

## Englisch

Name, Vorname:

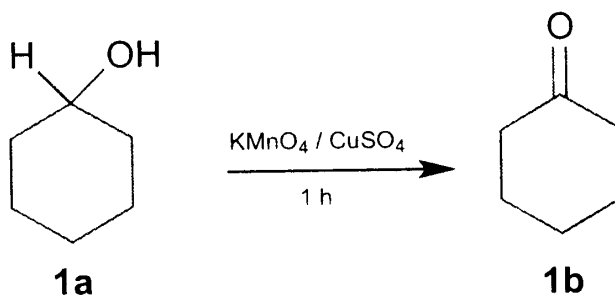
Note

### Hinweise:

- Erlaubte Hilfsmittel: gedrucktes oder elektronisches Wörterbuch
- Prüfungszeit: 60 Minuten (Teil 1 ca. 40 Minuten, Teil 2 ca. 20 Minuten)
- Bewertung: Teil 1 zählt 2/3, Teil 2 zählt 1/3 der Note im Englisch. Notenschlüssel gemäss Prüfungskommission.

**Teil 1: Übersetzung engl. Fachtext ins Deutsche** (*Übersetzung auf 4. Seite schreiben*)

### *A Solvent-Free Oxidation of Alcohols in an Organic Laboratory*



#### Experimental Procedure

A powdered mixture of the oxidant was prepared by grinding 1.58 g (10.0 mmol) of  $\text{KMnO}_4$  with 2.5 g (10.0 mmol) of  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  with a mortar and pestle until the mixture was visually homogeneous. The alcohol (1a) (4.82 mmol) was added to a 25 –mL round bottom flask, followed by the addition of ca. 4 g (10 mmol) of the oxidant mixture.

The resulting reaction mixture was stirred vigorously with a spatula until the flask began to become warm, indication initiation of the exothermic reaction. A reflux condenser was immediately attached and the flask was placed in a preheated hot water or steam bath at ca. 100 °C. After 1 h, the reaction was complete. The mixture was cooled to room temperature and desorbed from the solid reaction byproduct with two 10-mL portions of hexane. The hexane solution was suction filtered. Drying of the filtrate with  $\text{MgSO}_4$ , gravity filtration, and evaporation of the solvent produced the desired ketone (1b) in near quantitative yield. TLC analysis using 5:1 hexane:ethyl acetate as the elution solvent confirmed that the alcohol had been consumed. Comparison was also made between the infrared spectra of the starting material and the product.

#### Hazards

Potassium permanganate is a potent oxidizing agent. Care should be taken when used in conjunction with organic materials and strong acids. Thermal decomposition may yield toxic fumes of manganese oxides. Keep reaction temperature at 100 °C or below to help to avoid thermal decomposition. Hexane is a flammable solvent.

## Teil 2: Grammatik

### A Grammar

**1 Fill in the correct time: present or present continuous! (5 pts)**

**Situation: Kate is in a restaurant and is reading an Italian course book.**

- Kate's a teacher. She \_\_\_\_\_ (teach) physics.
- She \_\_\_\_\_ (not teach) now.
- She \_\_\_\_\_ (have) a coffee.
- She \_\_\_\_\_ (learn) Italian because ...
- ... she \_\_\_\_\_ (go) to Varazze/Italy every summer.

**2 Present simple or present continuous? Fill in the correct time: present or present continuous! (9 pts)**

**Situation: James is on holiday in Varazze (Italy).**

James (work) \_\_\_\_\_ in London, but he (not live) \_\_\_\_\_ there. Every morning he (get up) \_\_\_\_\_ at 6.00 and he (go) \_\_\_\_\_ by train to London. The journey (take) \_\_\_\_\_ an hour and he (not get) \_\_\_\_\_ home till 8.00 in the evening. He (not work) \_\_\_\_\_ now. He (have) \_\_\_\_\_ a holiday. He (stay) \_\_\_\_\_ in a hotel in Varazze.

**3 Past or past continuous? Fill in the gap with the correct form. (8 pts)**

I \_\_\_\_\_ (go) to a club last night and I \_\_\_\_\_ (see) a good-looking boy. When I \_\_\_\_\_ (arrive) at the club people \_\_\_\_\_ (talk) to each-other, but nobody \_\_\_\_\_ (dance) because the music wasn't very good. I \_\_\_\_\_ (have a drink) , then I \_\_\_\_\_ (decide) to go home. I \_\_\_\_\_ (look) for my bag.

**4 Past or present perfect? Fill in the gap with the correct form. (14 pts)**

**Situation: Luigi is an Italian student.**

I (come) \_\_\_\_\_ to Milan ten years ago. I (live) \_\_\_\_\_ in Milan for \_\_\_\_\_ . I (study) \_\_\_\_\_ English for 5 years. I (start) \_\_\_\_\_ studying English five years \_\_\_\_\_ . I (start) \_\_\_\_\_ university two years ago. I (be) \_\_\_\_\_ at university for \_\_\_\_\_. I (know) \_\_\_\_\_ my English girlfriend Gemma for a year. I (meet) \_\_\_\_\_ my girlfriend Gemma a year \_\_\_\_\_ .

She (come) \_\_\_\_\_ to live in Italy three years ago. She (live) \_\_\_\_\_  
in Italy \_\_\_\_\_ three years. We (buy) \_\_\_\_\_ a car – an old Fiat.  
We (buy) \_\_\_\_\_ it last week. We (have) \_\_\_\_\_ since a  
week.

*5 Make questions or give answers (10 pts)*

What nationality are you?

