Mohamed Khider University of Biskra

Department of Materials Science
Module: English 1 - Level A2
Date: January 08th, 2026

1st Year Licence
University Year 2025/2026
Time: 10:00–12:00

Final Examination

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): **Fill in the blanks with: in / on / at / some / any / have to /must:**

In materials science, the characterization of new alloys depends _____ precise measurements carried out _____ controlled laboratory conditions and analyzed _____ multiple length scales. _____ techniques assume ideal microstructures, while _____ deviation from these assumptions may lead to incorrect predictions about mechanical behavior. Researchers _____ consider defects occurring _____ crystal lattices, such as dislocations _____ grain boundaries or precipitates _____ solid solutions. _____ materials exhibit phase transformations rapidly _____ elevated temperatures, whereas _____ external stress can alter deformation mechanisms. Engineers _____ account for processing limitations _____ order to ensure reliable component design. Consequently, rigorous validation _____ each stage of materials testing is essential for advancing knowledge _____ metallurgy and polymer science.

Activity 2 (5 points): **Fill in the blanks with suitable WH question words:**

(1) _____ are the tensile test specimens stored? – "They are in the metallography lab."

(2) _____ was the hardness measurement recorded? – "At 300°C."

(3) _____ is the yield strength of this alloy? – "Approximately 250 MPa."

(4) _____ does fracture typically initiate in this material? – "At the stress concentration point."

(5) _____ do you calibrate the scanning electron microscope? – "Every Monday morning."

(6) _____ temperature is required for the solution heat treatment? – "850°C for 2 hours."

(7) _____ do you analyze the microstructure of ceramics? – "By X-ray diffraction and SEM."

(8) _____ conducted the fracture surface analysis? – "The research assistant."

(9) _____ are you applying a protective coating? – "Because corrosion reduces fatigue life."

(10) _____ laboratory equipment is most expensive? – "The transmission electron microscope."

Activity 3 (3 points): **Match the two parts to form logical conditional sentences:**

1. If the alloy contains more carbon,	a. if we used carbon fiber reinforcement.
2. If the temperature exceeds 1000°C,	b. the grains would grow excessively.
3. The composite would be lighter	c. it will increase hardness significantly.
4. If you need the tensile test results,	d. I will send them by email immediately.
5. We will analyze the microstructure	e. if the equipment is calibrated.
6. The specimens will corrode rapidly	f. if they are exposed to saltwater.

Activity 4 (8 points): Fill in the blanks with:

possessive nouns, simple past, and comparative/superlative forms

Yesterday, the materials science class conducted _____ experiment on aluminum alloys. This was the _____ (difficult – superlative) mechanical test of the semester. The 2024-T3 alloy's strength was _____ (high – comparative) than the 1100 series, but the 7075-T6 showed the _____ (good – superlative) overall properties. The professor checked _____ (the students / data – possessive) and noted that _____ (Maria / calculation – possessive) was the most accurate. Unfortunately, _____ (the group / sample – possessive) was contaminated during preparation. At the end, everyone _____ (become – simple past) more confident in materials characterization techniques.

Good luck

Dr. Ouaar, F

CORRECTED ANSWER KEY

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

In materials science, the characterization of new alloys depends **on** precise measurements carried out **in** controlled laboratory conditions and analyzed **at** multiple length scales. **Some** techniques assume ideal microstructures, while **any** deviation from these assumptions may lead to incorrect predictions about mechanical behavior. Researchers **must** consider defects occurring **in** crystal lattices, such as dislocations **at** grain boundaries or precipitates **in** solid solutions. **Some** materials exhibit phase transformations rapidly **at** elevated temperatures, whereas **any** external stress can alter deformation mechanisms. Engineers **have to** account for processing limitations **in** order to ensure reliable component design. Consequently, rigorous validation **at** each stage of materials testing is essential for advancing knowledge **in** metallurgy and polymer science.

Activity 2: WH Question Words (5 points, Sentence 4 omitted):

1. **Where** are the tensile test specimens stored?
2. **When** was the hardness measurement recorded?
3. **What** is the yield strength of this alloy?
4. **Where** does fracture typically initiate in this material?
5. **When** do you calibrate the scanning electron microscope?
6. **What** temperature is required for the solution heat treatment?
7. **How** do you analyze the microstructure of ceramics?
8. **Who** conducted the fracture surface analysis?
9. **Why** are you applying a protective coating?
10. **Which** laboratory equipment is most expensive?

Activity 3: Correct Conditional Sentences (3 points, Six sentences):

1. If the alloy contains more carbon, **c. it will increase hardness significantly.** (First conditional)
2. If the temperature exceeds 1000°C, **b. the grains would grow excessively.** (Second conditional)
3. The composite would be lighter **a. if we used carbon fiber reinforcement.** (Second conditional)

4. If you need the tensile test results, **d. I will send them by email immediately.** (First conditional)
5. We will analyze the microstructure **e. if the equipment is calibrated.** (First conditional)
6. The specimens will corrode rapidly **f. if they are exposed to saltwater.** (First conditional)

Activity 4: Completed Paragraph (8 points):

Yesterday, the materials science class conducted **an** experiment on aluminum alloys. This was the **most difficult** mechanical test of the semester. The 2024-T3 alloy's strength was **higher** than the 1100 series, but the 7075-T6 showed the **best** overall properties. The professor checked **the students' data** and noted that **Maria's calculation** was the most accurate. Unfortunately, **the group's sample** was contaminated during preparation. At the end, everyone **became** more confident in materials characterization techniques.

Grading Guide:

Activity	**Points**
Activity 1 (16 blanks)	4 points
Activity 2 (10 questions)	5 points
Activity 3 (6 conditionals)	3 points
Activity 4 (8 blanks)	8 points
TOTAL	**20 points**

Good luck with your studies

Dr. Ouaar*, F*