, expertise _____ each analytical method is essential for reliable conclusions _____ materials engineering.

Activity 2 (5 points): Formulate appropriate questions for these answers

(1) Answer: "By comparing diffraction patterns."
Question: _____

(2) Answer: "Approximately 3.5 g/cm^3."
Question: _____

(3) Answer: "Because of lattice mismatch." _____

(4) Answer: "The research director."
Question: _____

(5) Answer: "In the transmission electron microscope."
Question: _____

(6) Answer: "During the phase transformation."
Question: _____

(7) Answer: "Less than 10 nanometers."
Question: _____

(8) Answer: "To improve wear resistance."
Question: _____

(9) Answer: "Nearly 1200°C."
Question: _____

(10) Answer: "Not enough data."
Question: _____

Activity 3 (3 points): Complete these conditional sentences correctly

(a) If the nanocomposite _____-- (contain) more graphene, it _____-- (conduct) electricity better.

(b) The coating _____-- (peel) off if the surface _____-- (not/clean) properly.

(c) If researchers _____-- (discover) a new phase, it _____-- (be) published in a journal.

(d) The tensile strength _____-- (increase) if we _____-- (add) more reinforcement.

(e) Failure _____-- (occur) sooner if the stress concentration _____-- (be) higher.

(f) If he _____-- (understand) the mechanism, he _____-- (explain) it clearly.

Activity 4 (8 points): Complete the research report paragraph

The investigation into titanium alloys concluded _____-- (successful – superlative) than previous studies. Dr. Chen's team manufactured _____-- (specimen – plural possessive) using advanced powder metallurgy. The fatigue life of Ti-6Al-4V was _____-- (long – comparative) than commercially pure titanium, however, _____-- (beta alloy / performance – possessive) surpassed all expectations. _____-- (The researchers / hypothesis – possessive) proved correct after extensive testing. Although _____--

(the student / calculation – possessive) contained minor errors, the results remained valid. Throughout the project, the group _____-- (make – simple past) significant contributions to the database. This _____-- (be – simple past) the _____-- (impressive – superlative) outcome the department _____-- (see – simple past) in years.

Do not write below this line – For official use only

Good luck

Dr. Ouaar, F

CORRECTED ANSWER KEY

Activity 1: Expected Answers (4 points): on, in, in, Some, at, any, must, in, at, at, in, at, at, any, have to, in, for, in

> Failure analysis often depends **on** precise identification of crack origins carried out **in** high-resolution microscopes and documented **in** detailed reports. **Some** defects initiate **at** surface imperfections, while **any** internal voids may remain undetected. Investigators **must** apply sophisticated techniques **in** the laboratory, such as scanning **at** multiple magnifications or probing **at** sub-surface regions. **Some** cases require fractographic examination **at** elevated temperatures, whereas **any** environmental exposure can alter fracture patterns. Researchers **have to** interpret results carefully **in** order to prevent future failures. Consequently, expertise **for** each analytical method is essential for reliable conclusions **in** materials engineering.

Activity 2: Expected Answers (5 points):

1. **How do you identify the crystal structure?**
2. **What is the density of the alloy?**
3. **Why does cracking occur at the interface?**
4. **Who approved the experimental protocol?**
5. **Where can you observe dislocation movement?**
6. **When does precipitation start?**
7. **What is the grain size?**
8. **Why are you adding rare earth elements?**
9. **What is the melting point of the superalloy?**
10. **What conclusion can you draw?**

Activity 3: Expected Answers (3 points):

1. If the nanocomposite **contained** more graphene, it **would conduct** electricity better. (Second conditional)
2. The coating **will peel** off if the surface **is not cleaned** properly. (First conditional)
3. If researchers **discover** a new phase, it **will be** published in a journal. (First conditional)
4. The tensile strength **would increase** if we **added** more reinforcement. (Mixed - second/first)
5. Failure **would occur** sooner if the stress concentration **were** higher. (Second conditional)
6. If he **understood** the mechanism, he **would explain** it clearly. (Second conditional)

Activity 4: Expected Answers (8 points):

The investigation into titanium alloys concluded **more successfully** than previous studies. Dr. Chen's team manufactured **specimens'** using advanced powder metallurgy. The fatigue life of Ti-6Al-4V was **longer** than commercially pure titanium, however, **the beta alloy's performance** surpassed all expectations. **The researchers' hypothesis** proved correct after extensive testing. Although **the student's calculation** contained minor errors, the results remained valid. Throughout the project, the group **made** significant contributions to the database. This **was** the **most impressive** outcome the department **had seen** in years.

Grading Guide:

Activity	**Points**
Activity 1 (18 blanks)	4 points
Activity 2 (10 questions)	5 points
Activity 3 (12 blanks)	3 points
Activity 4 (10 blanks)	8 points
TOTAL	**20 points**

Good luck with your studies

Dr. Ouaar, *F*