By train.

About 45 minutes.

Have you got any brothers and sisters?

Blue.

Fish.

I feel very well.

Can you play any musical instrument?

What do you want to do when you grow up?

It's football.

**Punkte Teil 2**

**Note Teil 2**

Name, Vorname:

Punkte Teil 1

Note Teil 1

Deutsche Übersetzung (Teil 1):

## Englisch – Lösungen

---

### Teil 1: Übersetzung engl. Fachtext ins Deutsche

#### Eine lösungsmittelfreie Oxidation von Alkoholen in einem organischen Labor

##### Vorgehen

Eine gepulverte Mischung des Oxidationsmittels wurde durch Malen von 1.58 g (10.0 mmol)  $\text{KMnO}_4$  mit 2.50 g (10.0 mmol)  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  mit einem Mörser und Pistill hergestellt, bis die Mischung sichtbar homogen war. (3)

Der Alkohol (1a) (4.82 mmol) wurde in einen 25 ml Rundkolben gegeben gefolgt von der Zugabe von ca. 4g (10 mmol) der Oxidationsmittelmischung. (3)

Die resultierende/so erhaltene Reaktionsmischung wurde kräftig mit einem Spatel gerührt bis der Kolben warm wurde, was den Start der exothermen Reaktion zeigte. (3)

Ein Rückflusskühler wurde sofort befestigt /montiert / aufgesetzt und der Kolben bei ca.  $100^\circ\text{C}$  in ein heisses Wasser- oder Dampfbad gesetzt / gestellt. (3)

Nach einer Stunde war die Reaktion beendet. (1)

Die (Reaktions)Mischung wurde auf Raumtemperatur gekühlt und mittels zwei 10 ml Hexanportionen vom Reaktionsnebenprodukt gereinigt. (3)

Die Hexanlösung wurde vakuumfiltriert (unterdruckfiltriert). (1)

Das Trocknen des Filtrats mit  $\text{MgSO}_4$ , (Schwerkraft) Filtrieren und abdampfen des Lösungsmittels ergab in nahezu quantitativer Ausbeute das gewünschte Keton (1b). (3)

Die Dünnschichtchromatographie mit dem Laufmittel Hexan:Ethylacetat 5:1 bestätigte, dass der Alkohol verbraucht worden ist. (2)

Es wurde auch der Vergleich der Infrarotspektren des Startmaterials und des Produkts gemacht. (2)

##### Gefahren

Kaliumpermanganat ist ein starkes Oxidationsmittel. (1)

Man sollte Vorsicht walten lassen, wenn es in Verbindung mit organischen Materialien und starken Säuren gebraucht wird. (2)

Thermische Zersetzung kann zur Bildung von toxischen Dämpfen von Manganoxiden führen. (2)

Die Reaktionstemperatur soll bei  $100^\circ\text{C}$  oder darunter gehalten werden, um thermische Zersetzung zu vermeiden. (2)

Hexan ist ein brennbares Lösungsmittel. (1)

## Teil 2: Grammatik

### A Grammar

1 Situation: Kate is in a restaurant and is reading an Italian course book.

Fill in the correct time: present or present continuous! (5pts)

Kate's a teacher. She **teaches** (teach) physics.

She **is not teaching** ( not teach) now.

She **is having** (have) a coffee.

She **is learning** (learn) Italian because ...

... she **goes** (go) to Varazze/Italy every summer.

2 Present simple or present continuous? Fill in the correct time: present or present continuous!

Situation: James is on holiday in Varazze (Italy). (9pts)

James (work) **works** in London, but he (not live) **doesn't live** there. Every morning he (get up) **gets up** at 6.00 and he (go) **goes** by train to London. The journey (take) **takes** an hour and he (not get) **doesn't get** home till 8.00 in the evening. He (not work) **isn't working** now. He (have) **is having** a holiday. He (stay) **is staying** in a hotel in Varazze.

3 Past or past continuous? Fill in the gap with the correct form. (8pts)

I **went** (go) to a club last night and I **saw** (see) a good-looking boy. When I **arrived** (arrive) at the club people **were talking** (talk) to each-other, but nobody **was dancing** (dance) because the music wasn't very good. I **had a drink** (have a drink) , then I **decided** (decide) to go home. I **was looking** (look) for my bag.

4 Past or present perfect? Fill in the gap with the correct form.

Situation: Luigi is an Italian student. (14 pts)

I (come) **came** to Milan ten years ago. I (live) **'ve lived** in Milan for **10 years** . I (study) **'ve studied** English for 5 years. I (start) **started** studying English five years **ago** . I (start) **started** university two years ago. I (be) **'ve been** at university for **two years**. I (know) **'ve known** my English girlfriend Gemma for a year. I (meet) **met** my girlfriend Gemma a year **ago** .

She (come) **came** to live in Italy three years ago. She (live) **'s lived** in Italy **for** three years.

We (buy) **'ve bought** a car – an old Fiat. We (buy) **bought** it last week. We (have) **have had it** since a week.

5 Make questions or give answers (10 pts)

What nationality are you?

I'm Swiss.

How do you get to school?

By train.

How long does your journey to ... take?

About 45 minutes.

Have you got any brothers and sisters?

Yes, I have. / No, I haven't.

What's your favourite ... colour?

Blue.

What's your favourite food/animal?

Fish.

How are you?

I feel very well.

Can you play any musical instrument?

Yes, I play .... / No, I can't.

What do you want to do when you grow up?

I'd like to be a teacher/...

What's your favourite sport?

It's football.